HUMAN, TECHNOLOGIES AND QUALITY OF EDUCATION

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CILVĒKS, TEHNOLOĢIJAS UN IZGLĪTĪBAS KVALITĀTE

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PREFACE

Long time traditions and scientific innovations – 80th International conference of the University of Latvia

It was already the 80th international conference of the University of Latvia (UL) organized in 2022 and this conference provided a possibility to share ideas, to discuss research results, to search for solutions and to show the results of creative activity. The conference program consisted of multiple sections where researchers from University of Latvia and colleagues from 27 different countries participated.

This volume contains the best articles from the LU 80th conference subsection "Humans, Technologies and the Quality of Education", which was a major theme for this section and as for previous conferences, there was the link between education, psychology, sports and arts, fields of sciences represented at the Faculty of Pedagogy, Psychology and Art. The ever-changing scope and rapid development of the society create new problems and questions, resulting in the real needs for sharing brilliant ideas and stimulating good awareness of this important research field, discuss the practical challenges encountered and the solutions adopted, and provide valuable ideas for future innovations.

In total, the work of the section "Humans, Technologies and Quality of Education" was organized into 15 subsections, namely – Quality of Education and Effective Management of the Education System; Results of the Research Projects of the Project "Human, Technology and Quality of Education"; Education to promote Social Equality; Topicalities in Foreign Language Teaching Methodology and Digital Citizenship Education; Plenary session. Human, Technologies and Quality of Education; Traditions and Innovations in Pre-school and Primary School Education; Language and Literature in the Context of Education; Current Research in Psychology; Art. Design. Technology. Education; Teacher Resilience: Problems and Solutions; Digital Transformation of Education; Research and Evidence Based Higher Education; Perspectives of Cultural Heritage in Educational Sciences; Teacher Professionalism and Education for the Future; Sport for the Sustainability of Society and the level of interest in the subject matter of those sections was high and there were 232 suitable papers and creative innovations of faculty submitted for presentation at the conference. The volume of conference proceedings "Humans, Technologies and Quality of

Education" contains 81 article which are dealing with topics about different aspects of educational sciences, psychology, sport and art.

All the chapters included in this book were double-blind peer-reviewed to ensure that the materials included in this volume are high quality and are dealing with important research topics and that these materials can indeed be of interest to the community. We would like to express our gratitude and appreciation for all of the reviewers who helped us maintain the high quality of manuscripts included in the proceedings.

I am very grateful to all the authors who put their efforts into the preparation of their chapters and the members of the scientific committee who ensured the quality of the conference presentations and of the papers subsequently submitted to the proceedings.

We are also indebted to those who served as chairmen. Without their support, the conference could not have been the success that it was and special acknowledgment goes to the members of the organizing committee who all contributed greatly in making this conference of its kind a reality.

I hope that the conference proceedings will contribute to the field and open up new lines of research, new ideas, and new concepts to be presented and discussed at upcoming conferences.

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Professor Linda Daniela
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COGNITIVE ABILITIES IN CHILDREN WITH ADHD, COMORBID EPILEPSY AND TYPICALLY DEVELOPED CHILDREN

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ABSTRACT

The aim of the study was to assess the differences in cognitive abilities compared across clinical and control groups. It was hypothesized that differences between groups would be small or non-existant, due to rather heterogeneous clinical profiles. And they could be partially explained by participants' age as cognitive abilities develop over time. Further analysis of the sample was performed by creating cognitive ability profiles of the participants. The study used data from the project "Development of a Screening Method for Children with ADHD and CSWS in Children aged 7–15", and included data from 97 children, which were divided into 3 groups: ADHD, combined ADHD and epilepsy and control group. For assessing cognitive abilities an extended battery of executive and other cognitive computerized tests were used: Stroop Color and Word Test, Digit Span Test, Symbol Digit Modalities Test, and Continious Performance Test. The analysis of cognitive ability profiles reveals a wide range of heterogeneity in both clinical and control groups. It revealed that children with ADHD and combined ADHD and epilepsy have more profiles with lower cognitive abilities compared to control group. Some children with ADHD have similar cognitive profiles to those of typically developed children, suggesting that in some cases there may be a small difference in cognitive performance between ADHD and typically developed children.

Keywords: *ADHD, cognitive abilities, executive functions, attention deficit and hiperactivity syndrome, epilepsy*

Introduction

Attention Deficit Hyperactivity Disorder (ADHD) is the most commonly diagnosed mental health disorder in children and adolescents (Willcutt, 2012). This disorder often is associated with impairment of executive functions (Magnus et al., 2021), as well as non-executive functions (Song,

2015), like sustained and selective attention (Song et al., 2012) and processing speed (Willcut et al., 2005). The impairment of different cognitive abilities is considered to be one of the most important features of ADHD (Kofler et al., 2019). But despite the fact that children with ADHD suffer from delayed development of the fronto-striato-parietal and fronto-cerebellar networks that are responsible for cognitive functioning (Rubia, 2013), not all of children with ADHD will express them (Nigg et al., 2005; Willcut et al., 2005; Friedmann et al., 2016). Although impairment of cognitive abilities can be grouped into several subgroups when viewed in a clinical population, the heterogeneity of symptoms, clinical outcomes, and behavior at the individual level can differ significantly (Karalunas & Nigg, 2020).

Researchers have attempted to identify and classify symptoms through statistical analysis and create profiles of children with ADHD based in different domains (Bergwerff et al., 2019; Costa Dias et al., 2015; Fair et al., 2012), but to date, no universal and exhaustive classification has been established that could classify all children in distinct subgroups (Bergwerff et al., 2019). This subtyping of ADHD was an attempt to address clinical heterogeneity; however, variation in clinical symptoms, behavior and expressions is significant even within one subtype, and similar variation is also expected in the etiology and pathophysiology of the disorder (Fair et al., 2012; Karalunas et al., 2014; Nigg & Casey, 2005). DSM-V includes 3 subtypes of ADHD, based on the primary symptoms – predominantly Inattentive, predominantly Hyperactive-Impulsive, and Combined type (APA, 2013). ADHD is usually diagnosed based on the number, severity and duration of symptoms observed by parents or carers and teachers. Biological or etiological parameters are generally not taken into account when making the diagnosis. Studies and clinical trials in psychiatry are mainly based on the assumption that the diagnostic criteria that appear in DSM represent homogeneous population of disorder. If these criteria are strictly applied, such a categorical comparison of individuals or groups may not take into account subtle phenotypic variations. And it may pose a risk that children who do not show a sufficient number of symptoms or whose symptoms are not observed by their parents do not receive diagnosis and help even though they suffer from cognitive ability impairments and related issues.

In recent years, the dimensions of emotional, behavioral, and cognitive functioning in children with ADHD have been studied to better understand the etiology of ADHD to improve clinical outcome (Karalunas & Nigg, 2020). Researchers have begun to pay more attention to the impact of various factors on ADHD and how neurobiological pathways can contribute to the development of symptoms of external (behavioral) and latent (neurocognitive) disorders (Zeeuw et al., 2012).

Epilepsy is a chronic, neurological disorder, the main symptom is spontaneous, repeated seizures (Shneker & Fountain, 2003) resulting from an sudden increase in electrical activity between neurons (Bromfield, Cavazos & Sirven, 2006). Some children with epilepsy also have memory and speech impairment, difficulty concentrating, hyperactivity, irritability, other mental disorders or behavioral disorders (Yuan, Li & Zhong, 2015). Due to epilepsy causing exacerbate pre-existing cognitive impairment, patients with epilepsy are more prone to cognitive and behavioral deficits (Motamedi & Meador, 2003). Patients with epilepsy most often suffer from memory impairment, especially short-term memory due to seizure-induced changes in the temporal lobe and hippocampus (van Rijckevorsel, 2006).

The aim of this study is to assess the differences in impairment of several cognitive abilities compared across clinical and control groups using a novel evaluation platform. It was hypothesized that due to rather heterogeneous clinical profiles, differences between groups would be small or non-existant. And the existing differences could be partially explained by participants age. And to better understand the heterogeneity of cognitive abilities in all groups, further analysis by developing unique cognitive profiles of the participants was explored.

Methods

Participants

The study used data from the project "Development of a Screening Method for Children with ADHD and CSWS (continuous spike-wave syndrome) in Children aged 7–15". First the clinical groups (ADHD and combined ADHD and epilepsy) were recruited through CCUH (Children's Clinical University Hospital). And after a social media campaign on Facebook.com was started, asking parents with children to participate in a scientific study. The capmpaign was active from March, 22 – August, 28, 2021. Initially 519 applications for participating in the study were recieved. After a follow-up e-mail with information about the study and a phone call about the instructions 151 children performed the testing from which 97 were consistent for this study.

A Facebook campaign inviting parents / legal guardians to join the study without any monetary incentives for rewarding participation was chosen for the selection and enrollment of participants for the study due to epidemiological restrictions of COVID-19. The campaign lasted from 22nd of March to 28th of August 2021. Together 519 applications were received and all of these received emails containing full information about the study, its goals and testing procedure. In the end, 151 successfully completed the testing procedure due to initial screening (children's age, ability to read, access to the computer, attention or behavioral difficulties and if a child

had a diagnosis) or participants dropping out. To ensure equal testing conditions, Calls with each parent or legal guardian participating in the study were arranged to explain the process of the remote testing and all the instructions and necessary preparations in order to achieve the most equal conditions for testing. Exploro.lv platform was used to carry out the remote testing. From these, due to ambiguity of their clinical symptoms, 97 were used for the data analysis.

Due to the epidemiological restrictions of COVID-19, the testing was conducted remotely using exploro.lv test platform. The researchers sent an email to the parents and legal guardians with information about the study and its goals, detailed instructions for testing. Calls with each parent or legal guardian participating in the study were arranged to explain the process of the remote testing and all the instructions and necessary preparations in order to achieve the most equal conditions for testing.

The children were divided into relevant groups by either clinical diagnosis in case of Epilepsy and ADHD groups or by Conner's ADHD index subscale results (clinical group if over 75 T, control group if under 58 T) in case of ADHD or control groups. Overall, 97 children were enrolled in the study separated into three groups as follows: ADHD ($n = 51$, $M = 10.12$, $SD = 0.45$, 72.5% boys), ADHD and epilepsy ($n = 12$, $M = 9.9$, $SD = 1.95$, 75 boys), and control group ($n = 34$, $M = 9.13$, $SD = 1.80$, 73.5% boys).

Instruments

1) Finger Tapping Test. To assess motor and psychomotor functioning, Finger Tapping test (FTT, Reitan, 1959, modification by Vanags, Ekmanis, 2018) was used. Participants are asked to tap the "Space" button with their index finger as fast as possible first with the left hand, then – with their right hand. For each hand there are 3 attempts each lasting for 10 seconds with 3 seconds rest between each.

2) Stroop Color and Word Test *(SCWT,* Stroop, 1935, modification Vanags & Ekmanis, 2018). The test consists of 3 parts with congruent, non-congruent and control stimuli. In the first part the participant must press a key each time when the color name appears on the screen. In the second part the participant must press a key only when the color name matches the color of the word. During the third part the participant must press a key only when the color name does not match the color of the word. The reaction time and missed reactions or incorrect reactions for each step are calculated.

Three test indicators were used: reaction time measuring information processing speed and visual attention from the first step. The average number of correct responses from the second and third steps, which reflects the ability of working memory, inhibitory control and selective attention (Strauss et al., 2006). From the third step the number of incorrect clicks was

used as a measure to reflect impairments in inhibitory control (cognitive inhibition) (Sørensen et al., 2013)

3) Digit Span Test *(*Terman, 1916, modification Vanags, Ekmanis, 2018) was used to measure working memort abilities. The test consists of two parts: (1) a series of numbers that must be memorized and entered in the required field in the order in which they were displayed, and (2) a series of numbers that must be memorized and entered in the required field in the reverse order in which they were displayed. Each string of numbers is displayed once, and with every step one digit is added to the string.

This study used the number of all correctly entered digits as a measure of an individual's short-term memory capacity (Jarrold & Towse, 2006).And the number of digits entered correctly in the opposite order reflects an individual's working memory abilities (switching, manipulation, and dual processing) (Beblo et al., 2004).

4) Symbol Digit Modalities Test (SDMT, Smith, 1968), modification Vanags, Ekmanis, 2018). On the top of the screen are 2 rows – the first contains numbers, the second corresponding symbols. The test taker must fill in the corresponding number for each symbol that appears on the screen. For example, the symbol "@" is given, for which the corresponding number is "1", then when the symbol "@" appears, the respondent must press the number "1", Errors cannot be corrected, the participant must continue till the time limit ends.

Indicators of visual processing and motor speed, visual attention were measured with the SDMT. Most traditional measures of information processing speed also require a motor response to facilitate performance (Low et al., 2017). At the most basic level, information processing speed should encompass at least two main domains, one of which would be the speed of any primary non-motor/cognitive activity (e. g. perceptual speed for attentional activation or auditory processing speed) and the other of motor or physical activity (e. g. psychomotor speed or reaction time). This goes also for Symbol Digit Modalities test, where the individual has to fill the empty box as quickly as possible with the relevant symbol – both motor speed and the ability to switch their attention from the given sample to the empty box and back are required, and the speed of information processing is also important.

5) Computerized CPT test (Sonuga-Barke et al., 2008, modification by Vanags & Ekmanis, 2018). The continuous performance test allows the evaluation of sustained and selective attention, impulsivity, or inability to slow down their response (Sonuga-Barke et al., 2008). During the test, various letters are displayed on the screen and the participant must press the spacebar each time when a letter that is not "b" is being displayed and restrain their reaction to press the button when the letter "b" appears. The test continues for 2 minutes.

6) Demographic survey. Each parent or legal guardian filled the demographic survey about child's age, ability to read, ADHD and epilepsy diagnosis (if applicable).

7) Conner's Parent Rating scale (Conners et al. 1998). The question-naire consists of 80 statements and 13 subscales. Answers to statements about the child should be given according to the child's behavior during the last month. Statements are on a Likert scale from 0 to 3, where 0 is "Not at all (very seldom, never)", 1 is "A little (sometimes)", 2 is "Quite a lot (often, quite a lot)" and 3 is "Very (very often)'. In order to more accurately divide children into the clinical or control group, a subscale of this survey – the ADHD index – was used.The scoring was performed according to the test manual and established cutoff points for possible and likely ADHD (less than 58 standardized T-score for control group and more than 75 standardized T-score for ADHD group).

Based on the available literature, while describing each test used and its obtained scores, the cognitive abilities they mostly measure were also described. For the most part, cognitive tests measure various cognitive abilities in general, but to make it easier to navigate the cognitive ability indicators obtained from the tests were conceptualized.

In the further statistical calculations, the description of the results, the discussion part and the conclusions, these conceptualized names of the indicators of cognitive abilities will be used, which can be seen in Table 1.

Table 1. Cognitive domains and test variables used to measure them and and abbreviations for profile analysis presented in the second part of the results.

Variable from test	Cognitive ability domain
SDMT correct answer mean response time	Information processing and motor speed – A, a
SDMT incorrect number of answers	Visual attention – B, b
DST amount of numbers in forwards	Visual short-term memory – C, c
DST number of numbers in backwards	Visual working memory – D, d
SCWT mean response time	Information processing speed – E, e
SCWT 2nd and 3rd step mean correct number of answers	Working memory, inhibition, selective attention – F, f
SWCT 2nd and 3rd step mean incorrect number of answers	Inhibition control (cognitive inhibition) – G, g
CPT number of impulse taps	Inhibition control (response inhibition) – H, h
CPT number of correct taps	Selective and sustained attention – I, i

Procedure

The study used data from the project "Development of a screening method for children with ADHD and CSWS in children aged 7–15 years". This project was implemented in collaboration with students and researchers of the University of Latvia (UL) and CCUH specialists. Permission for the research was received from the Ethics Commission of the UL (Institute of Cardiology and Regenerative Medicine) and CCUH. Parents were able to enroll their children in the study through a survey that gathered the first information needed to make a selection (age, literacy, diagnoses made, child's difficulties, computer availability, etc.). Also, the procedure of the study and its goals have been agreed with the representatives of the study participants through informed consent, which was sent by email. In the face of the epidemiological situation in the country (Covid-19 restrictions), testing was moved to a remote environment. The testing took place via the exploro.lv platform, where the necessary cognitive test battery, informative data survey and ADHD Conner's parent survey were created. Detailed testing instructions were developed, which were sent to the email provided by the parents and then discussed individually with each child's parent in order to achieve the most equal conditions for testing. After an in-depth presentation of the testing protocol, a link to the test battery created by exploro.lv was sent to the parents. The testing of the children was administered by the parents. The parent or legal guardian filled demographic survey and Conner's parent survey. After the testing was completed the parent had the chance to report whether there were circumstances that could have left a negative impact on child's testing results, e. g. the sibling run into the room.

Results

ANCOVA analysis

Descriptive statistics for all variables used for calculating results can be seen in Table 2. To test our hypothesis, ANCOVA was used with variable age as a covariate. All assumptions (normality, linearity, homogeneity, independent sample*s)* were met supporting the choice of this method.

First, a Spearman's Rho coefficient was calculated to find which dependent variables correlate with age of participants (see Table 3). Five of nine variables showed statistically significant correlation with age of which three were positive ones (Visual short-term memory $r = .43$, $p < .001$, Visual working memory $r = .427$ $p < .001$, Executive functions $r = .262$, $p < .001$), and two negative ones (Motor speed, $r = -.686$, $p < .001$, Information processing speed, $r = -.51$, $p < .001$).

These five variables were then put into ANCOVA model (see Table 3) with variable age as a covariate.

Table 2. Descriptive statistics for the visual attention, information processing and motor speed, visual short-term memory, visual working memory, inhibition control, information processing speed, working memory, inhibition and selective attention, inhibition control, selective and sustained attention variables used in the study

Variable	M	SD
Visual attention	1,77	1,86
Information processing and motor speed	2933,35	1196,21
Visual short-term memory	26,34	10,31
Visual working memory	20,88	9,83
Inhibition control	2,29	4,48
Information processing speed	377,02	142,64
Working memory, inhibition, selective attention	21,42	3,39501
Inhibition control	2,5256	3,31117
Selective and sustained attention	191,60	4,24

Table 3. Spearman's Rho for age and information processing and motor speed, visual attention, visual short-term memory, visual working memory, information processing speed, working memory, inhibition variables

	Spearman's rho	p	Lower 95% CI	Upper 95% CI
Information processing and motor speed	–0.69***	< .001	–0.76	–0.59
Visual attention	0.06	0.42	–0.09	0.22
Visual short-term memory	0.43***	< .001	0.28	0.55
Visual working memory	0.43***	< .001	0.29	0.55
Information processing speed	–0.51***	< .001	–0.62	–0.38
Working memory, inhibition, selective attention	0.26***	< .001	0.11	0.40
Inhibition control	–0.04	0.65	–0.19	0.12
Inhibition control	–0.06	0.49	–0.22	0.11
Selective, sustained attention	0.01	0.94	–0.16	0.17

Note: ***$p < .001$

Table 4. Between-subjects tests for information processing and motor speed, visual short term memory, visual working memory, information processing speed and working memory, inhibition and selective attention variables and age as a covariate

Variable		F	df	$w2$
Information processing and motor speed	groups	3.101	2	.03
	age	36.134***	1	.36
Visual short-term memory	groups	0.77	2	.00
	age	8.38*	1	.08
Visual working memory	groups	0.18	2	.00
	age	6.16*	1	.05
Information processing speed	groups	0.71	2	.00
	age	12.089**	1	.52
Working memory, inhibition, selective attention	groups	4.23*	2	.06
	age	6.51*	1	.05

Note: *$p < .05$; **$p < .01$, ***$p < .001$

As can be seen from Table 3, significant between group differences were observed only for the working memory, inhibition and selective attention (F (2, 93) = 4.23, $p < .05$, $w^2 = .06$), however effect size is small. For the rest of the variables, no significant between group differences were found. When controlling for age, the model seems to explain all five of the variables: Information processing and motor speed (F(1, 93) = 36.13, $p < .001$, $w^2 = .36$), visual short-term memory (F(1, 93) = 8,38, $p < 0.05$, $\omega^2 = 0,08$), visual working memory (F(1, 93) = 6,16, $p = 0,015$, $w^2 = 0,05$), information processing speed (F(1, 93) = 12,09, $p = .001$, $w^2 = .11$) and working memory, inhibition, selective attention (F(1, 93) = 6.51, $p < .05$, $w^2 = 0.05$. The biggest effect size can be observed for information processing and motor speed ($\omega^2 = .36$) and working memory, information processing speed ($\omega^2 = .52$)

Cognitive profiles

Cognitive profiles of all participants across groups were created based on an example by Fried and Nesse (2015). First, seven cognitive domains were defined and all the participants' test scores evaluated. For the basis of evaluation percentiles were used with cut-off points on 14th and 86th percentile. If an individual score in one of the cognitive domains was higher than 86th or lower than 14th percentile, depending on how the variable is scored, it was marked as a high presence of dysfunction. The result of

this analysis can be seen below in Table 5 where all the found variations of cognitive profiles are presented. Lowercase letter indicates non-existent dysfunction in a particular cognitive domain, while the uppercase letter indicates dysfunction found in one of the cognitive domains. Cognitive domains used and their assignment to letters can be seen in Table 1.

Table 5.   Frequencies of cognitive ability profiles for ADHD, combined ADHD and epilepsy and control group.

Cognitive ability profiles	ADHD group	Control group	ADHD and Epilepsy group
abcdefghi	18	13	5
abcdefghI	4		1
abcdefgHi	3	1	
abcdefGhi	3	1	
abcdEfghi	3	1	
aBcDefghi	2		
AbCDefghi	2		
abcdefgHI	1		
abcdeFGhi	1		
abcdEfghI	1		
abcdEFGhi	1		1
abcDefGhi		1	
abcDefGHi	1		
abCdefghi		2	
abCdefgHi	1	1	
abCdefGhi		1	
abCdefghI		1	
abCdeFGHI	1		
abCDefghi	1		1
abCDEfgHi			1
aBcdefghi	1	2	
aBCdefghi		1	
aBcdefghI		2	
aBcdefGhi		1	
aBcdefgHi	1		
aBcdefgHI	1		
aBcDefgHI		1	
aBcdeFGhi	1		
aBcdeFGHi	1		
AbcDefghi		1	

Continued from previous page

Cognitive ability profiles	ADHD group	Control group	ADHD and Epilepsy group
Abcdefghi	1	1	
ABcdEfghi		1	
ABcdEfGhi			1
AbcdEFghi			1
AbCdEFghi	1		
AbCDEfGhi			1
AbcDEfghi		1	
AbCDeFGHi	1		

Results show a wide range of heterogeneity in all 3 groups. There were 23 unique cognitive ability profiles (out of 512 possible profile combinations) in the ADHD group. In Figure 1 can be seen the frequencies of cognitive ability impairment in all three groups. The most common is the cognitive ability profile without pronounced cognitive impairment – 18 children, which make up 35% of the sample, 15 children (30%) have only one low cognitive ability, 8 children (16%) have 2 low scores, 6 children (12%) 3 low scores, 2 children (4%) 4 low scores. Only one child has 5 low cognitive abilities and one child has 6 low cognitive abilities. Apart from the profile without cognitive impairment, only 6 other combinations of profiles are repeated among several children, and 4 of these were with only 1 lower cognitive ability. The other 16 cognitive ability profiles, which account for 32% of all ADHD sample profiles, are unique, with different combinations of cognitive ability indicators for each child.
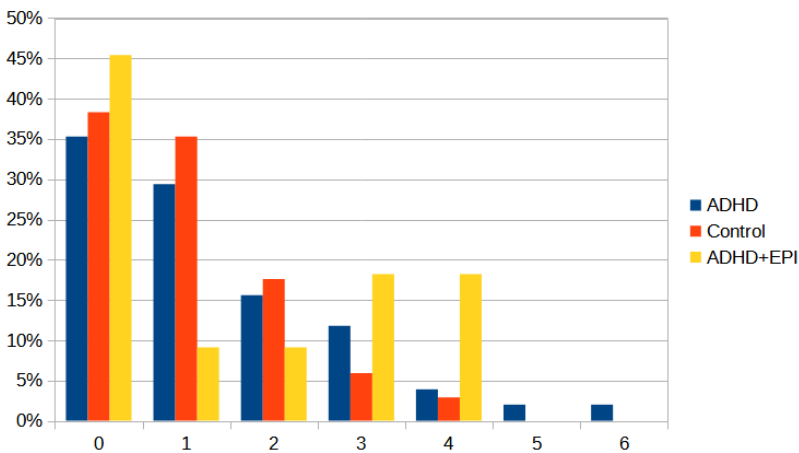
Figure 1. Frequencies of cognitive ability impairment in ADHD, combined ADHD and epilepsy and control groups

Looking at the ADHD and Epilepsy group with the lowest numbers ($n = 12$), 5 children (42%) have profiles without cognitive impairment, 1 child has a low score, just as 1 child has two low scores, two children there are 3 and two have 4 low scores and one child has 5 low scores. Low rates of information processing speed (E-5 profiles, A-3 profiles) as well as three profiles combining short-term and low working memory rates are more common.

Eighteen different cognitive ability profiles were found in control group, the most common was without cognitive difficulties – 13 children or 39% of the sample, 8 children (23%) have only one low cognitive ability, 9 children (26%) have 2 low scores, 2 children (5.8%) have 3 low cognitive abilities and one child has 4 low cognitive abilities.

Looking at cognitive ability profiles for all three groups, it can be observed that apart from the profile without cognitive impairment, which is the most common in all groups, no other profile recur in all groups. The ADHD and control group have 6 common profiles and the ADHD and the ADHD and Epilepsy group have 3 common profiles.

Discussion

ADHD is the most commonly diagnosed mental health disorder in children and adolescents (Willcutt, 2012). The clinical profile for children with ADHD has some overlap with epilepsy (Wang et al., 2020) which makes it even more critical to spot the differences when making the diagnoses. Given the gradual shift in psychology towards a more online-based approach, developing new methods to assess cognition and other psychological functions is crutial.

Thus, the aim of this study was to explore the differences in cognitive abilities among children groups diagnosed with ADHD, epilepsy and ADHD compared to the control group sample. The study found no differences when comparing the three groups when controlling for age thus confirming the initial hypothesis that variance in cognitive abilities between clinical groups would be non-existent or very small. Age was found to be an important predictor of cognitive function across ADHD/epilepsy group and control group.

Previous studies have shown that children with ADHD (Nigg et al., 2005; Willcutt et al., 2005) and epilepsy (Yuan, Li & Zhong, 2015) present overall lower cognitive abilities that together make a pattern specific to ADHD and epilepsy diagnosis. Such cognitive patterns should also be observed via psychological assessment across the clinical subgroups. This study also explored the cognitive ability profiles of the current sample that showed rather varied cognitive apabilities among children. It was rare that more than a few

of them had the same cognitive ability difficulties or even remotely similar ones. Moreover, even control group had shown drawbacks in few cognitive abilities indicating that profiles of cognition in children should not be generalized. Authors of this study suggest that heterogeneity of cognitive abilities that can been seen in analysis of children profiles accounts for the findings of no statisticaly significant differences in cognitive abilities among groups. Further research into these profiles, their correlation with age and other variables should be conducted as it would shed a new light into diagnosis and treatment of ADHD. Clinical profile heterogeneity signifies that ADHD is rather a complex disorder with potential link to core neuropsychological impairments (Luo et al. 2019). Individualistic approach in ADHD / epilepsy psychological assessment, specifically when conducting further research is necessary (Rosales et al., 2015; Karalunas, & Nigg, 2020).

Limitations and future research directions

The small number of participants, especially in clinical samples prevents generalizing the results to the clinical population as a whole. While response from people was rather big, attracting clinical samples was found to be an issue. Since participation was on a voluntary basis, this may not have been enough motivation in itself for parents whose kids were diagnosed with ADHD to enroll in the study.

Covid-19 pandemic safety measures that were enforced during the process of conducting the testing played a huge role in how to conduct data collection. Since the initial plan of conducting the testing offline was no longer possible, an alternative was found in online testing. To ensure the same experimental procedure, carefully designed guidelines were created to guide parents through the process of the experiment and, although thorough and as clear as possible, these guidelines could never substitute a real researcher conducting an testing. This could have been one of the biggest implications as the process was almost entirely in the hands of parents and their offsprings.

One of the biggest strengths of this study is collaboration with Children's Clinical University Hospital and therefore involvement of participants with epilepsy and ADHD. The most important contribution of the study was the development of cognitive profiles (Skara, 2022), which clearly shows the heterogeneity of symptoms in clinical and neurotypical children samples.

While remote assessment comes with a lot of obstacles and drawbacks, it can be argued that it provides a much safer and familiar environment for children to do the testing.

Conclusions

Findings show that there were no statistically significant differences among groups in cognitive abilities when controlling for age. It was observed that the results among participants within each group were rather varied thus leading to assume that the cognitive abilities were found to be heterogeneous. This lends to a growing number of literature suggesting a shift to a more individualistic approach in clinical assessment for ADHD and epilepsy. To observe more meaningful findings, the research should be conducted in a larger sample size.

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POLITICAL TRUST, ATTITUDES, AND BEHAVIOUR IN POPULATION AND POLITICIAN SAMPLES FROM LATVIA

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ABSTRACT

This study examines differences between the general population and politicians in overall political trust, previous and planned behaviour in line with COVID-19 restrictions, the importance of considering budget limitations, the industry needs, and the desirability of the solution when spending state budget funds. We compared answers from a population-representative sample (N=1000) with a sample of active political actors (N = 100) in Latvia. The results showed that, in the case of political trust, political actors have significantly higher reported trust in the public administration and government during the COVID-19 pandemic, higher levels of overall trust in people, and substantially lower reported political cynicism – distrust in political actors' intentions for participating in politics. There were no differences between both samples when asked about the past behaviour regarding COVID-19 restrictions; however, political actors reported significantly higher commitment to comply with the restrictions in the future. There were no differences between the groups when asked to rank factors that need to be considered when the state's budget is used to solve acute problems – participants from both general population and political actor samples placed budget limitations at the top, followed by the desirability of the solution to the problem, with industry needs put at the bottom of the three-item list. The expected impact of construal level based on the distance to political decision-making thus was not observed in the results. These findings provide additional insight into differences between the general population and politicians in the context of political trust and cynicism, past and future behaviour, and consideration of factors when public funds are needed to solve an acute issue.

Keywords: *compliance with restrictions, construal level, political cynicism, political trust*

Introduction

Political trust influences a relatively wide range of individual and public behaviour, decision making, and opinions has been well documented in research (Rudolph, 2017; Rudolph & Popp, 2009). And while one might assume that those involved in a democratic political system might also be

more trusting towards politics in general, direct comparison of public and political actors' attitudes and, more specifically, behaviour and decision-making when it comes to rather complicated topics have lacked attention. While public discourse has shown that political trust is often associated with socially responsible behaviour and the lack of it endangers such actions, the perception of needed steps to overcome topical issues has been accentuated as a polarising issue. In the current study, our focus is on the perception of these factors between people from public vs active political actors. More specifically – whether involvement in politics promotes general political trust, lowers political cynicism, indicates a higher level of compliance with restrictions during COVID-19 pandemic and to what extend does these groups differ in perception of the balance of feasibility and desirability in political decision-making.

Political trust

Political trust has been a central topic in political science and political psychology for many years (Braithwaite & Levi, 2003). Political trust has been defined as "a summary judgment that the [political] system is respon-sive and will do what is right even in the absence of constant scrutiny" (Miller & Listhaug, 1990). Political trust is considered a need for demo-cratic rule; therefore decline in it is believed to fundamentally question the quality of representative democracy (van der Meer, 2017). Moreover, political trust has been emphasised as one of the most critical aspects in democracies nowadays; in the context of the global pandemic and pop-ulistic notions in media about public safety, political trust is crucial to achieving public safety (Woelfert & Kunst, 2020). While there is plenty of research on political trust from the public perspective, few have managed to compare the public perspective with the point of view of political actors. For example, in the UK, studies show that politicians emphasise integrity as an essential trait for politicians; however, journalists are more focused on competency while public representatives emphasise the authenticity of political actors (Valgarðsson, Clarke, Jennings & Stoker, 2020).

Also, mere participation in organisations can be influential and promote political trust, even if the organisation itself is not democratic (Fennema & Tillie, 1999). Political trust also is positively related to institutionalised involvement (Hooghe & Marien, 2013). Therefore, a better understanding of how political trust influences individuals at a time of need and what differences may engagement in political processes cause to individuals' perspectives on the political system is critical to ensuring longevity for democracy in jeopardy. This theoretical background leads to our first prediction that political trust will be higher in the sample of active political actors compared to national sample participants.

Feasibility and desirability concerns in political decision-making

The need to balance feasibility and desirability concerns in political decision-making is complicated by the fact that desirable end-states are often represented in human perception at a higher-level construal (focusing on more abstract attributes), whereas the feasibility of attaining these end-states is represented at a lower level of construal (focusing on more concrete details) (Liberman & Trope, 1998; Trope & Liberman, 2010). The effect of temporal distance on attitudes toward a policy is mediated by people's attention to different aspects of the policy (desirability vs feasibility, pros vs cons, self vs other) (Nakashima, Daniels & Laurin, 2017). It, therefore, could vary based on the distance of the one to the decision-making process.

Specifically, to COVID-19 restrictions, research has shown that the length of the imposed restrictions matters more to the public than their intensity (Gollwitzer, Platzer, Zwarg & Göritz, 2020). In their decision-making, we hypothesise that politicians are relatively more concerned with feasibility than ordinary voters, who focus more on the desirability aspects of problems and solutions. This may lead to reduced levels of political trust when the public perceives the politicians as unwilling or incapable of delivering solutions that voters deem necessary. Therefore, a direct comparison of perspectives on the same issue from a sample of politicians and a sample of the general public would shed some light on whether construal level can be seen as an explanation for reduced political trust in challenging times.

Political cynicism in general public and politicians

Political cynicism, represented as a negative stereotype about political actors or political systems, becomes the self-maintaining base for motivated reasoning to seek out and interpret information to confirm their initial attitude (Kunda, 1990; Taber et al., 2009; Taber & Lodge, 2006). It has been shown that individuals scoring high in political cynicism are more likely to interpret ambiguous information negatively. It reflects political actors involved negatively (Dancey, 2012) so that it would confirm the initial cynical attitudes and ultimately reduce political trust.

However, as political cynicism is an attitude about social outgroup (political actors), levels of cynicism intuitively should fall for those involved in the politics. However, some researchers point to a different pattern, e. g., political involvement is positively associated with political cynicism as cynical citizens can be prone to be politically involved (Mou, Miller, Jalette, 2011). Therefore, the comparison of political cynicism in public and political actor samples seems fluid and might be influenced by involvement and other factors.

Role of political trust in compliance with restrictions during COVID-19 pandemic

Numerous empirical studies have shown that political trust forecasts multiple desirable public behaviours such as paying taxes (Alm & Torgler, 2006) or participating in joint restraint in case of social dilemmas (Tyler & Degoey, 1995). Political trust also relates to willingness to support civil liberties (Davis & Silver, 2004); however; it has also been found that a lack of such trust promotes populist voting behaviour (Hetherington, 1999), which in the context of a pandemic might lead towards both lack of trust in government as well as reduced compliance with restrictions set in place by such distrusted entity. Further on, one may assume that higher levels of political trust might help with decisions on specific behaviour, leading to desirable outcomes (Rudolph, 2017; Rudolph & Popp, 2009). More specifically, during the COVID-19 pandemic, political trust and trust in government would convey a willingness to comply with restrictions set in place by the government.

As an extension of our first prediction, those with higher political trust than those with lower results should indicate higher compliance with restrictions in the past and future. However, this does not mean that over-all political trust also propels trust in government, especially in the time of the pandemic, as the government is a more specific entity than public administration. Therefore, our last prediction is that while there might not be significant differences between the national sample and political actor sample in regards to trust in government during the COVID-19 pandemic, political actors should have higher scores in political trust in public administration and lower scores in political cynicism, they also should indicate higher overall intent to comply with restrictions, which are set in place by the government.

Methodology

Sample

A nationally representative sample of Latvian adults were surveyed via face-to-face computer-assisted interviews in August 2021 ($N = 1000$; 55.2% women and 44.8% men; with the following age distribution: 18–24 years – 9.7%, 25–34 years – 17.8%, 35–44 years – 18.7%, 45–54 years – 19.6%, 55–64 years – 19.2%, and 65–74 years – 15.0%). In addition, a sample of active political actors ($N = 100$) in Latvia was also where surveyed. Sample consists of individuals actively involved in politics (e. g. elected state officials, deputies of the Saeima, officials of political parties). At least half of the sample participants represent the political parties elected in the 13th Saeima.

Materials and Procedure

Professional interviewers surveyed the respondents from a nationally representative sample from a market research company at their places of residence. The participants were selected using a stratified random sampling method (random route procedure). Respondents from the sample of active political actors were surveyed by phone. Participation in this study was voluntary and without any remuneration.

Participants received the same questionnaire composed of the following measures in both samples. First, participants were asked about their general trust in public administration. They were presented with the statement "To what extent do you generally trust or do not trust the Latvian public administration system as a whole?" and asked to rate their trust level on a 10-point scale ranging from "do not trust at all" (1) to "trust completely" (10). Next, participants answered questions about their general trust in people, where they were asked, "Overall, do you think that most people can be trusted, whether or not they have proven their trustworthiness?" and the participants indicated their responses on a 7-point Likert scale ranging from "completely disagree" (1) to "completely agree" (7).

To measure the participant's level of political cynicism, we used an index that was composed of the answers to 3 questions ($\alpha = .75$) "Latvian politicians engage in politics mainly driven by personal interests", "Latvian politicians engage in politics, mainly to pursue the interests of certain groups that may not coincide with the interests of society as a whole" and "Latvian politicians get involved in politics, thinking mainly about the public interest" (reverse-scored). The participants indicated their responses on a 7-point Likert scale ranging from "completely disagree" (1) to "completely agree" (7).

Next, the participants were asked to indicate their trust in the government during the COVID-19 pandemic by answering to question, "To what extent do you currently trust or distrust the government during the COVID-19 pandemic?". In addition, questions about compliance with COVID-19 restrictions in the past and future: "To what extent have you complied with government restrictions during the COVID-19 pandemic over the past year?", "If the epidemiological situation in COVID-19 deteriorates, to what extent will you comply with government restrictions?". The participants indicated their responses to all three questions on a 7-point Likert scale ranging from "completely disagree" (1) to "completely agree" (7).

Lastly, participants were asked: "When using the state budget funds to solve topical problems, it is necessary to consider several things, which I will mention to you immediately. Please rank these things in order of importance: Budget limitations; Industry needs; Desirability of solution."

In addition to all measures, we asked the participants to indicate their age and gender for demographic data.

Results

To test our predictions, we first conducted nine one-way ANOVAs. Within each analysis, responses of participants who did not answer questions or answered as "hard to say" have been eliminated. In the first prediction, we considered that general trust in public administration would be higher in the case of active political actors sample than in a representative population sample. Our analysis showed that in the case of the general trust in public administration, there was a significant difference between groups, $F(1, 1069) = 68.16$, $p = .000$, reflecting a pattern that in the political actor's sample ($M = 6.51$; $SD = 1.71$) to a larger extent than in the representative sample group ($M = 4.61$; $SD = 2.24$) the participants where more trusting towards public administration, therefore confirming our first prediction. Please see Table 1 for illustration.

In the second prediction, we considered a similar pattern regarding general trust in people. Such general trust in people will be higher in the case of active political actors sample than in a representative population sample. Analysis showed that in the case of the general trust in people, there were significant, jet smaller differences between groups than in the case of general trust in public administration, $F(1, 1054) = 6.84$, $p = .009$. In the political actor's sample ($M = 4.32$; $SD = 1.33$) to a more significant extent than in the representative sample group ($M = 3.86$; $SD = 1.71$), the participants were more trusting of people, confirming our second prediction. Please see Table 1 for illustration.

In the third prediction, we considered the opposite pattern to appear regarding political cynicism. Political cynicism will be lower in the case of active political actors' sample than in a representative population sample. Our analysis showed that, indeed, there was a significant difference between groups, $F(1, 1024) = 71.04$, $p = .000$, reflecting the pattern that the political actor's sample ($M = 4.19$; $SD = 1.31$) to a significantly smaller extent than representative sample group ($M = 5.44$; $SD = 1.42$) consider political actors motivation to be cynical. Please see Table 1 for illustration.

As for attitudes and behaviour regarding the COVID-19 pandemic, we predicted that trust in government and past and future behaviour would significantly differ between the groups. We predicted that the political actor sample would score higher in all variables. Therefore, political actors would trust the government and indicate more compliant behaviour regarding restrictions both in the past and future if the situation worsens. These predictions were supported by the responses from participants, wherein in case of trust towards government $F(1, 1098) = 9.22$, $p = .008$ and when regarding future behaviour $F(1, 1001) = 8.85$, $p = .003$ the diference was statisticaly significant. However in case of past behaviour, the diference

between the groups was not statisticaly significant $F(1, 1093) = 2.71$, $p = .100$. Please see Table 1 for illustration.

Table 1. Means, Standard Deviations, and One-Way Analyses of Variance of Trust in Public Administration, Trust in People, Political Cynicism, Trust in Government During COVID-19 Pandemic and Behaviour Regarding COVID-19 Pandemic

Measure	Population		Politician		F	η2
	M	*SD*	*M*	*SD*		
Trust in public administration	4.61	2.24	6.51	1.71	68.16***	.060
General trust in people	3.86	1.71	4.32	1.33	6.84*	.006
Political cynicism	5.44	1.42	4.19	1.31	71.04***	.065
Trust in government during COVID-19	3.44	1.82	4.01	1.62	9.22*	.008
Behaviour regarding the COVID-19						
In the past	5.83	1.43	6.07	0.95	2.71	.002
In the future	5.43	1.81	5.98	1.16	8.85*	.009

$^*p < .05.$ $^{***}p < .001.$

Error Bars: 95% CI
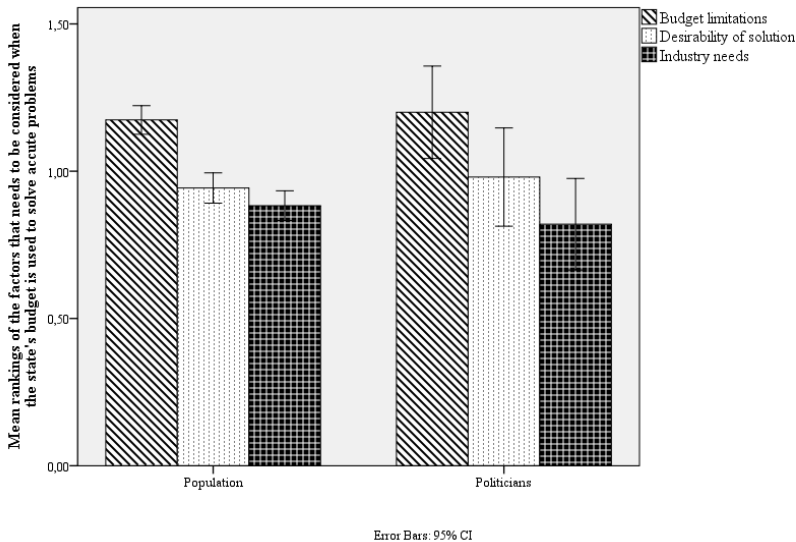
Figure 1. Comparison of Population and Politician Sample on Mean Rankings of the Factors that Needs to be Considered when the State's Budget is Used to Solve Acute Problems

Lastly, we asked to rank "Budget limitations", "Industry needs", and "Desirability of the solution" in order of importance when using the state budget funds to solve topical problems. We asked to rank these factors in sequence of important after reading the following passage: "When using the state budget funds to solve topical problems, it is necessary to consider several things, which I will mention to you immediately. Please rank these things in order of importance." We predicted that laypeople from the representative sample would put a higher importance on the desirability of the solution. In contrast, the political actor sample would prioritise budgetary limitations, showing significant differences between the groups. The results however show, that there where no differences between the groups when ranking these options: both samples have put budget limitations as first $F(1, 1098) = .10$, $p = .752$, followed by desirability of solution $F(1, 1098) = .55$, $p = .457$ and industry needs as third $F(1, 1098) = .181$, $p = .760$. Therefore, our prediction regarding construal level in assessment actions needed to be made in hush times is not confirmed. Please see Figure 1 for an illustration.

Discussion

Most of our predictions on how national sample results will differ from political actor sample results regarding trust, cynicism and behaviour during the pandemic have been supported. Political actors have significantly higher reported trust in the public administration and government during the COVID-19 pandemic, higher overall trust in people, and substantially lower reported political cynicism – distrust in political actors' intentions for participating in politics. Moreover, political actors reported significantly higher commitment to comply with the possible restrictions in the future. These findings are in line with the previous research, where political trust has been highlighted as one aspect that is crucial to achieving public safety (Woelfert & Kunst, 2020). Further on, the results also support that involvement in politics promotes political trust (Hooghe & Marien, 2013) and reduces political cynicism, which contrasts with the notion of Mou and colleagues (Mou, Miller, Jalette, 2011).

While supported assumptions seem to provide rather intuitively foreseen results, the results that were not supported give insight into how public and political actors are alike. Firstly, there were no differences between both samples when asked about the past behaviour regarding COVID-19 restrictions. Also, there were no differences between the groups when asked to rank factors that need to be considered when the state's budget is used to solve acute problems. These results contrast with the classic view of construal level theory, according to which temporal distance on attitudes

toward a policy should have been mediated by attention to different policy aspects (desirability vs feasibility, pros vs cons, self vs other) (Nakashima, Daniels & Laurin, 2017).

Herbert McClosky (1964) have stressed that those who are politically active and aware share greater agreement on democratic norms than the public. Despite the negative stereotypes about politicians in Latvian society, participants from the politician sample demonstrate a tendency to adhere to the normatively correct attitudes and behaviours rarely associated with this group in the public perception. Though different in some behavioural aspects, the agreement on essential decisions should be emphasised. It can be explained by research that shows political scientists to exaggerate the scale of gaps in decision-making and political attitudes between public and political actors alike (Kertzer, 2020). While to some extent politicians are not like the rest of us, it seems that this might be due to their virtues rather than sins.

Conclusions

Public discourse that the politicians are very different from the laypeople draws a wedge between these groups and in trust towards political administration and governments. In Latvian politics, political cynicism also has been noted as one of the most divisive issues. And to some level, our research supports these notions. However, our findings should be set in the current light to provide a way out rather than entrenching in the mud of distrust and providing bullets for populists. First – it seems that pure involvement in politics, even if it's not at the very top of the political stage, provides insight into processes and might promote trust in political administration and people. Furthermore, involvement might reduce cynicism and might promote intent to comply with policies to safeguard public safety. These findings emphasise the importance of action-based democracy, where individuals actively participate in political processes.

Secondly, it is important to note that there were remarkable similarities between the responses of laypeople and politicians about the way serious decisions must be made. Even though it is thought that laypeople would much rather have quick solutions for "any" price, compared to politicians who focus on the viability of it, our results show quite the opposite. Therefore, politicians should not be afraid to communicate the reasons behind even the most critical of the decision made, as there might be surprising support from the public. And in return, it might provide the necessary nurture for trust to grow.

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CONFIRMATION BIAS, ANALYTICAL THINKING, AND EMOTIONAL INTENSITY IN EVALUATING NEWS HEADLINES ONLINE

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ABSTRACT

This study examines the role of prior beliefs, analytic thinking, and emotional intensity of content in believing that information is truthful or not. Participants (N = 169 Facebook users) were presented with a series of news headlines previously categorised into three specific subgroups – for or against vaccination, true or false, and high or low in emotional intensity. Each participant first answered questions about their attitude and behaviour towards vaccination against COVID-19 based on the theory of planned behaviour (TPB) and filled out a cognitive reflection test (CRT), a measure of analytic thinking, followed by an evaluation of each headline on whether it is truthful or not. The results showed strong evidence of overall confirmation bias in the group that supports vaccination; however, when considering whether the headline is real or false, the most significant differences between the groups were found in the case of trust in fake headlines against vaccination – those against vaccination to a larger extend believed in false headlines confirming their prior beliefs. In contrast, such differences between the groups in case of false headlines supporting vaccination were weak. Further analysis showed that analytic thinking described by the CRT score had a weak yet statistically significant tendency to promote one's ability to distinguish real from false information. The intensity of headlines had the most significant differences when evaluating real news headlines supporting vaccination with low emotional intensity and false news headlines against vaccination with low emotional intensity. Overall, these findings provide additional insight into the complex nature of information evaluation online and the critical role of one's prior beliefs and emotional components of the content.

Keywords: *analytic thinking, confirmation bias, emotional intensity, misinformation, disinformation*

Introduction

Social networks and online media have become one of the primary global sources of information. They contain daily information, opinions and other information often found and perceived by individuals. Available information could provide an objective point of view – it is possible to

gain broad and comprehensive information in just a few seconds. However, there is often questionable information: stories and opinions of individual experiences unintentionally misleading (misinformation) or even blatantly false information, such as conspiracy theories, pseudo-scientific statements, content created for phishing user data, and knowingly misleading news (disinformation). Understanding how individuals perceive, react, and involve themselves in information flow, is crucial to understanding the underpinning factors involved in this process: biases, emotions, and individual thinking styles one uses when perceiving information online.

Analytic thinking

When it comes to confronting natural tendencies in how individuals perceive information, media literacy and critical thinking are the solutions that come to mind to many. However, it also has its ups and downs. Critical thinking provides individuals with the skills needed to critically evaluate available information, for example, by seeking evidence to support someone's claims and assessing the reliability of the reasoning. In the studies on media literacy, critical thinking is an essential skill for identifying false messages (Machete & Turpin, 2020). Critical thinking covers a broad spectrum of skills that includes verbal judgment skills, argument analysis, hypothesis testing, and the ability to embrace uncertainty, decision-making, and problem-solving. Many studies on the perception of false messages stress that examining and judging information (critical thinking) is vital for identifying false messages. In other words, it is crucial to think deliberately rather than intuitively. In one of the studies (Pennycook & Rand, 2019), researchers, using the cognitive reflection test as an indicator of analytical thinking that is deliberative and would suggest usage of some critical thinking skills, conclude that high cognitive reflection indicators correlate negatively with the perceived accuracy of false messages and correlate positively with the ability to distinguish false messages from trustworthy ones.

In another study (Bago, Rand & Pennycook, 2020), the authors stress that the results point to the fact that fast and intuitive information processing contributes to belief in false content. The "success" of inaccurate content on social media may be related to the tendency of users to scroll through the news stream quickly without going into details about the information. Although the results of these studies are contrary to the approach of confirmation bias, it is essential to distinguish between the fact that, in this case, the authors only look at the ability of respondents to distinguish factually accurate information from false and might indicate the specific nature of superficial processing of information in the context of news content, not user-created content. Even though someone analyses the content

in detail and varies with the source of information, people's initial opinion might play a more critical role and, therefore – essential activation of critical thinking.

Critical thinking (assuming that its use and meaning are perfectly understood and not selective) could significantly help an individual perceive and evaluate information when assessing the information superficially and when going into details, regardless of the original individual's perspective or opinion. Machete and Turpin (Machete & Turpin, 2020), in their review of the role of critical thinking in disinformation recognition, highlight the general inability of people to identify disinformation. Media literacy and critical thinking are essential skills to prevent exposure to misleading online information; however, it is not enough with the willingness to think critically – one needs to utilize the skills in reality. Machete and Turpin also stress that, given the limited number of studies on critical thinking in identifying false messages, it is crucial to continue research to clarify the role of critical thinking and training in the perception of mundane information. Therefore, the first (H1) prediction is as follows: people scoring higher in analytical thinking will evaluate truthfulness of news headlines significantly more accurately.

Confirmation bias

Confirmation bias is one of the weak spots in the perception of information. Confirmation bias is an individual's natural tendency to seek, interpret, prefer, and remember information consistent with the original view, attitude, or hypothesis (Hastie, 2014). Confirmation bias encourages individuals to choose the information consistent with their existing opinion. It can quickly address individuals through ideas that are acceptable and effortlessly perceived (Ciampaglia & Menczer, 2018) by using it in dishonest and misleading ways. They can include ideological extremism, threaten public safety and lead to conflicts, although such development would be impossible without the influence of malicious actors.

In 1969, Miller mentioned that we desperately need tools to prevent conflicts and make them not become a source of public confrontation from which finding a sensible exit is impossible. This notion has gained significance in recent years, as individuals live in an "information bubble" that they like and, sometimes, do not understand why they tend to defend their positions so fiercely. It is partly the responsibility of the media, social networks, and other sources, which, under the pretext of the interests of consumers, offer the individuals (users) precisely the information they have shown interest about in the past. It often can help users not to become lost in the vast realms of information. However, there are cases where such information can be misused, and studies on the possibility of fighting

extreme confirmation bias should be among the most critical priorities of psychology (Lilienfeld, Ammirati & Landfield, 2009).

The prevention of disinformation is closely linked to confirmation bias studies since the most significant risk is further strengthening individuals' initial views, one-sided, and sometimes false information. Although there are many strategies to overcome confirmation bias, their effectiveness is often minimal. For example, Lewandowski looks at the withdrawal of information, alerts before the perception of information, and availability of alternative information (Lewandowsky et al., 2012). Other authors consider disconfirming recommendations as a solution and constructs of a trust/distrust mindset (Schul, Mayo & Burnstein, 2004; Schwind et al., 2012); however, they all fail to address the underlying mechanisms of perception, thinking styles, emotions, and situational factors.

In summary, confirmation bias encourages individuals to choose and interpret the information consistent with their existing opinion, which would constitute the interpretation of information consistent with prior attitudes as truthful versus information that postulates opposing views. Therefore, our second prediction is (H2): headlines will be rated as significantly more truthful if the information is congruent with one's prior beliefs.

Emotional intensity

Another bias closely related to promoted and unconscious engagement in misinformation flow is negativity bias – the fact that something positive will usually have less of an effect on an individual's behavior and perception than something equally emotional but negative (Baumeister, Bratslavsky, Finkenauer & Vohs, 2001). The latest research suggests that negativity is strongly related to extremity and attitude polarisation in the political domain (Buder, Rabl, Feiks, Badermann & Zurstiege, 2021). Overall, adverse reactions, emotions and negative stereotypes are quicker to develop and more resilient to disconfirming than positive ones, and barely any exceptions suggesting superior strength of good can be discovered. These findings imply that negative is more potent than positive, which is also true in the perception of online content.

Martel, Pennycook & Rand have noted that disinformation authors tend to use very emotional content that is processed quickly and superficially and can cause additional difficulty distinguishing it from the truth (Martel, Pennycook & Rand, 2020). Moreover, negative emotions, such as anger, fear and disgust, can foster rapid yet superficial engagement. The authors stress that relying on emotion increases confidence in disinformation to an extent where higher reported emotionality was positively associated with disinformation belief and higher cognitive reflection scores. These results

point to the role of emotional information and its perception in susceptibility to misinformation. Karina Val-Jorgensen notes that even professional and successful journalists, despite their commitment to objectivity, use emotional content to create their own stories (Wahl-Jorgensen, 2013). Therefore, subjective feelings appear to be an essential factor in the perception of information.

Emotional intensity is also an essential component for cognitive dissonance to arise. In the selective-exposure paradigm (Mills, 1999), it is noted that people will attend more to information that underpins their pre-existing beliefs, and they will try to avoid conflicting information to prevent potential negative outcomes or, in other words, – cognitive dissonance. People might use different strategies to escape the cognitive dissonance in a selective exposure situation with low versus high-intensity stimuli. For instance, in case if information comes in low intensity, people might rather reappraise than distract themselves from it (Sheppes, 2014). However, in the case of high intensity, the opposite pattern could emerge. Within this study, participants will be exposed to both congruent and discongurant information; we expect to see a pattern, where when high intensity discongurant information is presented, one will commit more to salvage one's prior beliefs by discounting it as false. Hence our final prediction is: (H3) Discongurent headlines high in emotional intensity will be rated as less truthful than those low in emotional intensity and vice versa for congruent headlines – headlines high in emotional intensity will be rated as more truthful than those low in emotional intensity.

Summary and study overview

In summary, the amount of information online is growing daily, and almost everyone must face varying quality content daily. When an individual perceives this content, he can be influenced by various factors: biases, initial attitudes, and emotions at the individual level, and content-specific factors such as source and emotional saturation. In superficial processing, studies so far can provide evidence that more careful, critical thinking rather than rapid and intuitive information processing can help identify misleading content and reduce individuals' engagement in its spread. On the other hand, in perception and interpretation, initial opinion and motivated reasoning may impact incongruous denial of views opposing their strengthened attitudes and the justification of consistent opinions. Media literacy and critical thinking can help individuals make judgments by utilising critical thinking; however, the full use of these skills, the quality of training, and the individual's ability to transfer them to real-life play an important role.

We conducted an online quasi-experiment to understand how confirmation bias, analytical thinking, and emotional intensity of content influence

the evaluation of the truthfulness of news headlines online. According to the literature review, three predictions were proposed. Firstly, headlines will be rated as truthful significantly more if the information is congruent with one's prior beliefs. Secondly, discongurent headlines high in emotional intensity will be rated as less truthful than those low in emotional intensity and vice versa for congruent headlines – headlines high in emotional intensity will be rated as more truthful than those low in emotional intensity. Lastly, people scoring higher in analytical thinking will evaluate truthfulness of news headlines significantly more accurately.

Methodology

Sample

169 respondents (76.90% females, mean age = 38.11, *SD* = 10.03) participated in the survey. We used the QuestionPro platform to collect data in an online survey mode and distributed the survey on the social network "Facebook" to multiple public groups in March of 2021. Participation in this study was voluntary, anonymous and without any remuneration.

Materials and Procedure

First, participants were presented with an informed consent form to ensure participants had an understanding of this survey's main objective, ethical standpoints and anonymity of participation in the survey. After acknowledging informed consent, participants were asked basic demographic questions regarding their age, gender and education level.

Secondly, participants answered several questions about their attitude towards COVID-19 vaccination created according to Theory of Planned Behaviour (Ajzen, 1991) and raw scores where indexed as per authors suggestions. The questions covered attitude, subjective norm, and perceived behavioural control for the COVID-19 vaccination: "I believe that vaccination is an appropriate way to stop a COVID 19 pandemic", "I am familiar with information about COVID19 and the vaccination process", "My friends support vaccination against COVID19", "My family members support COVID19 vaccination" and "If in the next two days I would be offered to receive COVID19 at a convenient place and time, I would do so".

Next, a short version of the cognitive reflection test followed (Frederick, 2005). The test had three open-ended questions: "A bat and a ball cost EUR1.10 in total. The bat costs EUR1.00 more than the ball. How much does the ball cost?", "If it takes 5 machines 5 minutes to make 5 widgets, how long would it take 100 machines to make 100 widgets?" and "In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If

it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake?".

Finally, participants were asked to assess 24 news headlines whether they were "True" or "False". The stimuli for this part were created according to Penycock et A Practical Guide to Doing Behavioral Research on Fake News and Misinformation (Pennycook et al., 2021). As per suggestions from the mentioned article, the news headlines were presented as Facebook posts and pre-tested for emotional intensity and whether they were pro vs against vaccination. As per pre-test values, twelve of the headlines were real and 12 fake (as per fact-checking sources). Please see pictures 1 and 2 to illustrate pro vs against vaccination headlines.

Picture 1. Pro-vaccination Headline example

Picture 2. Against-vaccination Headline example

Results

Firstly, to test our prediction regarding the influence of analytical thinking of respondents on the ability to identify truthful articles from false correctly, we split respondents by their score in CRT into two groups consisting of 78 individuals scoring 0–1 points in the test (low scoring individuals) and 91 individuals scoring 2 or 3 points (high scoring individuals), respectively. A further analysis of variance revealed significant differences between these groups, $F(1, 167) = 11.64, p = .001$. Individuals in the high scoring group were able to a larger extent ($M = 16.81$; $SD = 2.49$) than those in the lower scoring group ($M = 15.58$; $SD = 2.17$) to correctly identify truthful headlines from false. Though the difference between the groups is relatively small, it supports our first prediction that the analytical thinking style helps evaluate news headlines.

Secondly, we predicted that when considering prior attitude towards vaccination, individuals will rate significantly more articles as truthful if they confirm their prior attitude, therefore indicating confirmation bias. We first calculated the average score on the TBP scale, buy creating index of the 5 questions about participants attitudes, social norms and behavioural control. Next, we created two clusters consisting of individuals pro-vaccination and against it to test this hypothesis. The cluster analysis showed a good fit of 2 clusters consisting of 109 (64.5%) individuals in the pro-vaccination group and 60 (35.5%) individuals in against vaccination group, with an average silhouette score of 0.8.

To test if confirmation bias influences the rating of articles as true, we calculated if individuals in the pro-vaccination group rated pro-vaccination headlines as more truthful than vice versa. The results showed that there were significant differences between the groups in the evaluation of both pro-vaccination headlines $F(1, 167) = 26.91, p = .001$ and even more significant in case of headlines against vaccination $F(1, 167) = 30.26, p = .001$. Paired sample t-test showed significant differences between believing that pro-vaccination headlines are true ($M = 7.08$; $SD = 1.50$) and headlines against vaccinations are false ($M = 3.79$; $SD = 1.61$) for participants in the pro-vaccination group; $t(108) = 15.21, p = 0.000$. However, in the case of the against-vaccination group, the differences between the mean scores of pro-vaccination headlines ($M = 5.60$; $SD = 2.04$) and against-vaccination headlines ($M = 5.50$; $SD = 2.43$) rated as true were not significantly different; $t(59) = .242, p = 0.810$. These results partially support our prediction that the prior attitude influences the evaluation of news headlines in attitude endorsing way. However, further analysis shows that this prediction is supported only in the case of pro-vaccination participants, jet not in those against vaccination. Please see Table 1 for illustration.

Table 1. Means, Standard Deviations, and Analyses of Variance of Stimuli Pro or Against Vaccination Rated as True

Stimuli type	Pro-vaccination cluster		Against vaccination cluster		F (1, 167)
	M	*SD*	*M*	*SD*	
Pro vaccination headlines	7.08	1.50	5.60	2.04	26.91***
Against vaccination headlines	3.79	1.61	5.50	2.43	30.26***

*$p < .05.$ ***$p < .001.$

We conducted additional analyses to examine further the influence of headlines' emotional intensity on its evaluation. Articles were grouped by their value of truthful vs false, pro vs against vaccination and highly emotionally intense vs low on emotional intensity – three articles in each subgroup. The results show statistically significant differences in the case of truthful headlines in both pro-vaccination headline groups with high emotional intensity $F(1, 167) = 11.85, p = .001.$ and with low emotional intensity $F(1, 167) = 21.26, p = .001.$ Individuals supporting vaccination to a larger extent than those against rated truthful headlines as being truthful than individuals in against-vaccination group. An opposite pattern also emerged when asked about truthful headlines with high emotional intensity and against vaccination $F(1, 167) = 15.25, p = .001;$ however, there were no differences between the groups when truthful articles against vaccination were low in emotional intensity $F(1, 167) = 1.12, p = .291.$

Furthermore, when analysing false headlines rated as true, in the case of pro-vaccination headlines, there were significant differences in case of emotionally intense stimuli $F(1, 167) = 7.84, p = .05,$ yet not significant in case of stimuli with low emotional intensity $F(1, 167) = 1.45, p = .231.$ Similarly to truthful headlines, the opposite pattern emerges in the case of false headlines against vaccination. There were significant differences in high emotional intensity stimuli rated as true $F(1, 167) = 9.09, p = .05.$ However, the most significant differences for false news headlines were in the case of low emotional intensity stimuli against vaccination rated as true $F(1, 167) = 39.09, p = .001.$ All together these results add evidence to our second hypothesis, and we can see that confirmation bias is strong in case of emotionally intense stimuli in all subgroups, however by far the largest difference between the groups is visible in case of false stimuli with low emotional intensity and against vaccination. Please see Table 2 for detailed results and mean scores.

Table 2. Means, Standard Deviations, and Analyses of Variance of Stimuli per Group Rated as True

Stimuli pretested value	Pro-vaccination cluster		Against vaccination cluster		F (1, 167)
	M	SD	M	SD	
Truthful headlines					
Pro, Emot. int. high	2.71	0.52	2.33	0.90	11.85***
Against, Emot. int. high	0.72	0.83	1.30	1.09	15.25***
Pro, Emot. int. low	2.50	0.69	1.92	0.93	21.26***
Against, Emot. int. low	1.75	0.68	1.86	0.65	1.12
False headlines					
Pro, Emot. int. high	0.77	0.72	0.47	0.60	7.84*
Against, Emot. int. high	1.16	0.70	1.53	0.91	9.09*
Pro, Emot. int. low	1.06	0.89	0.88	0.89	1.45
Against, Emot. int. low	0.17	0.42	0.80	0.90	39.09***

*$p < .05$. ***$p < .001$

Lastly, to understand how emotional intensity influences headline truthfulness evaluation, we conducted paired- samples t-tests for both pro-vaccination and against-vaccination individual subgroups separately. We predicted that discongruent headlines high in emotional intensity would be rated as less truthful than those low in emotional intensity and vice versa for congruent headlines. Results, however, did not support this hypothesis when testing differences between high versus low-intensity stimuli rated as true – in both congruent and discongurent cases differences between scores were not statistically significant. To understand these findings in more detail, we also conducted paired sample t-tests for each subgroup considering not only the intensity and congruity of headlines, but also whether they are truthful or false. These results showed that there are statistically significant differences in all content specific subgroup ratings. The pattern remained the same for both pro-vaccine individuals and against-vaccine individuals. Truthful pro-vaccination headlines high in emotional intensity were rated as more true by individuals from both pro-vaccination, $t(108) = 2.95, p = 0.004$, and against-vaccination, $t(59) = 3.08, p = 0.003$, group. Truthful against-vaccination headlines high in emotional intensity were rated as less true both by individuals form the pro-vaccination, $t(108) = –12.59, p = 0.000$, and against-vaccination, $t(59) = –4.19, p = 0.000$, group. False pro-vaccination headlines high in emotional intensity were rated as true less both from individuals pro-vaccination $t(108) = –2.73, p = 0.007$ as well as against $t(59) = –3.41, p = 0.001$. And false against-vaccination

headlines high in emotional intensity were rated as true more both from individuals pro-vaccination $t(108) = 12.94$, $p = 0.000$ as well as against $t(59) = 5.01$, $p = 0.000$. These results still did not support our hypothesis about differences in perception of stimuli based on the contents' congruity with one's opinion. However, they provide an exciting facet for further research, and support the basic notion – that the emotional intensity of the content proves influential in evaluating its truthfulness.

Discussion

In our theoretical framework, we set three distinct predictions about how respondents' prior attitudes, analytical thinking style, and emotional intensity of the evaluated news headlines would influence their rating of whether these articles were true. Firstly, we tested if individuals who scored higher in CRT, and were therefore relying more on analytical thinking than intuitive one, significantly better identified truthful headlines from false ones. Our results showed that there were significant differences in the final correctly identified headline score. This supported our first hypotheses and findings from previous studies on analytical thinking style (Pennycook & Rand, 2019). However, it is worth noting that the effect was relatively small and analytical thinking alone is not an overly significant predictor of one's ability to identify true headlines within this study's framework correctly. This might be because while individuals scored higher on CRT, it did not necessarily mean that they were think particularly more critically when evaluating the information presented to them, as they were not using these skills at that specific moment (Machete & Turpin, 2020). Overall, this supports the notion that analytical thinking alone is not a silver bullet for reducing the influence of falsehoods online.

Secondly, we looked for evidence of confirmation bias. Our analysis discovered that, indeed, prior beliefs were a strong predictor of whether one would consider information as truthful, but with a limitation – only in case the prior attitude was pro-vaccination. This finding is controversial to the public opinion, that those who support vaccination do not fall for false information, whereas those against vaccination are considered to fall more for disinformation and fake news, ultimately distrusting "facts and scientific proof". Though relatively unexpected for public, these findings illustrate exactly the expected results from theoretical and scientific standpoint. In contrast, these findings show that those who have decided to get vaccinated (or support it) are more prone to misclassifying true concerns and doubts about vaccinations as false. Though our second hypothesis is partially supported and is consistent with theoretical background (Hastie, 2014; Ciampaglia & Menczer, 2018; Lewandowsky et al., 2012), it is clear that

even those opposing vaccination can perceive information that promotes it as truthful. Hence analysis of content specific attributes sheds some light on these results: confirmation bias is strong in the case of emotionally intense stimuli if we consider whether stimuli are emotionally intense or not and whether headlines are true or false. The largest difference between the groups in our sample appeared when headlines with low emotional intensity against vaccination are evaluated. In conclusion, confirmation bias is influential when considering the truthfulness of the information. However, content-specific characteristics, e. g. emotional intensity, also play into such evaluation.

When we look at how high versus low-intensity stimuli are evaluated within the confirmation bias paradigm, it first seems that there are no differences between these content characteristics. However, an asymmetrical pattern emerges when additional characteristics are studied – whether false or true information are presented. Regardless of prior attitude towards vaccination, in the case of truthful content supporting vaccination, emotionally intense stimuli are evaluated as more truthful (vice versa for false content pro-vaccination). Moreover, as for content against vaccination, the opposite pattern is seen – in the case of truthful headlines, those low in emotional intensity are seen as more truthful, and in the case of falsehoods, headlines high in emotional intensity are seen as more truthful. While these findings are not in line with some results from previous research (Wahl-Jorgensen, 2013; Sheppes, 2014; Martel, Pennycook & Rand, 2020), it is clear that the emotional intensity is influential though the exact pattern is not yet clear. Within our sample, participants showed that emotional intensity has a connection with the article's content (pro-vaccination or against) and not with individuals' attitudes (pro-vaccination or against), which might explain why traditional media literacy methods are limited in their success in protecting individuals from misinformation online.

Conclusions

To recap and add some final thoughts, we have found evidence for confirmation bias on multiple levels, the positive effect of analytical thinking on accuracy judgment and the complex nature of emotions that impacts the evaluation of information online. We also noticed a relatively high ability to spot falsehoods by looking at headlines without any other cues. Meanwhile, there are also some limitations and thoughts for further research – first, just the ability to spot truth is not enough to stop falsehoods from spreading; therefore, improving one's analytical thinking can lack the necessary effectiveness. There is a need for further research on the emotional component in information consumption online – preferably

from the percipient's viewpoint. The questions set to be answered within this study are just growing in importance, therefore, further research is necessary, but it also seems to be vital to keep living in a time where unverified information is spreading like wildfire.

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TRUE, PARTLY FALSE, AND FALSE TESTIMONY OF CHILD WITNESSES: AN ASSESSMENT OF CREDIBILITY

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ABSTRACT

The credibility of child witness testimonies is an important and controversial issue in forensic psychology. Children from an early age can testify in legal proceedings, while children are able to give false testimony for a variety of reasons. Research to date has focused on examining the differences between true and falsified children's testimony, but little is known about assessing the credibility of testimony that is partly true but partly falsified. This paper presents a small sample quasi experimental study that explained the differences between true, partly falsified, and completely falsified children's stories, and clarified the methodology for conducting a broader study. Study questions: what are the differences in credibility scores between true, partly falsified, and falsified children's stories in this group of children; how do children understand the instruction to create a partly falsified story? Nine children aged 11 years ($n = 9$) participated in the study, three children in each study group. The children were interviewed about a real, partially falsified or completely contrived event, as well as taking the WISC-4 sub-test "Vocabulary". The content of the narrative was assessed using the Criteria Based Content Analysis (CBCA). Results: CBCA averages did not differ between true-story and partly falsified story groups, while there were more children with higher CBCA scores in the true-story group than in the partly falsified story group. The CBCA averages were lower in the contrived story group compared to the first two groups. The children had difficulty spontaneously producing a false story during the interview. An association was found between CBCA scores and children's level of verbal ability. The trends observed in the study group should be tested in a larger study with a larger number of participants.

Keywords: *CBCA, child witness, testimony, credibility, assessment*

Introduction

Children's testimony provides important evidence in the legal context, especially in criminal cases of domestic violence and child sexual abuse. Studies show that children can talk about their experiences at an early age

and to be reliable witnesses (Goodman & Melinder, 2007). At the same time studies also show that children can give false testimony and lie (Talwar & Crossman, 2012). Researchers point out that the ability to lie develops almost simultaneously with children's ability to present true information about the event. Children lie for a variety of reasons – already at an early age, lies are created with the aim of hiding a violation, following this are lies formulated to gain some benefit, and during further development lies are produced to maintain one's self-esteem (Vrij, 2008). From an early age onward children can lie to hide not only their own violations, but also the violations committed by their parent or another meaningful adult (Talwar & Crossman, 2012). Studies show that a large proportion of children lie when an adult asks them or requests them to do so (Vrij, 2008), and children lie even if they have promised to tell the truth (Bala et al., 2000). This means that children from an early age can provide both true and false testimony in the legal context, they are able to lie on their own initiative or under another person's influence, even in circumstances where they are asked to tell only the truth.

Regarding the assessment of the credibility of children's testimony, studies show that adults are very inaccurate in their intuitive evaluation of whether the child is telling the truth, and rarely do they show accurate judgments above the level of chance probability (Strōmwall et al., 2007; Vrij et al., 2006). Within the legal context there is a necessity for valid methods that will assist legal professionals in evaluating child witness credibility.

For purposes of evaluating the veracity of witness testimony the Criteria-Based Content Analysis (CBCA; Volbert & Steller, 2014) is considered to be the most widely used method worldwide (Vrij, 2008). This method is used in scientific research on the credibility of testimony. In some countries it is recognized in legal practice as scientific evidence in criminal proceedings as part of the broader Statement Validity Assessment. The theoretical framework of the CBCA includes the hypothesis that there are qualitative differences between an experience-based narration and a narration that is not based upon the actual experience. The CBCA includes 19 criteria for assessing the level of veracity of the verbal content of a testimony, including criteria such as coherence of narration, amount of detail, description of the interactions, information about one's own psychological condition, self-correction within the spontaneous narration, and more. (Volbert & Steller, 2014). Meta-analysis of studies has shown that CBCA scores differ depending on whether the narrative of the testimony was based on actual or falsified experience (Amado et al., 2015; Oberlader et al., 2016). However, limitations of the method have also been pointed out (Schemmel et al., 2020).

Summarizing previous studies and the scientific literature on the credibility of children's testimony it is apparent that they primarily focus on the differences between true stories and completely fictional or falsified stories. There is little information in the scientific literature on how to distinguish a testimony based on a true, experiential event that is somewhat altered and falsified regarding certain essential details. In legal practice there are cases where children provide testimony based on real events but with partially distorted details, for example, by referring to a different person as the perpetrator to protect a meaningful adult.

In a previous experimental study (Akehurst et al., 2018) involving adult participants ($n = 48$) the participants were asked to develop narratives used a staged criminal offence (theft) and evaluated true, partly false, and false narratives. The CBCA scores were higher for true narrative compared to partly or completely falsified narratives, and the CBCA scores for the latter two groups were similar. Some of the CBCA criteria were significantly less common in partly and completely falsified stories compared to the true story group. The accuracy of the final credibility assessment did not differ significantly between the three groups, but only completely true and false stories were correctly identified above the probability level.

This small sample quasi experimental study is the first step to determine whether the CBCA current method for assessing the credibility of testimony can identify differences in the level of veracity in a child's verbal account of a partly falsified event compared to the narrative of a true and completely falsified event.

Issues addressed in the study:

1. What initial hypotheses can be made by comparing the reliability of verbal content in the groups of true story, partly falsified story, and completely falsified story?
2. How do children understand and be able to follow the instruction of the study – to tell a partly falsified story?
3. What aspects related to the study methodology can be identified that would need to be perfected or improved for the further research?

Method

Study participants. The pilot study involved 9 children*, including 5 boys and 4 girls. All children were 11 years old at the time of the study and had completed 4th grade.

(*Parental permission and children's consent to participate in research was obtained before starting the study).

The children were divided into 3 groups, 3 children in each group, balancing the number of children in each group by gender: 1st true story

group, 2nd partly falsified story group and 3rd completely falsified story group. All children from the first and second groups attended the event at the Inflatable Water Amusement Park (Event), where they spent 2 hours playing around the water attractions in the presence of a researcher (which allows to capture the basic truth about the Event). A week later, the children were interviewed about the Event. The children of the third group did not take part in the Event and had never visited an Inflatable Water Amusement Park before.

The children were interviewed individually. The children of the first group were asked to tell everything they remember about the Event. The children in the second group were instructed before the interview to change the story that they had participated in the Event with their family, not their peers, and to tell the partly changed story about the Event in the interview. The children in the third group were instructed before the interview to come up with a story about the Event and tell during the interview as if they had actually taken part in an event at an Inflatable Water Amusement Park with their peers. Invitations to free narration and open-ended questions were used in the interview, according to the principles set out in the NICHD protocol (Otgaar et al., 2020). After the interview, all the children were asked what was true in their stories, what had been invented. In addition, children were asked to take a Vocabulary Test (WISC-IV) to check their level of verbal ability. At the end, the children received a small gift for participating in the study.

The interviews were recorded audio and transcribed in interview transcripts. The verbal content of the children's narratives was analysed using the CBCA method according to 19 evaluation criteria. The presence of each criterion in the narrative was rated on a scale from 0 to 2 (0-not included, 1 – is included, 2 – is conclusively included, max = 38 points), resulting in a total score.

Results

The results of the study are summarized in the table (see Table 1).

The first and the second group showed the identical results ($M = 16.33$) for the CBCA total scores (see Figure 1), the third group showed lower results in comparison to the first two groups ($M = 4$).

The first and the second group received similar result on the Vocabulary subtest (1. group $M = 9.3$, 2. group $M = 9$), corresponding to the age norm average results. The third group's Vocabulary subtest results were lower ($M = 6.33$), the two of three children scored below the normal range. The correlation between CBCA and Vocabulary subtest scores for the entire sample was $r\,(9) = 0.71$.

Table 1. CBCA total scores and Vocabulary subtest results.

Groups	True event			Partially fabricated event			Fully fabricated event		
Child's gender	boy	girl	boy	girl	girl	boy	girl	boy	boy
CBCA total score	10	20	19	16	17	16	4	6	2
Vocabulary subtest score (standardized)	6	8	14	9	9	9	5	8	6
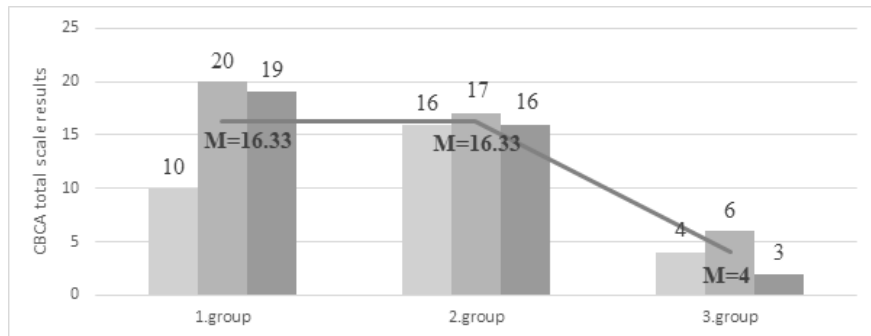
Figure 1. Individual results and group averages of CBCA overall scale
  Note. 1. group – true story; 2. group – partly false story; 3. group – false story

Children in all three groups indicated that they understood the instruction, but one child in the group of partly falsified story expressed concern about the falsehood of telling: "Do I have to lie?", "I do not lie well". Children (except one) from all three study groups followed the instructions during the interview, creating the narrative according to the indicated circumstances. The exception was one child from the second group, who indicated after the interview that she had not only changed the true story as instructed, but also supplemented some of the situations she had experienced during other events. The content of the stories of the first and second group children about the Event was compared with the researcher's observations during the Event (basic truth), thus confirming the narrative's compliance with the instruction (true story or partly falsified story). The children of the third group had difficulties in spontaneously coming up with a narrative about the falsified event during the interview, the children of this group had smaller narratives, longer pauses, the children more often answered that they no longer remembered or nothing else happened.

Discussion

The results obtained in the study group reveals, that children from the true story and partly falsified story groups showed the same CBCA overall scale averages (M = 16.33). Children from partly falsified story group did not have difficulties in changing the story to a partly false story during the interviews. It can be assumed that creating a narrative that is only falsified in some respects but is generally based on real events is less complicated for children than creating a story that is completely falsified. In the case of a partially falsified narration, children may rely on their own experience, and it may be assumed that in such a case the narrative will contain more indicators of credibility that make it difficult to distinguish it from the true narrative. But it should be noted that the results obtained in this study differ from the results obtained in a previous study involving adult participants (Akehurst et al., 2018), which can be explained by the different study methodology and the age of the respondents. It is important to continue research on the partly falsified stories implementing study with larger number of participants.

The completely falsified story group had a lower CBCA overall score (M = 4) compared to the first two groups. During the study, children in the third group had difficulty spontaneously creating a fictional story during the interview. The scientific literature indicates that providing false information requires much more cognitive effort than telling the truth. Creating and maintaining a lie is a complex task that requires a certain level of cognitive development. When telling an untruth, the child has to perform several cognitive activities at the same time – provide information about a situation structured in the mind, block information related to real events and situations so that it is not included in the narrative, memorize the untrue story and be able to supplement and improve it flexibly, without inconsistencies, to enshrine the additions made in the memory, which must be taken into account in the future story. To lie successfully, one must also take into account other people's knowledge of the situation, construct false information that is different from the child's true views, be able to operate with one's non-verbal and verbal expressions to maintain confidence, make sure the listener believes lies and be able to adapt one's performance to be considered credible. Thus, the ability to lie reliably is considered a sign of cognitive maturity that occurs when a child begins to understand other people's mental states and consciously control one's behaviour (Talwar & Crossman, 2012). Studies show that lying is associated with attention stability and the development of working memory, mental theory, and management functions (Walczyk & Fargerson, 2019). Children's lying skills develop during the first ten years of life (Talwar & Crossman, 2012) and

are related to both the development of the child's cognitive abilities and experience and also to the practice of lying. Due to the cognitive complexity of lying, young children are unable to provide convincing lies, i. e., young children are able to lie but are unable to maintain their lies if it is necessary to give a detailed account of the event and if the children are additionally questioned. On the other hand, when they reach adolescence, children's cognitive abilities are mature enough to give false information on an equal footing with adults. The difficulties observed in the study group of children from the group of completely falsified story are similar to those described in the scientific literature and results in lower CBCA scores.

The quality of the narrative can be affected by a number of factors that are not related to the truthfulness status of the narration, so the development of standardized methods for assessing credibility is a complex task. The CBCA is not a standardized study method for determining the level of veracity of a testimony. Researchers point out that when using the CBCA in practice, as part of a broader approach for evaluating the veracity of a testimony – Statement Validity Assessment (SVA) approach, it is necessary to assess the specifics of each individual child and case and take them into account, to evaluate the indicators obtained by the CBCA in connection with this assessment (Volbert & Steller, 2014). At the same time, previous studies have attempted to establish a reference point for assessing the outcome of the CBCA. According to a previous study, if the CBCA overall score is >16, the story is considered more credible, while a score of <10 indicates that the story has few credibility criteria (Welle et al., 2016). It should be noted that a CBCA total score of <10 does not automatically mean that the narrative is not credible, as the quality of the narration may be affected by other factors, such as the child's verbal ability, motivation, emotional factors, and so on. In this study, the stories of two children from the group of true stories (66%) and the story of one child from the group of partly falsified stories (33%) may be assessed as rather credible, while all the stories of children in the third group showed little credibility criteria.

The results obtained in the study show a correlation r (9) = 0.71 between the results of the Vocabulary test and the CBCA total score, which shows that the level of children's verbal abilities is related to the level of veracity in the children's narrative. When describing children as witnesses, it is pointed out in the scientific literature that children's verbal abilities are one of the main prerequisites, along with memory, for a child to be able to give verbal testimony about his or her experience (Silva et al., 2016). Studies show that the incidence of CBCA criteria in narration is influenced not only by the truthfulness of the narrative (experiential or imaginary story), but also by the narrator's cognitive abilities and narrative habits (Nahari & Vrij, 2015). The child's verbal abilities determine both

the content of the information included in the narrative and the amount of information provided, so in the case of limited verbal abilities, the child will provide a lower quality story that will receive a lower number of credibility criteria.

The study instructions were understandable for the children. However, one child from a group of partly falsified stories during the briefing expressed concern about telling the untruth, i. e., must lie. This reaction points to the child's understanding of lying as negative behaviour and to the ethical dilemma that the child faces when given the task of lying, which may affect the child's motivation to make credible lies during the study. As indicated in the scientific literature, children understand lies as negative behaviour at an early age (Talwar & Crossman, 2012). Researchers point out that people tend to tell the truth in most cases, and people decide to lie to achieve a certain goal. The choice between lying and the truth is influenced by motivation and social factors. Lying theories describe this decision-making process. People decide to lie or tell the truth based on the potential benefits or negative consequences of each of these behaviours. The potential benefits or negative consequences can be psychological (such as praising or avoiding condemnation), material (such as receiving a reward or avoiding the loss of a benefit), or social (such as helping or hurting someone). If the predicted potential benefits or consequences of lying outweigh the benefits or consequences of telling the truth, one is more likely to decide in favour of lying (Wyman et al., 2021).

All children followed the instructions and created the stories according to the conditions. Except for one child, who indicated after the interview that she had not only changed the narrative according to the instructions but had supplemented the narrative of the Event with other situations she had experienced at another leisure event with her family.

Conclusions

Based on the results of this study, the following hypotheses can be put forward: The CBCA overall scale averages will be similar for children from the true story group and the partly falsified story group; telling a partly false event will result in fewer children getting a credible CBCA score (CBCA total score > 16) compared to a true story group; narrative of a completely false event will receive a low credibility criterion (CBCA total score < 10) and the CBCA total scale average will be lower in this group compared to the first two groups.

The level of verbal ability of children should be taken into account when forming study groups to exclude the effect of different verbal abilities on CBCA outcome.

Lying behaviour must be based on motivation to lie, in order for the child to try to give a credible lie, otherwise the child will choose to tell the truth rather than try to persuade the interviewer to believe in an untrue event. Motivation to lie would allow the child to overcome the desire to be honest and reduce the stress associated with the need to lie. This means that children from the group of partly falsified and completely falsified stories in the instruction phase must be motivated to lie. This can be achieved by providing a detailed explanation of the significance of the study and, consequently, the need to provide false information within the study; by explaining to children that it is good to say untruths in this study, and that this is different from everyday life situations where it is right to be honest; by strengthening the additional motivation of children to lie during the study with a small gift (benefit) for participating in the study and completing the study tasks.

Instructions given to the children need to be supplemented and improved in the study method, so that they are completely clear and unambiguous regarding what the child should say during the interview.

Given the cognitive complexity of lying, it would be advisable to give children from the group of partly and completely falsified stories to rethink their narrative and get used to telling the false / partly false event before the interview. This approach has been observed in previous studies on lying with children participation. Such an approach would also be closer to real life conditions, where children can lie in a legal situation because they are motivated to do so and children have the opportunity to prepare to lie credibly.

Limitations

The number of participants in this study allows the results to be applied only to the specific study group. Based on the results obtained in the study group, the trends were analysed to cautiously put forward hypotheses, which should be tested in a feature study with a wider involvement of participants.

In this small size quasi experimental study, the children's interviews and transcripts of the stories were evaluated by a researcher who is familiar with the circumstances of the study. Such an approach was determined by one of the aims of this study – to test the adequacy of the study methodology by tracking each stage of the study, while such an approach cannot exclude the risks of subjectivism. When organizing a larger study, it is necessary to involve "research" assistants "blind" to the research conditions in order to ensure the objectivity of the study. Also, no second evaluator was invited to the pilot study and no coordination of evaluators was performed, which is also a limitation of this study.

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SUPERVISOR AND CO-WORKER FEEDBACK ENVIRONMENT AND BLUE-COLLAR EMPLOYEE ENGAGEMENT

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ABSTRACT

The aim of the research is to study the relationships between feedback and employee engagement among manufacturing workers. There has been little research on the topic involving low-skilled or blue-collared employees. The aim of the study is to identify what are relationships between the feedback provided by one's supervisor and their co-workers and the employee engagement in manufacturing companies. Three hypotheses were tested. First, there is positive correlation between high scores of supervisor feedback environment and co-worker feedback environment and employee engagement. Second – there is negative relationship between the age of workers and their engagement; the third hypothesis – there is positive relationship between the blue-collar employees' tenure and their work engagement. The study involved 495 respondents, blue-collar workers in manufacturing companies. The average age of the respondents was 42 years (range 18 to 75 years), and their work experience ranges from 0 to 10+ years.

Questionnaire in Latvian and Russian were prepared for the study. Instruments used– Feedback Environment Scale (Steelman & Levy, 2004) was adapted and Utrecht Work Engagement Scale (UWES-9, Schaufeli & Bakker, 2003). The results confirm findings of previous studies – high indicators in feedback environment predict high level of employee engagement. Supervisor feedback has higher level of influence than the one provided by co-workers. The most important factors of feedback provided by one's supervisor that affect the engagement are Feedback quality and Favorable feedback. The important factors of co-worker feedback are the Feedback delivery and Favorable feedback. The effect of age and tenure on engagement was not confirmed.

Keywords: *engagement, co-workers feedback, feedback environment, supervisor feedback, workers*

Introduction

Demand for blue-collar employees in manufacturing is on the rise. Employee replacement is becoming more expensive as production processes become more complicated. Accordingly, employee engagement has become

an important criterion on which to evaluate managers performance. Similar criterion for management has become quality of feedback in everyday communication. This research study the impact of feedback on worker engagement exploring whether the feedback provided by the supervisor has a different impact on employee engagement compared with feedback provided by co-workers. Given that workers represent a wide range of age groups, the results are analyzed taking into account demographic variables – age, tenure – exploring the relationship between the feedback environment of supervisors and co-workers and the employee engagement in their work.

Feedback

The quality of feedback is a key part of any development process and learning of new skills. Learning from experienced colleagues and exchanging information with them is an essential part of everyday life. But one should take into consideration the relatively lower level of education among workers in general. Consequently, they have less trained learning skills (personal learning barriers), limited expression capacity (less rich language) and generally a more dismissive attitude towards formal learning (Decius, Schaper & Seifert, 2021). In Latvia, there is also a growing number of guest workers from countries with Russian language skill, and this facilitate the daily use of two languages. Some of the workers do not speak Latvian, but some poorly speak Russian, which means that supervisors should often communicate with their team in two languages in a limited period of time due to active work flow whilst being clear, concise and short. According to the interviews with HR (human resource) management, workers mostly learn and grow in their workplace, accumulating experience and receiving feedback from several parties – supervisor, mentor and co-workers. Various studies assume that the amount of non-formal training in the company reaches between 70% (Cseh, Watkins & Marsick, 2000) and 90% (Flynn et al., 2006; Tannenbaum, 1997). Informal learning takes place by raising questions, observing processes, practicing and receiving feedback (Sambrook, 2005). Especially in manufacturing companies where formal training is not every day routine, employees' own desire to learn and social support they receive is particularly important (Decius et al., 2021). It should be noted that all people are in a social exchange relationship and transfer information using the principle of personal pleasure or mutual benefit (Cropanzano et al., 2005). Feedback skills are essential because it determines the future behavior in a company (Caresoli et al., 2017). All employees in the company are in relationships with executives, colleagues and subordinates. This relationship contributes to the exchange of information and the transfer of knowledge, which, in turn, is driven by personal interest and the supportive or non-supportive environment of the company for the provision and receipt of feedback.

Feedback environment

The concept of a feedback environment has been evolving gradually, and researchers say it is still evolving. Contextual effects were identified as a confounding factor that should either be ignored or explained. The most common issues identified by subordinates that their managers should change on their performance appraisal are: managers need to be trained on how to provide negative feedback and make it constructive; managers do not explain the performance appraisal process and managers are not rewarded for subordinate development (London, 1997). Researchers (Steelman & Levy, 2004) developed a feedback environment scale and defined the construct. Within the framework of this study, the *Feedback environment scale* was adapted, which examines the feedback in seven dimensions – credibility to the feedback provider; feedback quality; feedback delivery; favorable and unfavorable feedback; the source availability and feedback seeking.

High-quality feedback is consistent over time, specific, and considered more useful than poor-quality feedback, which varies depending on the provider's mood, his or her liking for the feedback as such, and observational capabilities (London, 1997). Studies have repeatedly emphasized that regular feedback is likely to change employee behavior (Pulakos, Hanson, Arad & Moye, 2015). Given the informal nature of day-to-day feedback, a feedback environment can overstep the challenges of rigorous, formal performance management and evaluation systems in which feedback is offered in annual appraisal once or twice a year. Studies have shown that a avorable feedback environment facilitate the desired results, including job satisfaction (Anseel & Lievens, 2007), a sense of belonging to a particular organization (Norris-Watts & Levy, 2004; Peng & Lin, 2016), and reduces intent to change company (Sparr & Sonnentag, 2008).

The authors (Whitaker et al., 2007) found that the search for feedback from colleagues decreased if the employee had to put too much effort receiving feedback one's is looking for. This is facilitated or reduced by the existing feedback environment in the company and the existing in company feedback culture. Referring to study (Whitaker et al., 2007) an employee-friendly feedback environment does not have much impact on employees who are highly oriented to learn new skills because they are feedback-oriented.

Engagement

Combining several definitions, engagement can be described as a positive psychological state of an employee, which can be observed in terms of purposeful work, inherent energy level, enthusiasm and commitment, which in turn contributes to the reaching company's goals and gaining success (Albrecht, 2010; Hallberg & Schaufeli, 2006). Complementing the

above, work engagement was proposed as a multidimensional construct of motivation (Rich Lepine & Crawford, 2010).

The engaged employees contribute to more positive outcomes for the organization as a whole, including customer satisfaction, lower employee turnover, higher productivity, and financial benefits (Harter, Schmidt & Hayes, 2002). Studies show that levels of involvement change over time (George, 2010).

It is important to look at the factors that facilitate engagement, as the work environment becomes more dynamic and employee training is more time-consuming, and the engaged employee is more valuable. Engagement is especially important among workers, as work processes are complex and working hours often extended due to the specifics of production work – work must be completed until a specific process is completed. Therefore, as the number of employees satisfied with the feedback increases, so does their intention to stay in the company and their engagement level (Decius, Schaper & Seifert, 2021).

The results of a another study (Eva, Meacham, Newman, Schwartz & Tham, 2019) show that organizations are encouraged to ensure that employees receive regular feedback from a number of sources, as such feedback may increase employee engagement and perceptions that the organization abides by its psychological contract. That encourages innovative behavior by employees. Referring to Luthans (Luthans, 2002), first, managers who support and develop team members can expect team members to show a higher level of engagement. Second, managers who are less able to develop their leadership skills can increase the engagement of their subordinates through task-oriented behaviors.

First hypothesis, there is a positive correlation between high scores in supervisors feedback environment and co-workers feedback environment and employee engagement.

This research found answers to two study questions that study more deep hypothesis 1 – which of the seven supervisor feedback factors have significant impact on the engagement of workers. Second – which of the seven co-worker feedback factors have significant impact on the engagement.

Tenure and age of employees

With reference to the aim of this study – the impact of feedback on employee engagement, the following aspects should be taken into account – labor market shortages, long service period and an aging workforce. Studies show evidence of positive relationship between age and employee engagement, such as job satisfaction (Birdi and Warr & Oswald, 1995) and job motivation (Ng & Feldman, 2010), suggesting age differences in

employees. Similarly, researchers (Christian et al., 2011) found a positive correlation between engagement and increase in engagement with age. The authors (Douglas & Roberts, 2020) found that employees over the age of 50 have also higher indicators in the factors of enthusiasm and dedication (according to the factors measured in the Utrecht work survey). A study conducted by Jelenko (Jelenko, 2020) in Slovenia, examining the impact of age differences on job satisfaction using the UWES-9 survey, found that, regardless of age group, intergenerational differences have a direct negative effect on job satisfaction and an indirect negative effects on employee engagement.

The usage of feedback, it has been concluded that the adjustment of one's actions tends to decrease with age (Ferdinand & Czernochowski, 2018). Ferdinand and Czernochowski also confirmed in the study that the processes that take place during learning, such as the evaluation of the feedback received, the use of the information received through the feedback, and the updating of knowledge, are influenced by age. The second hypothesis– there is a negative relationship between workers' age and their engagement.

Not only the increasing age of employees, but also the high turnover of employees is a issue in most of the workplaces today. Employee experience affects both engagement and the feedback environment (Welch & Jackson, 2007). It should be noted that a study (Ramos et al., 2016) concluded that workers with a bigger work tenure showed a lower level of engagement in work when quantitative requirements were high. Workers in manufacturing companies have high quantitative requirements.

The third hypothesis: There is a positive relationship between the employees' length of service in the company and their engagement.

Method

This was a correlative descriptive study designed to reveal the inter-relationships of the variables. The variables feedback environment and employees engagement were used (see Figure 1).
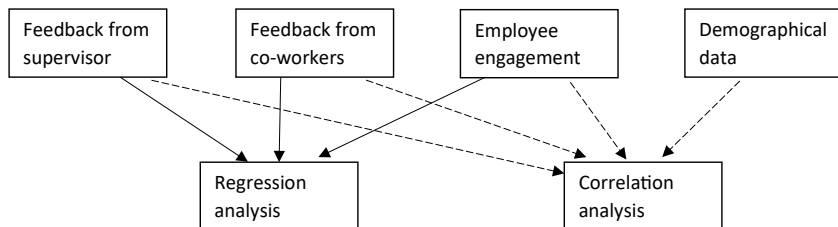
Figure 1. Research schema

Feedback environment consisting of direct feedback from one's supervisor and colleagues in seven subscales: credibility to the feedback provider; feedback quality; feedback delivery; favorable and unfavorable feedback; the source availability and feedback seeking. Engagement in work consists of scales of vigor, dedication and absorption (see Figure 2)
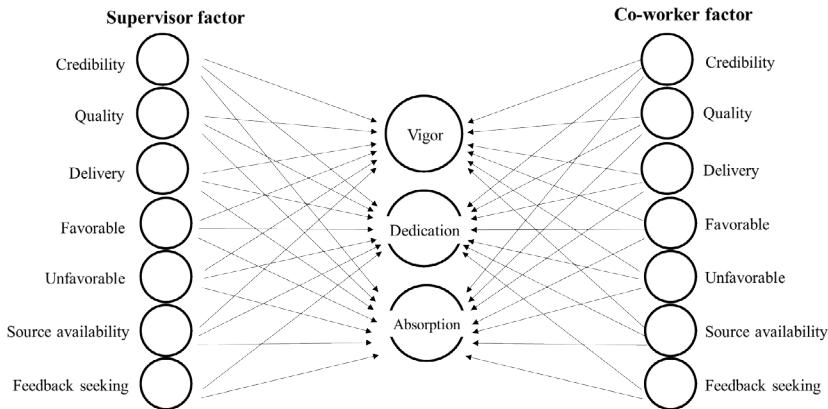
Figure 2. Research scheme for regression analysis

Sample

Respondents – blue collar workers of manufacturing companies aged 18 to 70. The following demographic data were collected: age of workers, language of communication, tenure. A total of 1,200 questionnaires was printed and distributed to the companies. Filling method – manual. 640 were returned, out of which 495 were of sufficient and good quality to be processed digitally and be used for further calculations and analysis. Demographics are shown in Table 1. The average age of the respondents was 42 years.

The questionnaires, together with the envelope, were handed over to the representatives of the personnel of the production companies, who further addressed the employees accordingly. The workers filled in the questionnaires voluntarily and anonymously. The completed questionnaires were returned in sealed envelopes. Questionnaires were entered and saved in one linked file and the data were processed in an aggregated way. The data, after being collected and entered into the Excel environment and processed in the SPSS program.

Table 1. Sample size. Sociodemographic data ($N = 495$)

Feature		frequency	%
Communication language	Latvian	401	81.0
	Russian	94	19.0
Tenure in company	0–12 month	95	19.2
	1–2 years	58	11.7
	3–5 years	129	26.1
	6–10 years	101	20.4
	10 and more years	112	22.6
Age	18–30	111	22.4
	31–50	262	52.9
	51–75	122	24.6

Data collection

Instruments used – Utrecht Work Engagement Scale (UWES, Schaufeli & Bakker, 2003) in Latvia has been adapted by Sanita Kronberga (Kronberga, 2013). The adaptation of the short version of the Utrecht Work Engagement Scale in Russian (UWES-9, Schaufeli & Bakker, 2003) is included in the Schaufeli & Bakker UWES Test Manual and was used in this study (Preliminary Manual [Version 1.1, Schaufeli & Bakker, December 2004]. The UWES-9 questionnaire consists of nine questions (short version). UWES-9 includes three subscales that reflect the basic dimensions of engagement. The variants of the answers are arranged on a Likert scale from 0 to 6. The Utrecht Work Engagement Scale instrument's internal coherence indicators in Latvia are $\alpha = 0.92$, the author's study's Cronbach's alpha is 0.94, which can be assessed as excellent.

Second tool was Feedback Environment Scale (FES) (Steelman, Levy, 2004). The FES was developed to provide a better understanding and diagnosis of feedback processes in organizations. The questionnaire consists of 32 questions evaluating the feedback provided by the line manager and 31 evaluating of the feedback provided by the colleagues. From 1 (disagree) to 7 (strongly agree). FES was adapted in Latvian and Russian within this study.

Results

Specific descriptive statistics were obtained using the UWES 9 and Feedback Environment Scale. The reliability of these surveys was determined by examining the internal coherence of the questions within each survey (Cronbach's alpha indicators), these indicators determine excellent internal coherence. Compared to the original questionnaire (Steelman & Levy, 2004) the scales correspond to a normal distribution. Also, the results of both aggregation and individual scales of involvement in work correspond to the normal distribution.

Pearson correlation calculations were used to determine the relationship between employees and socio-demographic indicators.

Following hypotheses were tested:
1) there is a positive relationship in age and involvement in work;
2) there is a negative relationship between age and involvement in work (see Table 2).

Table 2. Results of Pearson correlation coefficient calculations for employees and socio-demographic indicators ($N = 495$)

	Age	Tenure	Language	Engagement
Age	1			
Tenure	0.47**	1		
Language	0.01	–0.09	1	
Engagement	0.19**	–0.38	0.08	1

**$p < 0.01$ (backwards)

The calculations reject hypothesis that there is a positive relationship between age and engagement. In turn, the hypothesis – there is a negative relationship between age and engagement in work. Calculations with a high significance level ($p < 0.01$) indicate a direct relationship between the respondents' age group and the results of their involvement in work, but the closeness of this relationship is considered to be insignificant (0.19). Calculations show: the older the age, the greater the engagement of employees. But from a statistical point of view, the impact is not so great as to be significant. To find out whether there is a correlation between the feedback rates and the engagement rates, the combined effect of the total feedback from the supervisor (all 7 factors) and the combined effect of the total feedback from co-workers (all 7 factors) on involvement in work (all three factors together) (See table 4). Using Pearson's correlation coefficient calculations, it can be seen that both – the feedback provided by the supervisor and the feedback provided by co-workers have positive

correlation with engagement, while the feedback provided by the supervisor has a statistically greater effect.

Testing the hypothesis: There is a positive correlation between high scores in the feedback environment received from the supervisor and feedback environment received from co-workers and employee engagement. Pearson correlation coefficient calculations were used. The hypothesis was confirmed – the higher the indicators of the feedback environment provided by the direct supervisor and colleagues, the higher the respondent's involvement in the work (see Table 3).

Table 3. Results of Pearson correlation coefficient calculations for total indicators of Supervisors feedback, co-workers feedback and engagement total indicators ($N = 495$)

	Co-workers FB	Supervisor FB	Engagement
Co-worked feedback	1		
Supervisor feedback	0.71**	1	
Engagement	0.47**	0.54**	1

**$p < 0,01$ backwards

Regression analysis was performed to find out which feedback factors have significant impact on overall engagement rates. It shows that the involvement of workers in their work is significantly influenced by the quality of feedback provided by their direct manager and how favorable it is, as well as the way the feedback delivered by co-workers is given and how favorable it is (se Table 4).

Table 4. Results of multiple regression analysis for engagement as a dependent variable of the feedback environment provided by supervisors an co-workers ($N = 495$)

	Unstandardized coefficient		Standardized coefficient	t	p
	B	Standard deviation	ß		
FES					
Supervisors FB					
FB quality	0.37	0.11	0.18	3.28	0.00
Favorable FB	0.45	0.13	0.20	3.46	0.00
Co-workers FB					
FB delivery	0.31	0.13	0.14	2.34	0.02
Favorable FB	0.41	0.14	0.17	2.98	0.00

In the following calculations, using Pearson's correlation, it was clarified how these factors are influenced by the socio-demographic indicators of the respondents (see Table 5).

Table 5. Results of Pearson correlation coefficient calculations for total indicators of feedback environment factors and sociodemographic indicators ($N = 495$)

	Age	Tenure	Language	FB quality supervisor	Favorable FB supervisor	FB delivery co-workers	Favorable FB co-workers
Age	1						
Tenure	0.47**	1					
Communication language	0.01	0.05	1				
FB quality supervisor	0.01	–0.14**	0.06	1			
Favorable FB supervisor	0.07	0.00	0.10*	0.69**	1		
FB delivery co-workers	0.03	-0.09	0.04	0.57**	0.55**	1	
Favorable FB co-workers	0.06	0.03	0.12*	0.49**	0.56**	0.70**	1

**$p < 0,01$ backwards

Analysis of the statistically significant factors for feedback in terms of tenure, age of respondents and language of communication shows that the longer the tenure, the less important the quality of feedback provided by the supervisor. The indicator is statistically significant but not taken into account.

The language of communication is important for the feedback factor "Favorable feedback" provided by the line supervisor and co-workers. Thus, it can be concluded that communication in one's mother tongue or in a language close to their mother tongue is easier to understand and perceive nuances.

Conclusions

The aim of the study was to find out what correlations exist between employee engagement and feedback provided by one's supervisor and co-workers, as well as identify the factors of feedback provided by both the supervisor and co-workers that have significant impact on employee engagement.

The first hypothesis was confirmed as there is a positive relationship between feedback and engagement. Using the Feedback Environment Scale, the results confirm findings of other studies discussed in the theoretical section. There are relatively few studies on the impact of co-worker feedback, and the work done in this study is complementary to co-worker feedback research. Using the UWES-9 and the factors characterizing the engagement (vigor, dedication and absorption) included in it, the results were obtained that resonate with the relationships confirmed in the previous researches. Organizations are encouraged to ensure that employees receive regular feedback from a variety of sources, as such feedback may facilitate employee engagement. It is also useful to use peer feedback to complement the lack of feedback from managers where necessary. Thus, to answer the research question "which of the factors of supervisor feedback influence the engagement at work most?", the results showed that the quality of feedback and favorable feedback have the greatest impact. The results are in line with previous research, which concludes that direct managerial feedback is also positively related to job satisfaction and a sense of belonging to the workplace. On the other hand, when answering the question of which of the seven factors of feedback provided by co-workers influence the involvement in the work, the following factors highlighted – the delivery of feedback and also favorable feedback. If employees feel that the company provides them with the feedback they need, they are satisfied with the team, and if the feedback they receive is satisfactory, the involvement rates increase.

The second hypothesis, the age of the employee is negatively related to involvement in work, was partially confirmed. Statistical indicators indicated that the correlation is insignificant (significance level appropriate, but the coefficient is low), although the relationship is opposite – the older the age, the higher the involvement. According to the previous studies, age has positive effect on engagement. But the results of this study can be influenced by various factors, so it would be necessary to further study the relationship between age and engagement and the total emotional resources of low-skilled workers. Group of respondents – low-skilled workers who, as they grow older and do not move to a higher-skilled job, have acquired skills for work and can easily apply these skills while working in similar jobs in different companies. The basic difference between white and blue collars should also be mentioned. White-collar workers are mainly satisfied with the content of their work, sense of accomplishment and level of appreciation. In turn, blue-collar workers are more motivated by salary, relationships with colleagues, working conditions and job security.

The third hypothesis – the employee's tenure is positively related to involvement in work – was not confirmed. From the pool of respondents, 22.6% were with the longest work experience (10 years and more).

The largest group (26.1%) represented 3–5 years of experience; according to the above-mentioned studies such employees have already developed skills to a certain level and many want to expand their responsibilities, but the developed skills do not prepare them for the desired responsibilities. There can be level of dissatisfaction because desires do not match opportunities.

Turning to the limitations of the study, the questionnaire was relatively long (72 questions in total) and, given the specifics of the respondents' work, the questionnaire may have been completed between workflows, while the length of the questionnaire exceeded the length of the break. The Utrecht job involvement survey was placed at the end of the questionnaire and the respondents were probably already tired of answering 63 questions, so they did not go deep enough into the nine questions assessing job involvement. In the future, the use of an abbreviated feedback environmental measurement scale should be considered. The abbreviated version consists of 22 items in supervisor's feedback environment assessments and 21 items on peer feedback environment measurements. In total, there would be 43 items instead of 63.

Theoretical significance of the research – in the future it would be worth reviewing the number of questions and feedback for the adaptation of the feedback environment scales to conduct a research between the performers of intellectual work (white collars). Thus obtaining comparable data with blue collar workers data. It should be noted that there is little research in Europe between the two groups and it would therefore be important to have an overview of the feedback from local companies. When considering additions to future research, it would be necessary to look in more detail at the feedback culture in the companies represented by the respondents. In this study, it is known that in one company the LEAN principle is in the work culture, in another company this was the first time that such a large-scale survey was offered to workers. This would also allow the results to be compared to the company's feedback culture. Importantly, with the development of the theory of the feedback environment construct, the researchers came to the conclusion that the feedback environment is closely related to the orientation to the feedback – in general, if the employee is interested in receiving the feedback less or more. The same applies for supervisors. Researching the orientation towards feedback would provide data that would be widely applicable to a particular company, showing the situation of orientation towards feedback of the department director and the employees of the department. The same should be said for a more detailed study of the feedback environment of supervisors and co-workers – if the company's shift and employee teams are constant, the results can be applied to a particular shift.

The practical significance of the study is that it is one of the few studies that addresses the low-skilled group of workers and provides important information on the factors influencing feedback. This leads to opportunities to develop and improve these important aspects of feedback, such as feedback quality from the supervisor. Also, receiving respectful feedback from co-workers (a factor with a significant impact – feedback delivery) shows that employees who receive and accept feedback from their colleagues are less dependent on their manager's feedback. They receive resources what they need to meet their job requirements from an additional source. As the feedback factor (favorable feedback) appeared in the feedback provided by both the line manager and colleagues, it is highlighted that recognition is important and have direct impact on engagement. This is in line with the principle of wellbeing and the concept of employee experience, which has been raised in recent years and includes all points of contact with the company experienced by the employee. Feedback is an integral part of wellbeing, just like an employee's experience that results in positive engagement. The results of this study show the characteristics in the social context that characterize low-skilled workers in companies today. The results of the research are practically applicable in the companies that participated in the study, as they illustrate the general trend among workers in manufacturing companies and allow to evaluate the feedback traditions, the way of providing and in-depth evaluation of the development of personnel management goals.

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SOCIAL EMOTIONAL HEALTH AND RESILIENCE OF TEACHERS IN THE EAST EUROPEAN COUNTRIES

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ABSTRACT

Research on teachers' social emotional health and resilience is important for quality learning and well-being at school, especially during the challenges of the COVID-19 pandemic. Research on mental health and resilience of teachers from Latvia, Lithuania and Slovak Republic was conducted as part of the ERASMUS+ project "Supporting teachers to face the challenge of distance learning". The primary goal of the first project phase to assess social emotional health, so-called covitality and resilience of teachers in elementary, secondary and high schools in post pandemic times and to focus on those areas which require significant support and development. 1200 teachers, 400 from each participating country, took part in the research. Results were based on data from research methods Social-emotional health survey-teachers (SEHS-T) and Resilience Scale. Teachers reported in all high level of social-emotional health overall indicator – covitality, as well as enough high level in four of its domains: belief in self, belief in others, emotional competence, engaged living. Level of teachers' resilience has reached a moderate level in all three participating countries. There were found high significant positive correlations between teachers' resilience and overall covitality, as well as between resilience and covitality. Positive teacher strengths that were identified are self-regulation, empathy, cognitive reappraisal. Identified weaknesses and limits will be used as a foundation for preparation of intervention activities for the teachers in the second project phase.

Keywords*: social-emotional health, resilience, strengths, teachers*

Introduction

Theoretical background

Three countries – Latvia, Lithuania and Slovak Republic – participated in the Erasmus+ project ''Supporting teachers to face the challenge of distance teaching'' (2020-1-LV01-KA226-SCH-094599) during 2021–2023. The aim of the project is to develop a well-functioning digital support system for teachers promoting socio-emotional health and resilience.

In light of the drastic changes in the educational sector brought about by the COVID-19 pandemic, it has been decided to join forces and create tools and specific program that would meet current and future challenges in teachers' profession. There is a lack of scientifically sound research methods and public teacher support programs targeting social and emotional health of educational professionals. It shoud also be mentioned that social and emotional health of teachers is directly related to positive quality of education (Fontana & Abouserie, 1993).

Application of positive psychology at schools has emerged as a new perspective on education, especially in these recent years. Its focus has been on promotion of personal health resources, pupils' and teachers' strengths, as well as on increasing the potential for higher quality of life and well-being at school and beyond. Efforts have been made to identify positive opportunities for pupils and teachers not only in terms of their cognitive capacities, but also in motivation, emotionality, socialization, and self-regulation. At schools, there is a strong tendency to look for strengths of each pupil and teacher and to support their physical and mental health.

Mental health is an integral and essential component of health, one cannot exist without the other (Damodaran & Paul, 2016). According to World Health Organization (2004) health is a state of complete physical, mental and social well-being, not merely the absence of disease or infirmity. Mental health is more than the absence of mental disorders and it is closely connected to physical health (Kolappa et al., 2013). There is no health without mental health. It is a state of well-being, in which an individual realizes own abilities, is able to cope with stress in life, works productively and is capable to make contribution to the community (WHO, 2004).

Social Emotional Health is a sum of positive social and emotional dispositions of a person and it is in line with the Dual-Factor mental health approach. The aim of the Social Emotional Health Model by Furlong is to identify key positive indicators for prediction of mental health (Furlong et al., 2014a). It is based on positive psychology, consists of 4 positive main domains and 12 subscales as psychological indicators of mental health. The belief in self domain consists of self-efficacy, persistence and self-awareness. The belief in others domain comprises family support, institutional support and colleague support. Emotional competences consists of cognitive reappraisal, empathy, self-regulation, and the last domain, engaged living, includes gratitude, zest and optimism. The overall social-emotional health is referred to as covitality.

Many authors have defined resilience (Rutter,1987; Wagnild, 2014). "While these definitions have some differences, there are fundamental similarities among them, including adaptation, balance, competence, determination, optimism and acceptance" (Wagnild, 2014, s. 11).

Wagnild and Young (1993) wrote that resilience is a personality characteristic that moderates the negative effects of stress and promotes adaptation. Wagnild (2014, p. 10) stressed that "our own research has shown that resilience protects against (and reverses) depression, anxiety, fear, helplessness, and other negative emotions, and thus has the potential to reduce their associated physiological effects".

Resilience has also demonstrated potential to positively affect health, life satisfaction, quality of life and to prevent of the onset of depression (MacLeod et al., 2016). This may be considered a very important characteristic in teachers who in the present perform their profession in highly stressful and unfvorable circumstances in a relatively long-lasting pandemic period. In particular, teachers should have resilience at their disposal to help them cope with challenges in their personal and professional lives and thus help them adapt to demanding situations.

In this respect it should be mentioned that resilience which is prone to changes, is a life-long proces of capacity and strength development enabling the individual to face demanding situations, adversity, and to help with problem solution. According to Ungar (2010) in the process of resilience development it is desirable to support the individual ability to direct approach to health-sustaining resources, including opportunities for well-being and positive family, community and cultural interactions in culturally meaningful ways. Support of resilience will be targeted in the second project phase. Currently resilience will be discussed as a dispositional characteristic of teacher personality which enables to identify the current level of adaptation to adversity in the personality – environment system and which is considered a prerequisite for effective future adaptations.

Research aims and objectives

Primary research aim is to examine level of teacher covitality, covitality domains and psychological indicators in the context of resilience in three East-European countries (Latvia, Lithuania, Slovakia) in the pandemic period which often have negatively affected mental health and coping in everyday life. Social-emotional Health Survey – Teachers (SEHS-T, Furlong & Gajdošová, 2018 – not published material for project team) and Resilience Scale RS (Wagniled & Young, 1993, Wagnild, 2016) were used as measures for data collection.

Based on the research aim, following research main questions were formulated:

1. What is the overall level of social emotional health (SEHS-T) of teachers in Latvia, Lithuania and Slovakia?
2. What is the level of teachers' resilience in Latvia, Lithuania and Slovakia?

3. How do the SEHS-T and RS dimensions and their correlations demonstrate a potential problem in the context of the socio-emotional health on a sample of teachers?

We formulate the research objectives:

1. To evaluate level of social-emotional health domains and indicators (SEHS-T) of teachers in Latvia, Lithuania, Slovak Republic and whole sample
2. To evaluate teachers' resilience (RS-14) in Latvia, Lithuania, Slovak Republic and whole sample
3. To identify correlations between SEHS-T and RS-14 of teachers' sample.

Methodology

Methodological background

The first step of the project is devoted to assesment of social-emotional health and resilience of teachers and revealing spheres, domains and dimensions in which teachers need support and development.

The Social-Emotional Health Survey – Teachers (SEHS-T) methodology was adapted in these countries in April 2021. In Slovakia the adaptation of SEHS-T was performed by Eva Gajdosova and Veronika Bisaki with 91 participants – teachers from the primary and secondary schools, in Latvia the adaptation of SEHS-T was performed by Guna Svence and the research assistant Lāsma Lagzdiņa with 50 participanting teachers according to the procedure adopted as a standard in psychology and described in Psychology – International Test Commi.ssion (2010) and in Lithuania the SEHS-T adaptation was done by Ala Petrulyté with 142 teachers.

The adaptation of the Social Emotional Health Survey for Teachers SEHS-T (Furlong & Gajdosova, 2018) took place according to the test adaptation procedure (International Test Commission, 2010). The adaptation procedure took place in several stages:

1. First, the author of the original test – modified SEHS-HE – was asked for permission and it was received from prof. Michael Furlong, California University, Santa Barbara, USA about the adaptation of the test in the cultural environment of Latvian, Lithuanian and Slovak teachers. M. Furlong's permission was received together with the original version of the survey in English.
2. The next step in adapting the test was to translate the survey. A back-and-forth translation approach was used, meaning that one specialist translated from the original language into the target population's language and another group of specialists translated. A group of other translators then compared the two versions, analyzed the resulting

translations and selected those translations that matched the relevant article of the original test in the back translation. If there was no agreement, then the most appropriate version of the articles was chosen (Raščevska, 2005).

3. The pilot research was realized to see the reliability of SEHS-T in Latvia (429 teachers) and Slovakia (91 teachers). These pilot researches and their results confirmed the high reliability of the method SEHS-T in both of these countries (Cronbach's Alpha 0.890 and 0.930). All data were processed in the statistical program IBM SPSS 21 version.

4. The same procedure was done with the Resilience Scale. The author dr. Gail Wagnild. The Resilience Center, Montana, USA gave the permission for 12 months to use the Resilience scale RS and RS-14 in this research.

Participants

The research sample includes 1200 participants – teachers, 400 teachers from every participating country Latvia, Lithuania, Slovak Republic.

3 selection criteria for recruitment of 400 teachers from each of these 3 countries were used:

1) targeted partner schools with which there have been other forms of co-operation. Principals were directly approached based on trust and confidence that the majority of teachers will take part in the survey. The partner schools were divided according to the second principle;

2) educational institutions of different sectors (standard primary and secondary schools, high schools – arts and crafts, technical schools, countryside and city schools, small schools and large schools, state);

3) principle of random sampling is chosen.

Descriptive analysis shows, that 1054 (87. 8%) female teachers and 146 (12.2%) male teachers participated in the research. In Latvia there were 96.5% female teachers, in Lithuania 77.3% female teachers and in Slovak Republic 89.8% female teachers.

79 (6.6%) of teachers were 30 years old and younger, 242 (20.2%) teachers 31–40 years old, 389 (32.4%) teachers 41–50 years old, 366 (30.5%) teachers 51–60 years old and 124 (10.3%) teachers 61 years and older.

The research sample confirmed the prevalence of female teachers and teachers older than 40 years in all 3 countries.

Measures

Social-Emotional Health Survey-Teachers SEHS-T

Social Emotional Health Survey-Teachers (SEHS-T; Furlong & Gajdošová, 2018 – not published material for project team) is a modified version of the Social-Emotional Health Survey–Higher Education (SEHS-HE; Furlong et al., 2017). It has been modified in 6 items with the agreement of its author Furlong for the assessment of teacher social-emotional health.

The SEHS-T measures the covitality latent trait. Covitality refers to the co-occurrence of positive, healthy traits. It embodies the "…synergistic effects of positive mental health resulting from the interplay among multiple positive-psychological building blocks" (Furlong et al. 2014a, p. 3).

Social-Emotional Health Survey-Teachers (SEHS-T) assesses the level of covitality and its 4 domains – belief in self (BIS), belief in others (BIO), emotional competence (EC), engaged living (EL). SEHS-T has 12 subscales representing unique positive social-emotional health constructs associated with four general positive social-emotional health domains. The first domain, belief-in-self, consists of three subscales grounded in constructs from the social-emotional learning (SEL) and self-determination theory literature: self-efficacy, persistence and self-awareness (e. g., Bandura et al. 1996). The second domain, belief-in-others, has three subscales derived from constructs found in the resilience literature: family support, institutional support and colleague support (e. g., Larson 2000). The third domain, emotional competence, consists of three subscales based on constructs drawn from the SEL: cognitive reappraisal, emotional regulation, empathy and self regulation (e. g., Greenberg et al. 2003). Engaged living, the final domain, comprises three subscales grounded in constructs derived from the positive psychology literature: gratitude, zest, and optimism (e. g., Furlong et al., 2014b).

SEHS-T contains 48 items rated on a six-point scale with covitality score ranging between 48–288. Based on the covitality score results are interpreted in 3 covitality levels: low, moderate and high (see Table 1).

Table 1. Scoring of SEHS-T

	High level	Moderate level	Low level	Min.	Max.
SEHS-T	> 208	128–207	< 127	48	288
SEHS-T indicators	> 52	32–51	< 31	12	72
SEHS-T indicators	> 18	11–17	< 10	4	24

Resilience Scale (14 or 25 versions)

Resilience Scale (RS; Wagnild & Young, 1993, Wagnild, 2016) is a measure for assessment of individual resilience in two dimensions: personal

competence and acceptance of self. It consists of 25 items which are rated on a Likert-type scale from 1–7.

Resilience Scale RS scores range from 25 to 175. Scores greater than 145 indicate moderately high and high resilience, scores from 116 to 144 indicate moderately low to moderate levels of resilience, and scores of 115 and below indicate low resilience (Wagnild, 2016, p. 82). Resilience Scale RS was used separately in Latvian sample and in Slovak sample.

Resilience short version-Scale RS-14 scores from 14 to 98. Scores greater than 82 indicate moderately high and high level of resilience, scores from 65 to 81 indicate moderately low to moderate resilience, and scores of 64 and below indicate low resilience. Short version RS-14 was used in the whole sample (see Table 2).

Table 2.   Scoring of RS-25 and RS-14 (Wagnild, 2016)

	Moderately high and high level	Moderately low to moderate level	Low level	Min.	Max.
Resilience Scale RS	> 145	116–144	< 115	25	175
Resilience Scale RS-14	> 82	65–81	< 64	14	98

RS has demonstrated very good validity and reliability which were repeatedly confirmed with various age and professional samples (Ahern et al., 2006; Wagnild, 2009). Results of several studies showed that RS demonstrated stability over time: test-retest reliability within 3 months was $r = .90$ (Portzky, Wagnild, et al., 2010).

Series of correlational and regression analyses were conducted using confirmatory factor analysis to assess factor structure of the RS (Wagnild & Young, 1993) at the Department of Psychology, Faculty of Arts, Comenius University in Bratislava (Mesarošová, Hajdúk, Heretik, 2014). RS shows good psychometric properties including acceptable reliability (Cronbach Alpha = 0.818).

Data Analysis

Data were analysed using the IBM SPSS 21. The internal consistency of questionnaires was verified using Cronbach's alpha coefficient. Subsequently, parametric analysis of variance (ANOVA), Student t-test and non-parametric Kruskal-Wallis and Mann-Whitney U test were conducted. Substansive significance of differences was assessed based on η^2. Histograms were used to show normality. The correlations between the variables were examined using the Spearman correlation coefficient.

Results

Covitality of Latvia, Lithuania and Slovak Republic teachers
Covitality level

Average score of overall covitality level in teachers from Latvia, Lithuania and Slovakia is $M = 230.34$ (theoretical score range: 48–288, empirical range: 69–288, SD 24.89, minimum 69.00, maximum 288.00), what indicates high covitality level. The highest score was found for Slovak Republic teachers ($M = 238.65$), teachers from Lithuania ($M = 230.51$) and Latvia ($M = 221.54$) scores slightly lowed. There is significance of differences among countries, with medium eta squared/effect size ($p < 0,001$, $\eta^2 = .09$) (see Table 3, Figure 1 and Table 4).

Table 3. Teacher covitality per country (Slovak Republic, Latvia, Lithuania and total sample)

Country	Minimum	Maximum	Mean	Std. Deviation	Median
Slovak Republic	130.00	288.00	238.65	24.75	242.00
Latvia	131.00	275.00	221.54	21.96	222.00
Lithuania	69.00	287.00	230.51	24.85	233.00
Total	69.00	288.00	230.34	24.89	232.00

Independent-Samples Kruskal-Wallis Test Summary	
Total N	1185
Test Statistic	110.256a
Degree Of Freedom	2
Asymptotic Sig. (2-sided test)	.000
η^2	.09

Note. a. The test statistic is adjusted for ties.
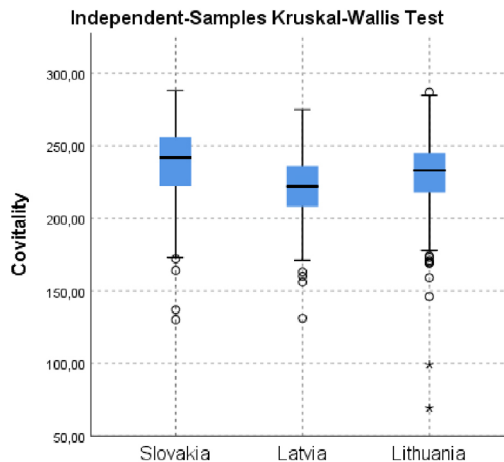
Figure 1. Teacher covitality in Latvia, Lithuania and Slovak Republic

Table 4. Teacher SEHS-T domains BIS, BIO, EC, EL in Slovak Republic, Latvia, Lithuania

Country		BIS	BIO	EC	EL
Slovak Republic	Minimum	19.00	25.00	36.00	16.00
	Maximum	72.00	72.00	72.00	72.00
	Mean	59.65	59.51	60.66	58.84
	Std. Deviation	7.22	8.14	6.53	8.04
	Median	60.00	61.00	61.00	60.00
Latvia	Minimum	18.00	26.00	22.00	30.00
	Maximum	72.00	70.00	69.00	68.00
	Mean	53.16	55.32	57.10	55.91
	Std. Deviation	6.66	6.36	5.84	6.07
	Median	54.00	56.00	57.00	56.00
Lithuania	Minimum	17.00	15.00	19.00	18.00
	Maximum	72.00	72.00	72.00	72.00
	Mean	58.53	55.67	58.35	57.95
	Std. Deviation	6.51	8.38	6.30	8.00
	Median	59.00	57.00	59.00	59.00
Total	Minimum	17.00	15.00	19.00	16.00
	Maximum	72.00	72.00	72.00	72.00
	Mean	57.11	56.83	58.71	57.59
	Std. Deviation	7.36	7.90	6.39	7.54
	Median	58.00	58.00	59.00	58.00

Based on the results of post-hoc analysis significant differences were found between individual countries (Latvia – Lithuania, Latvia – Slovak Republic, Lithuania – Slovak Republic.

Teacher Belief-in-self (BIS)

BIS in teachers in participating countries is at high level ($M = 57.11$). The highest level was found in Slovak Republic teachers ($M = 59.65$), only slightly lower level of BIS was found in Lithuania teachers ($M = 58.53$) and lower level, however still in the high range, was found in Latvia teachers ($M = 53.16$) (see Figure 2).

Differences in BIS in the three participating countries are statistically significant ($p < 0.001$, $\eta^2 = .16$). Results from comparative analysis show that while there are significant differences in BIS between Lithuania – Slovak Republic and Lithuania-Latvia ($p < 0.001$), there are no significant differences between teachers from Latvia and Slovak Republic in BIS ($p = .05$, $\eta^2 = .1$)
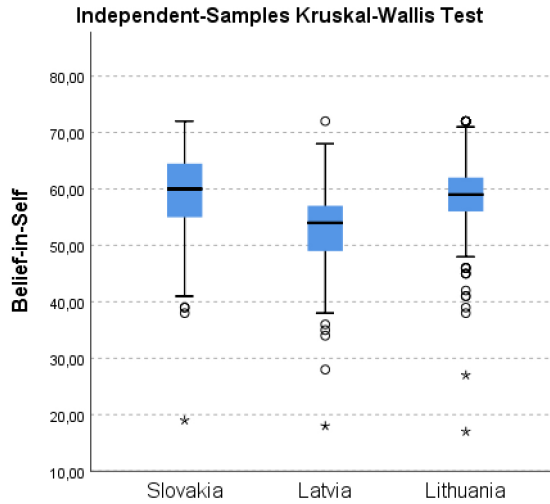
Figure 2. Belief-in self (BIS)

Teacher Belief-in-others (BIO)

Differences in belief-in-others (BIO) among the countries are statistically significant with medium effect size ($p < 0.001$, $\eta^2 = .07$). The average overall score in BIO is the lowest compared to other covitality domains ($M = 56.83$). Comparative analysis revealed that Lithuanian ($M = 55.32$) and Latvian ($M = 55.67$) teachers scored in this domain lowed than Slovak Republic teachers ($M = 59.32$) (see Figure 3).
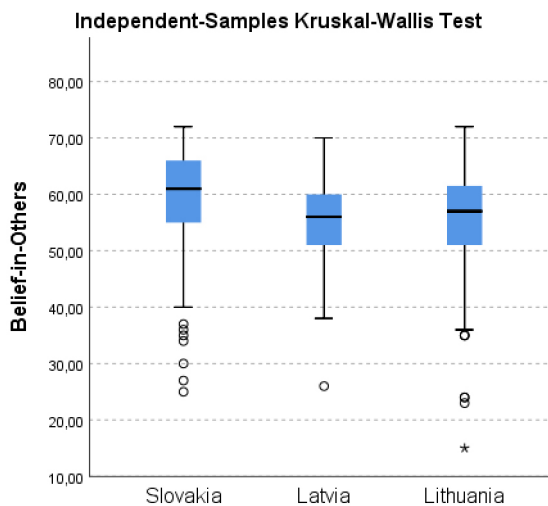
Figure 3. Belief-in-others (BIO)

While the differences between Slovak Republic and Lithuania ($p <$ 0.001) and Slovak Republic and Latvia ($p < 0.001$), are statistically significant, there is no significant difference between Lithuania and Latvia in BIO ($p = .082$, $\eta^2 = .246$).

Teacher Emotional Competence (EC)

Teacher level of EC in participating countries was found to be high ($M = 58.71$). Out of all covitality domains this is the domain where the teachers scored the highest.

Repeatedly Slovak teachers showed higher level of EC compared to the teachers from the other two countries ($M = 60.66$). However only slightly lower level of EC was found in Latvian teachers ($M = 58.35$) and Lithuanian teachers ($M = 57.10$) respectively (see Figure 4).
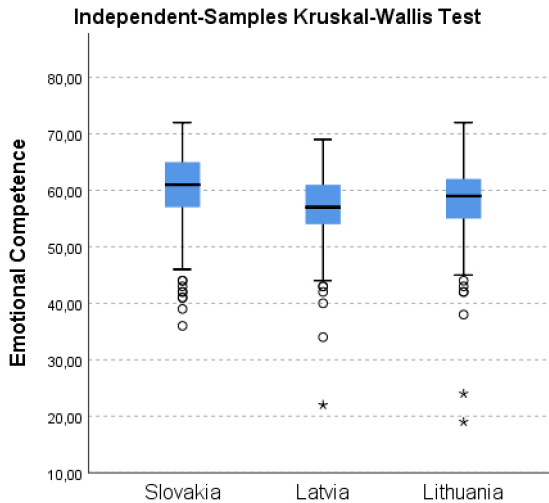
Figure 4. Emotional Competence (EC)

Differences among the countries in the domain EC are statistically significant ($p < 0.001$, $\eta^2 = .06$), between Slovak Republic and Lithuania ($p < 0.001$), Slovak Republic and Latvia ($p < 0.001$) as well as between Lithuania and Latvia however at $p = .002$, $\eta^2 = .007$).

Teacher Engaged Living (EL)

The average score in the domain EL is $M = 57.59$. Differences between the countries are stastistically significant ($p = .001$, $\eta^2 = .04$).

Lower score was found for Lithuanian teachers ($M = 55.91$), followed by Latvian teachers ($M = 57.95$) while Slovak Republic teachers scored

higher (M = 58.84) (see Figure 5). While there is a stastistically significant difference between Lithuania and Latvia ($p < 0,001$) and Lithuania and Slovak Republic ($p < 0,001$) in EL, between Slovak Republic and Latvia no stastistically significant difference was found ($p = .134$, $\eta^2 = .401$).
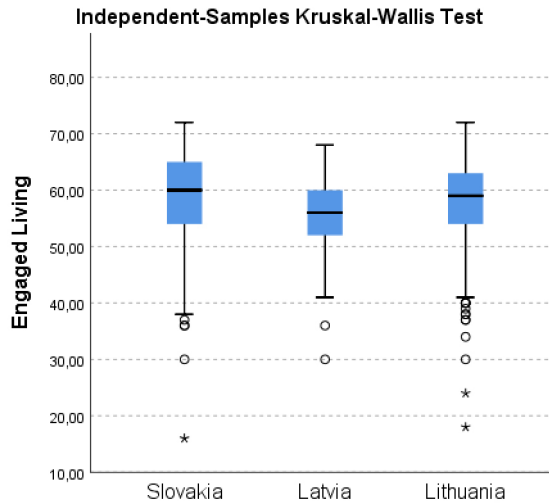
Figure 5. Engaged Living (EL)

Psychological indicators of teacher SEHS-T covitality

Several psychological indicators in SEHS-T, self-efficacy, cognitive reppraisal, empathy, selfregulation, gratitude, optimism, were found to be at high level (> 18) in participating countries.

However other covitality indicators that were at overall high level, reached only moderate level in individual countries. These are: persistance (Latvia $M = 17.00$), self-awareness (Latvia $M = 17.84$), institutional support (Lithuania $M = 17.46$), colleague support (Lithuania $M = 17.88$), zest (Slovak Republic $M = 17.68$) (see Table 5).

Table 5. Teachers' psychological indicators of SEHS-T covitality in Latvia, Lithuania and Slovak Republic

Country		Self-Effi-cacy	Persis-tence	Self-Awareness	Family Support	Institu-tional Support	Col-league Support	Cognitive Repprais-al	Empathy	Self-Reg-ulation	Gratitude	Zest	Opti-mism
Slovak Repub-lic	Min.	6.00	5.00	6.00	4.00	5.00	7.00	11.00	12.00	7.00	5.00	4.00	4.00
	Max.	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00
	Mean	20.03	19.02	20.59	20.97	18.11	18.53	21.56	20.58	22.70	18.45	17.68	20.42
	Std. Deviation	2.84	3.09	2.62	3.54	3.58	3.34	2.39	2.42	2.10	3.67	3.56	3.86
	Median	20.00	19.00	21.00	22.00	19.00	19.00	22.00	21.00	24.00	19.00	18.00	21.00
Latvia	Min.	4.00	5.00	6.00	9.00	8.00	8.00	6.00	8.00	10.00	11.00	8.00	8.00
	Max.	24.00	24.00	24.00	24.00	24.00	24.00	23.00	24.00	24.00	24.00	24.00	24.00
	Mean	18.33	17.00	17.84	17.86	18.52	19.57	18.30	19.23	18.79	18.66	18.45	18.94
	Std. Deviation	2.66	2.81	2.55	2.85	2.52	2.07	2.52	2.38	2.38	2.13	2.36	2.27
	Median	19.00	17.00	18.00	18.00	19.00	20.00	19.00	20.00	19.00	19.00	19.00	19.00
Lithua-nia	Min.	8.00	5.00	4.00	4.00	6.00	8.00	5.00	5.00	4.00	5.00	4.00	4.00
	Max.	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00
	Mean	19.53	19.26	19.74	19.42	17.46	17.88	20.24	20.23	21.57	18.35	18.04	18.79
	Std. Deviation	2.39	2.80	2.55	3.91	3.12	3.12	2.50	2.48	2.55	3.50	3.45	4.02
	Median	20.00	20.00	20.00	20.00	18.00	18.00	20.00	21.00	22.00	19.00	19.00	20.00
Total	Min.	4.00	5.00	4.00	4.00	5.00	7.00	5.00	5.00	4.00	5.00	4.00	4.00
	Max.	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00
	Mean	19.30	18.42	19.39	19.42	18.03	18.66	20.03	20.01	21.02	18.49	18.05	19.38
	Std. Deviation	2.73	3.07	2.82	3.69	3.13	2.98	2.81	2.49	2.87	3.18	3.19	3.55
	Median	20.00	19.00	20.00	20.00	18.00	19.00	20.00	20.00	21.00	19.00	19.00	20.00

Teachers SEHS-T measures frequency analysis

Frequency analysis of SEHS-T and teacher responses in involved countries provided interesting results identified through frequency analysis of item responses of both measures.

Indicators in the domain BIO, i.e. perceived family support $M = 19.42$), Institutional support (18.03) and colleague support (18.66), which are significant importance during pandemic times, were examined. Of interest was in particular the question, whether and to what extent teachers in these psychologically demanding times perceive support of the school institution. Results per country differ – in Slovak Republic only one third of teachers (35.6%) reported sense of belonging to school and 12.8% reported that they perceived very low. Similar results were found for Latvia (32.1% rated sense of belonging as high, 10.8% as low. In Lithuania results for this item differ – 60.8% of teachers rated institutional support as high.

Different results were found for perceptions of family social support. This indicator has been rated very highly in all indicator items by Slovak and Latvian teachers (70–80%). In Lithuania, lower ratings were found for the item "In my family we make decision together as one team" (one third, 29.3% rated this item high – scale responses 5.6, while 10.6% low – scale responses 1, 2).

Lower ratings were found in the domain EL for individual indicators – gratitude ($M = 18.49$), zest ($M = 18.05$), optimism ($M = 19.38$), which are at moderate to high level. Of importance are teacher responses to individual items, e. g. only one third of Slovak teachers (38,3%) and one third of Latvian teachers (32,1%) expected that they will feel joyful, happy during the day (scale responses 5, 6). Moreover, only half of teachers rated indicator, enthusiasms' high (48.8%). This indicates that several areas for intervention have been identified.

The weaknesses in relation with the mental health of teachers are: belief in others (BIO): (institutional support, colleague support) and engaged living (EL): gratitude and zest. The positive strengths in relation with the mental health of teachers are: emotional competence (EC): self-regulation, cognitive reappraisal, empathy.

Resilience of teachers

Overall level of resilience and its dimensions in Lithuanian, Latvian and Slovak Republic teachers

Resiliencie Scale R-14 demonstrated very good internal consistency $\alpha = 0.860$. Inter-item correlations were between $r = .333$ to $r = .652$. During item analysis no items with low inter-item correlation were identified ($r < .200$). Only for item "I usually take things in stride" higher correlation $r = .333$ was found.

Results confirmed that participants scored at moderate level in resilience ($M = 76.30$), i. e. Lithuanian ($M = 72.93$), Latvian ($M = 75.04$) and Slovak Republic ($M = 80.92$) teachers reported only moderate level of resilience (see Table 6). There are however significant differences in resilience among the countries ($p < 0.001$, $\eta^2 = .10$). Similar differences were found for both resilience dimensions, Personal Competence ($p < 0.001$, $\eta^2 = .99$) and Acceptance of Self and Life ($p < .001$, $\eta^2 = .13$).

Table 6. Teachers Resilience RS 14

Country	Minimum	Maximum	Mean	Std. Deviation	Median
Slovak Republic	15.00	98.00	80.92	11.06	83.00
Latvia	44.00	97.00	75.04	9.22	75.50
Lithuania	14.00	98.00	72.93	13.05	73.50
Total	14.00	98.00	76.30	11.71	78.40
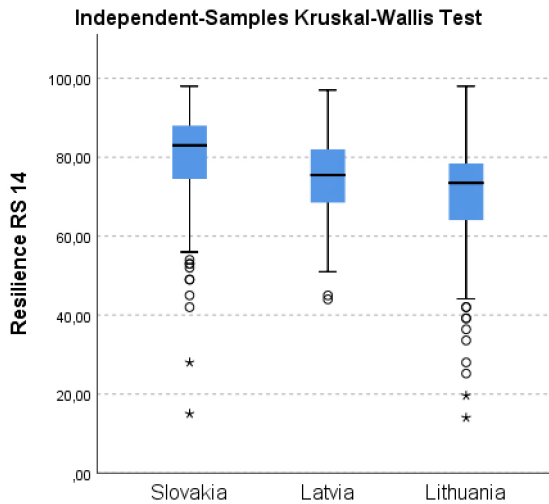
Figure 6. Resilience RS-14

While a statistically significant difference in the level of resilience was found between Slovakia and Lithuania ($p < 0.001$) and between Slovak Republic and Latvia ($p < 0.001$), no significant difference was found between Latvia and Lithuania (p= .103, $\eta^2 = .309$).

Teachers Resilience freqency analysis

Analysis of teacher responses in Resilience Scale revealed that majority of Slovak teachers (84%) provided high ratings (responses 6, 7) for the item "My life has meaning". Slovak (77.8%) and Lithuanian teachers (70.1%) provided high ratings (responses 6, 7) for the item "I am able to depend on myself more than anyone else", as well as the item "I keep interested in things" (67% and 63.3%).

However, limits were found in both samples in the item "I usually take things in stride", for which high ratings (6, 7 on a seven-point scale) were provided only by 39.8% of Slovak teachers and 49.5% of Lithuanian teachers.

Limits were also identified in the extent of energy and enthusiasm for requested activities "I have enough energy to do what I have to do". 39% of Slovak teachers and 66% of Lithuanian teachers provided negative ratings for this item. Teachers also reported problems with solving of difficult situations "When I am in a difficult situation, I can usually find my way out of it". 37% of Slovak teachers and 68% of Lithuanian teachers responded to this item with low responses (5 and lower). One third of teachers in both countries (SR 29.5%, Lo 36.8%) does not acknowledge problems "I take things one day at a time", while two thirds are able to acknowledge problems, in particular 25% of Slovak and 15% of Lithuanian teachers very significantly.

Corellations between teachers Resilience and SEHS-T Covitality

Significant positive correlation were found between teachers' resilience and covitality ($r_s = ,.679^{**}$, p = ,000) as well as resilience and four covitality domains (BIS $r_s = .579^{**}$, BIO $r_s = .528$, EC $r_s = .580^{**}$, EL $r_s = .615^{**}$).

Results indicate that especially emotional competence (EC) and engaged living (EL) are associated with resilience. Correlations between resilience and 12 social-emotional indicators (subscales) are between $r_s = .542^{**}$ to $r_s = .400^{**}$. Strong positive correlation was found between resilience and zest ($r_s = .542^{**}$) and optimism ($r_s = , 528^{**}$), as well as between resilience and self-efficacy ($r_s = ,539^{**}$) and self-awareness ($r_s = 503^{**}$) (see Table 7).

Results indicate that especially emotional competence (EC) and engaged living (EL) are associated with resilience.

Table 7. Correlations between teachers Covitality and Resilience

SEHS-T		Resilience RS 14
Covitality	Correlation Coefficient	.679**
	Sig. (2-tailed)	.000
Belief-in-Self – domain 1	Correlation Coefficient	.579**
	Sig. (2-tailed)	.000
Belief-in-Others – domain 2	Correlation Coefficient	.528**
	Sig. (2-tailed)	.000
Emotional Competence – domain 3	Correlation Coefficient	.580**
	Sig. (2-tailed)	.000
Engaged Living – domain 4	Correlation Coefficient	.615**
	Sig. (2-tailed)	.000
Self-Efficacy	Correlation Coefficient	.539**
	Sig. (2-tailed)	.000
Persistence	Correlation Coefficient	.441**
	Sig. (2-tailed)	.000
Self-Awareness	Correlation Coefficient	.503**
	Sig. (2-tailed)	.000
Family Support	Correlation Coefficient	.400**
	Sig. (2-tailed)	.000
Institutional Support	Correlation Coefficient	.457**
	Sig. (2-tailed)	.000
Collegaue Support	Correlation Coefficient	.412**
	Sig. (2-tailed)	.000
Cognitive Reappraisal	Correlation Coefficient	.452**
	Sig. (2-tailed)	.000
Empathy	Correlation Coefficient	.451**
	Sig. (2-tailed)	.000
Self-Regulation	Correlation Coefficient	.418**
	Sig. (2-tailed)	.000
Gratitude	Correlation Coefficient	.426**
	Sig. (2-tailed)	.000
Zest	Correlation Coefficient	.542**
	Sig. (2-tailed)	.000
Optimism	Correlation Coefficient	.528**
	Sig. (2-tailed)	.000

Note. ** Correlation is significant at the 0.01 level (2-tailed).

Discussion

In pandemic period the mental health of population starts to be of significant focus of European, state and government authorities. Mental health with an emphasis on the social-emotional health of students and teachers at schools becomes of particular interest. Only teachers with good mental health can support and improve mental health of their students in every type of school.

The research aim of the present study was to determine the level of social-emotional health and resilience of teachers and to verify whether there are associations between social-emotional health and resilience. Measures used in this study were Social-Emotional Health Survey for Teachers which was used for the first time in a national and international context, and also the Resilience Scale. The internal consistency of the research methods was very satisfactory. The research was quantitative and correlational with comparative questions because due to the examination of associations between selected variables.

The international research in the East-European countries Latvia, Lithuania and Slovak Republic has confirmed that the level of socio-emotional health of teachers is high, both overall and in its key domains. The overall resilience of teachers was found to be between high and moderate level, the same applied to individual resilience dimensions.

The teachers' socio-emotional health was positively correlated with resilience. The correlations between covitality and its key domains and resilience are on very high level, especially the EL Engaged living of teachers which is the most important predictor of mental health of teachers in schools. Also self-efficacy, cognitive reappraisal, zest and optimism were highly positively correlated with resilience.

Findings on associations between social-emotional health indicators and resilience confirmed that there are several psychological constructs associated with resilience. Teachers, in the process of coping, use various internal and external resources to overcome adversity. Important protective factors on individual level are self-esteem, positive self-concept and high self-efficacy (Everall, Altrows, Paulson, 2006; Fergus, Zimmerman, 2005). Self-esteem which is positively associated with resilience and personality (Mesárošová et al., 2014; Hayter & Dorstyn, 2014), is also positively associated with an active process of coping (Daigneault et al., 2013, Arslan, 2016) and engagement in family and community environment (Dumont & Provost, 1999).

Results from the present study indicate significant associations between covitality and resilience in the participating sample and are thus in line with previous research (Furlong et all.,2013, Boman et al., 2017, Telef & Furlong, 2017). Moreover, significant associations were confirmed for covitality and

engaged living, emotional competence, as well as psychological indicators of self-efficacy, self-awareness, empathy, zest and optimism.

The study showed preliminary good psychometric characteristics of the used tools, which allow us to use these tools in project second phase.

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DIGITAL STORYTELLING AS A RESOURCE FOR REDUCING STUDENTS' EMOTIONAL BURNOUT

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ABSTRACT

The emotional well-being of students has been identified as an important learning dimension even before the COVID-19 pandemic, as it increases students' academic and non-academic achievement, as well as promotes the growth of students' personalities. In higher education, the COVID-19 pandemic in the context of emotional well-being has identified significant risks from two points of view: the first is the abrupt termination of on-the-job training, and the second is the remote learning process. Thus, the COVID-19 pandemic has become an extraordinary and challenging pedagogical situation for both educators and students. This situation is characterized by both isolation and uncertainty in the implementation of the learning process, as well as exponentially increased students' independent workload and uncertainty in the requirements, which are pretexts for students' emotional burnout and dysfunctional emotional well-being in digital learning settings. The aim of this study is to identify the benefits of digital storytelling as a method of pedagogical support to reduce students' emotional burnout and promote emotional well-being. This article presents the results of a case study in one Latvian higher education institution. For four months, each week, 12 participants shared stories on topics relevant to them. Transcripts of each session were encoded and analysed using the high-quality data processing program NVivo 12. Analysing the obtained data, categories were identified that describe the process and benefits of digital storytelling as a method of pedagogical support. It is concluded that digital storytelling promotes the exchange of information, collaborative learning, understanding the meaning of one's problems, self-efficacy, reflexivity, expands the repertoire of emotional burnout management methods, therefore it is considered a resource in reducing emotional burnout.

Keywords: COVID-19, digital storytelling, emotional burnout, higher education, NVivo, pedagogical support, well-being

Introduction

The global pandemic caused by the 2019 coronavirus (COVID-19) has dramatically changed people's daily and professional lives. Solving the various problems related to the COVID-19 pandemic, emotional burnout

has become a chronic psychological and physiological condition among the working population of all professions. Numerous studies have been and are being conducted to investigate its prevalence, factors, and possible solutions, as the COVID-19 pandemic both created new stress triggers and brightly illuminated those people chose to psychologically ignore before the pandemic. Thus, a new sum of individual triggers was formed. As the world approaches the third year of the pandemic and the unpredictable post-pandemic situation, a massive set of stressors has become a permanent and uncertain emotional background to everyday life. With its presence, this emotional background increases the risk of burnout for everyone. This is one of the reasons why, in modern theoretical concepts, well-being becomes the subject of research in many fields (Zīsberga, 2022). Some professions are more susceptible to burnout and its consequences than others. These are professions whose professional life is related to working with people, so educators and medical practitioners are in a zone of high risk of emotional burnout. The discussion of the configuration of polar opinions about medical staff during the pandemic was actively and relentlessly maintained in media and people's narratives, but the discussion about the emotional state of teachers only sporadically outlined in the public discourse. As another particularly sensitive category to emotional burnout in the context of a pandemic, are the students of higher education institutions. A combination of different factors is mentioned as causes of emotional burnout for students: a decrease in the number of classes, a disproportionate increase in workload, a decrease in academic performance, as well as thoughts about early school leaving (Aucejo et al., 2020). At the beginning of the pandemic, the study process was characterized by both isolation and uncertainty in the implementation of the study process, as well as exponentially increased students' independent workload and uncertainty in the requirements that formed the background for students' emotional burnout and dysfunctional emotional well-being in general. Therefore, the idea and topicality of this study was determined by the situation when students in the first lockdown of the COVID-19 pandemic, due to uncertainty and increased workload, needed emotional support, i.e. students asked to provide an emotional support group. Thus, opportunities were sought to solve the topical problem of students. This situation brought up significant early school leaving signals, as emotional burnout contributes to the decision to drop out. Early school leaving, on the other hand, marks significant risks in both the individual development and the social sphere (Gintere, 2022). Thus, it can be concluded that the COVID-19 pandemic had become an unusual and challenging pedagogical situation for both educators and students. In order to solve the situation in pedagogical practice, the idea of the research was formulated and

according to it the aim of the research was determined: to identify the benefits of digital storytelling as a method of pedagogical support to reduce students' emotional burnout.

Dimensions of using storytelling in higher education

Summarizing and analysing theoretical insights of Sheafer (2017), Smeda et. al. (2012), Goodman and Newman (2014) it can be concluded that storytelling has three of the most commonly used dimensions in the education sector.

First dimension. Digital storytelling as a method of teaching and learning. Digital storytelling can be used as a learning method in several ways – personal storytelling, storytelling of past events, or telling a specific learning topic. Digital storytelling is an important tool to engage and motivate students to create their own stories. Their formation engages students in a meaningful learning process, promotes motivation and reflection on the deep learning process, integrates new knowledge as a continuation of previous one. In-depth learning takes place because in stories knowledge and experience is tested with logic and reasoning.

The second dimension. Digital storytelling as a technique for personality growth. Digital storytelling links the learning process and emotions of higher education, thus promoting self-directed learning and personal initiative in both engagement and learning. It is through stories that experience acquires meaning and through reflection and interpretation that knowledge is constructed. Interaction in the process of storytelling allows mutual learning and encourages human development. In this case, learning takes place when the reflection on the experience has been transformed into a logical, meaningful story shared with others.

The third dimension is digital storytelling as a pedagogical support technique. Personal stories that reveal personal or emotionally significant details can contribute to a level of support and mutual respect. Nowadays, it is emphasized that it is not so important – to tell a story about a topic from a safe distance (for example, a book, a film, a podcast), much more important is the opportunity to explore an authentic, true life experience. So, digital storytelling is made up of human experience stories. Their goal is cognitive reconstruction of events, cognitive problem solving in order to change dysfunctional behaviour. As part of this study, the same dysfunctional behaviours associated with emotional burnout were observed. Storytelling improves one's emotional burnout coping skills and promotes a range of coping strategies, as well as promotes a healthy personal view of life's challenges. Digital storytelling also reduces the effects of stress, anger and anxiety, ventilates disturbing emotions, promotes emotional health, stabilizes traumatic experiences, creates healing experiences, promotes self-expression

and mutual learning. The story gives people the opportunity to reflect on their experience, to understand and accept how the experience has shaped their own world and how the person perceives it. In turn, Holloway and Freshwater (2007) emphasize that storytelling allows people to recognize their vulnerability, share their emotions and experiences, and have a voice that can be heard. Storytelling promotes a sense that a person can lead complex emotions, and can also be used as a coping strategy (Holloway & Freshwater, 2007), while storytelling links the present with the past and the future (Liehr & Smith, 2014). In addition, storytelling is a technique for conducting targeted dialogue between generations, thus providing a channel for emotionally close communication and self-awareness (Liehr & Smith, 2014). This theoretical knowledge clearly positions the teacher in the educational process as a person of emotional support. In turn, the role of the teacher and pedagogical mastery in higher education is outlined as an essential part of the pedagogical process (Medne & Jansone Ratinika, 2019), as well as marks the teacher as a determining human resource in the implementation of civic education (Medne, et al., 2021).

Methodology

Type of study

For the empirical study, an action study was selected, implemented in the interpretative paradigm. This choice is supported by the arguments that the objectives of such research themes include both addressing different challenges and improving the professionalism of practitioners, as well as setting an educational target for such a design, which is the most important focus in this study. The use of this design allows the study participants to better understand themselves in relation to the discussed topic and the spoken meanings (Koshy et al., 2010). Qualitative research design is suitable for research in the educational sciences (Lodico et al., 2010), because it allows to obtain information about the pedagogical process and its phenomena from both the students' and teachers' perspectives (Thanh & Thanh, 2015), learning their experiences, attitudes, interpretations, concepts, feelings and opinions (Lodico et al., 2010). The idea of qualitative research is to discover the world's vision and experience in an inductive way. The researcher and the participants of the research collaborate so that as a result the researcher can reconstruct the understanding or conceptualization of the world of the participants of the research.

Study procedure

The research was implemented in one higher education institution in Latvia. The intervention procedure was as follows: for four months, every

week, 12 participants shared stories on topics that were relevant to them. Sessions were performed remotely via the Zoom platform. The stories of each session were transcribed and the transcripts were encoded. A total of 216 transcripts were obtained and analysed using the qualitative data processing program NVivo 12.

The obtained data were analysed in two stages:

Stage 1. Transcripts were imported into NVivo 12 program and analysed using qualitative and quantitative context analysis. The choice of the data management program NVivo in the study was determined by the argument that it increases the validity of the qualitative study (Siccama & Penna, 2008). Transcript data processing and analysis was implemented in the following order: (1) preparation of transcripts in Microsoft Word; (2) import of transcripts into NVivo file; (3) open coding in NVivo file (indexing motifs identified), assigning the code to the respective transcript text fragment of the interview; (4) interpretation of the content implemented based on the code structure created in the context analysis. A study by Schaufeli et al. (2020) has been selected to identify the codes. The choice is justified by the design of this study, which conceptualizes emotional burnout, as well as by the meta-analysis of the most famous instruments for measuring emotional burnout and their effectiveness. The authors of the study refer to this set of burnout measurement instruments as the gold standard for burnout research (Schaufeli et al., 2020). In total, six codes were identified: exhaustion, emotional disorders, mental distancing, cognitive disorders, psychological complaints, psychosomatic complaints.

Stage 2. To check the reliability of the change in emotional burnout signs, it was tested on sample sets related to the Student's t-test.

Research ethics

The study was conducted in accordance with the ethical aspects of the research; informed consent was obtained from the participants of the study. Participation in the digital storytelling group was voluntary. Study participants were informed that they were entitled to stop participating in the group at any time. Informed consent was once again reviewed after two months, as the study's specific context and unpredictable outcomes in sensitive populations may alter the respondent's opinion. At the end of the study, the Member checking method was implemented (Koelsch, 2013). Confidentiality was respected in the study: transcripts were coded during the transcription process and deleted after coding.

Respondents

The respondent group consisted of members of the storytelling group. The group was set up at the request of the participants and participation in

it was voluntary. Participation in the group was started by 12 students and concluded by 12 students.

Results

In order to analyse the content of emotional burnout components and their frequency of their use in transcripts, all six codes were identified in the NVivo program during open coding: exhaustion, emotional disorders, mental distancing, cognitive disorders, psychological complaints, psychosomatic complaints. In total, the following range of codes was obtained (Table 1): the largest number of codes consists of psychological complaints ($n = 451$), the smallest – mental distancing (195). The frequency with which the codes are used indicates how widely and extensively each code is decoded in the interviews, also implicitly indicating what is relevant or important to the respondent.

Table 1. Total number of codes in all transcripts

Code	Total number of codes
Psychological complaints	451
Cognitive disorders	345
Exhaustion	322
Emotional disorders	291
Psychosomatic complaints	245
Mental distancing	195

The respondents' situational vision and self-esteem are demonstrated in the content of the codes:

Exhaustion – *I feel mentally tired in my studies and work; everything I do requires a lot of effort; after a day's work I find it hard to recover my energy, I feel physically tired in my studies and work; when I get up in the morning, I lack energy to start a new day; I wake up tired; it's hard to manage my work; I get tired quickly; at the end of the day I feel mentally exhausted and emptied; I have no strength to open my mouth and speak up and that's even when I haven't really done anything.*

Mental distancing – *I find it hard to find enthusiasm; I don't think much about what I'm doing and I... I'm on autopilot; I feel a lot of reluctance towards what we have to do; I feel indifferent to my work; I'm cynical about what my work means to others.*

Cognitive impairment – *I can't concentrate; I find it hard to think clearly; I'm forgetful and distracted; I make mistakes in what I do because my thoughts are busy with other things.*

Emotional disorders – *I can't control my emotions, I yell at my parents all the time; I don't know myself in the way I emotionally react; everything annoys me if things don't work out as I intended; I suddenly grieve without knowing why; I can inadvertently exaggerate.*

Psychological complaints – *I have trouble falling asleep; I wake up at night and cannot fall asleep; I am very worried about everything; I feel tense; I feel like something will happen all the time; I have had panic attacks that hadn't happened before; I am disturbed by noise.*

Psychosomatic complaints – *I have palpitations; I have chest pain; I have stomach pain; I have constipation; I have diarrhea and not only before exams; I don't want to eat at all; I eat all the time, as if I lived in a fridge; I often have headaches; I often get ill.*

When comparing the number of codes in the first and final storytelling session, it can be concluded that the number of all emotional burnout codes during digital storytelling intervention has decreased. Cognitive disorders have decreased the most, and psychosomatic complaints have decreased the least. This leads to the conclusion that digital storytelling is a sufficiently effective method of correction in the case of cognitive disorders. Codes that included psychosomatic scores and mental distancing scores have decreased the least. If psychosomatic disorders are expressed in a high degree, it is likely that some other more effective method can be found to reduce them. In this case, the storytelling technique may be combined with cognitive-behavioural therapy. However, this assumption should be verified in further studies. The code dynamics are illustrated in Table 2.

Table 2. Code dynamics

Code	The total number of codes	First transcript	Final transcript	Difference
Psychological complaints	451	115	35	80
Cognitive disorders	345	131	12	119
Exhaustion	322	128	27	101
Emotional disorders	291	134	57	77
Psychosomatic complaints	245	136	76	60
Mental distancing	195	87	28	59

In order to verify the reliability of the dynamics of emotional burnout symptoms, in the second stage of the study, a statistical or null hypothesis (H0) was derived from the research question and results: there is a relationship between the symptoms of emotional burnout and digital storytelling, the alternative hypothesis (H1) was also adopted: there is no relationship between the effectiveness of digital storytelling and the reduction of the symptoms of emotional burnout. According to the qualitative interview, the results of the second stage of the study were analysed using continuous comparison analysis. Summarizing and analysing the results of the second stage of the study, it can be concluded that the alternative hypothesis can be rejected and the null hypothesis can be assumed: this means that there is a relationship between the symptoms of emotional burnout and digital storytelling. The plausibility of the change was tested in sample sets related to the Student's t-test and it was found that the change in the obtained results before and after digital storytelling is statistically significant ($\alpha \leq 0.05$).

Conclusions

Although there are several significant limitations to this study (the study was conducted in a small group of respondents and within only one higher education institution), the conclusions of the study are significant in several ways. Firstly, the number of studies on really effective intervention measures to reduce the emotional burning of students is relatively large in the world, but no such studies were found in the context of Latvia. Therefore, the results of this research are important precisely in the Latvian higher education area, provide an evidence-based strategy, which can improve the quality of life in general, effectively guiding and reducing students' thoughts about emotional burnout. Namely, expanding students' strategies for managing emotional burnout. Secondly, since there are few studies that have similar objectives to this study, the conclusions of this study could serve as a kind of stepping-stone and a call to action in terms of thinking about the students' emotional well-being and the teacher as the leader of this process. This could encourage and guide further research in this area, where the emotional well-being of students is not the focus of pedagogy. Thirdly, the findings of this study have shown that digital storytelling as a method of pedagogical support could be appropriate for certain typical problem situations. The methodology is not complicated, it could be learned by each educator. In addition, this study focused on a subset of a very important population – the student population, where communication is an important part of the development content.

The results of the study allowed to formulate recommendations for the implementation of digital storytelling in the higher education area. Since

these pandemic-related stressors are not likely to end soon, as the post-pandemic period in people's emotional and mental health is predicted to be a very complex phenomenon, stress reduction measures should be the focus of attention of people themselves, teachers, educational management and legislators. It is underlined that, as early as 2022 and beyond, psychological science will play an increasingly important role in the debate on how to address the world's most challenging issues. The main ones are emotional burnout and stress (Thayer, 2021). So the urgent need for mental health services is on this list and will remain on it for many years to come. The results of this study confirmed that digital storytelling can be one of the effective tools for solving this problem. As a result, a number of recommendations emerged: (1) to develop curricula and incorporate digital storytelling into teacher education curricula or professional development curricula, (2) to develop and implement learning processes and teaching materials in a way that promotes adequate learning capacity for students, and (3) to explore the possibility of providing independent support staff to universities.

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SHOULD INFLUENCERS BE TRUSTED? ANALYSIS OF INFLUENCERS' INTERACTION WITH CHILDREN AND ADOLESCENTS ON INSTAGRAM AND YOUTUBE

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ABSTRACT

Children and adolescents (in study it refers to age group 11 till 17) nowadays spend many hours online on social media following their favorite influencers. Children and adolescents are avid consumers of social media and constitute attractive target audiences for influencer marketing. Studies show that sponsored content from favorite social media influencers appears to be highly influential and may affect brand preferences of given audiences. Furthermore, influencer endorsements are observed to carry greater credibility and authenticity than traditional forms of advertising. This therefore raises questions about young consumers' discernment of, and critical evaluation of the overall appropriateness when influencers act as conduits of commercial messages. The influencer interaction with young audiences in Latvian social media landscape still needs to be mapped.

This paper reports on a quantitative study of the influencer communication on two social media – *YouTube* and *Instagram*. A total of 459 *YouTube* videos and 654 *Instagram* posts in time period from 01.01.2021 to 01.01.2022 were selected for analysis. The aim is to acquire knowledge on how influencers communicate with their young audiences, and do they use appropriate advertising disclosures when communicating commercial information, which is a requirement of Latvian legislation. This information is crucial for further discussion on advertising literacy of young audiences as well as legal regulation of influencer marketing.

The research finds that influencers in most part do not properly mark the sponsored content. Thus, influencers both do not comply with the regulatory framework, and deny their young audience the tools to employ advertising skills.

Keywords: advertising literacy, artificial intelligence, children and adolescents, disinformation, social media, social media influencers

Introduction

Changes in children's media habits have warranted concern from parents and advocates discussion about their access to and participation in

online activities. This issue has become particularly acute in recent years. Because of social distancing norms and global lockdown regulations due to the Covid-19 pandemic, children around the world have had to adjust to new ways of living and learning, resulting in a surge in the use of digital technologies. Media literacy research found that YouTube was the most-used video-sharing platforms among children ages 5–15 for watching content in 2020 (87%). 58% of children reported that they watch YouTube every day and spend two and a half hours a day doing so (OFCOM, 2021).

Young audiences nowadays spend many hours online on social media following their favorite influencers, and it is actively used by brands. Children's susceptibility to advertising has been the subject of much academic and societal debate because their ability to effectively understand persuasive messages has not yet fully developed, and they are exceptionally vulnerable to commercial messaging.

As children are underdeveloped and relatively inexperienced as consumers, they are more susceptible to advertising influence compared to most adults. Therefore, it is important to investigate children's ability to recognize, understand, and evaluate advertising, generally referred to as advertising literacy, to help them cope consciously and critically with advertising (Zarouali et al., 2019, 208). Even though adolescents are using social media extensively and are more vulnerable to marketing attempts than are adults, research concerning how influencer marketing affects adolescents is quite limited. The aim of the current study is to acquire knowledge on if influencers are honest with their followers, more specifically if they use the appropriate notation hashtags clearly indicating the purpose of sale. This information is crucial for further discussion on advertising literacy of young audiences as well as legal regulation of influencer marketing.

Advertising literacy

Children have become an integral part of consumer culture. Consumption makes up a significant part of their daily life and, as children have a considerable influence on the buying behavior of their parents, advertisers have increasingly started to target them as well (Cook, 2004). In 2019, yearly spending on advertising to children was expected to reach $4.2 billion worldwide (Statista, 2019). As such, today's children are essentially growing up surrounded by advertising, being confronted with an overwhelming amount of advertising messages both outside and inside their homes.

Social media platforms such as *Instagram*, *Facebook*, *Tik Tok* and *YouTube* have revolutionised the advertising landscape, offering marketers the ability to provide entertaining and engaging content within immersive contexts such as advergames and social media influencer content. A resulting

concern for academia, business and society alike relates to young people's understanding, evaluation of and critical responses to such advertising practices, i. e., their advertising literacy (Sweeney, Lawlor & Brady 2021, 1).

That's why advertising literacy is more important than ever. Although a common and consistent definition of advertising literacy is lacking, it can be considered as a part of media literacy, which has been defined broadly as "a set of perspectives that we actively use to expose ourselves to the mass media to process and interpret the meaning of the messages we encounter" (Potter, 2016, 24). Advertising literacy, then, is more narrowly delineated as the skills and abilities to recognize, analyse, interpret, and evaluate advertising attempts (Hudders et al. 2017).

In order to critically cope with advertising, adolescents must recognize advertising as such and possess sufficient knowledge of the various advertising tactics that can be implemented to persuade them, the emotions that advertising evokes, and the ways whereby they should evaluate its appropriateness and fairness. These skills are defined as dispositional advertising literacy (Hudders et al., 2017). As advertising literacy develops according to adolescents age and experience with advertising (John, 1999), they may be more often subject to subconscious persuasion compared to adults. Young audiences are at a unique risk of deception if they are not able to differentiate between advertising and other forms of entertainment or grasp the persuasive intent of advertising. To command a basic level of advertising literacy, children need to be able to recognise the source of an advertisement, identify the commercial and persuasive intent, and generate a critical response. However, this can become problematic in the context of newer advertising practices such as influencer marketing and advergames where advertising content can be seamlessly woven into editorial content that is interactive, entertaining, and engaging (Sweeney, Lawlor & Brady 2021, 2).

Social media influencers

Brands are actively using the internet to reach young consumers, primarily via social media influencers, whose online presence tends to blur the boundaries between commercial and entertainment content. Social media influencers with a large number of followers and a significant impact on their followers often integrate sponsored content into their vlogs in return for financial or non-financial compensation. Since these sponsored influencer posts mostly take the lay-out and function of the regular entertaining content on the social media platforms, it is difficult for consumers to recognize these posts as advertising (De Jans & Hudders, 2020, 1).

The presence and role of influencer marketing across social media platforms is especially visible in a teenage context. For example, in a 2019 survey of approximately 400 young consumers aged 6–16 years in both the UK and the US, 28% of the sample indicated that friends were the biggest influence on their spending, whilst 25% identified influencers (Wunderman Thompson Commerce, 2019).

Influencer marketing in general can be regarded as digital native advertising because this advertising format fully integrates the commercial content into the editorial content and matches the form and appearance of the platform on which it is placed. It must be stressed that a sponsored content has the same look and feel as all the other (non-sponsored) content on the influencer's channel (De Jans & Hudders, 2020, 2). Thus, influencer marketing versus traditional advertising is more effective because individuals are not aware that they are being exposed to sponsored content.

Children may be affected by influencer marketing through different mechanisms. First, the integrated and immersive characteristics of influencer marketing make it a difficult task for children to recognize it as advertising and subsequently activate their advertising literacy, which makes them subject to subconscious persuasion (Hang, 2012). Furthermore, children may be affected through influencer effects. Influencers are often specialized in one specific niche (e. g. gaming, fashion) and mainly post about this niche. Therefore, these influencers may be seen as opinion leaders in that specific domain and can be considered trusted sources of information that affect consumer decisions. Additionally, children often feel like they know their favorite influencers and perceive these influencers as friends because they watch them daily. Children often look up to the influencers they follow and aspire to attain their lifestyles, whereby they may be very susceptible to their opinions and advice, as they want to be just like the them. (De Jans & Hudders, 2020, 3).

Since teenagers can perceive strong relationships with influencers, frequently regarding them as being akin to a friend (Van Dam & Van Reijmersdal, 2019), influencer endorsements can carry greater credibility and authenticity than traditional forms of advertising (e. g. De Veirman, Cauberghe, and Hudders, 2017). This therefore raises questions about young consumers' discernment of, and critical evaluation of the overall appropriateness when influencers act as conduits of commercial messages on behalf of brands.

Advertising disclosures

The Persuasion Knowledge Model (Friestad & Wright, 1994) suggests that to be able to critically process advertising, the consumers must first recognize advertising for their advertising literacy to be triggered and

before their various coping skills can be activated. Therefore, to command a basic level of advertising literacy, children need to be able to recognise the source of an advertisement, identify the commercial and persuasive intent, and subsequently enact a critical response. However, this can become problematic in the context of newer advertising practices such as influencer marketing and advergames where advertising content can be seamlessly woven into editorial content that is interactive, entertaining and engaging (Sweeney, Lawlor & Brady 2021, 2). In recent years, several studies have examined whether advertising disclosures are successful in enhancing advertising recognition. These studies indicate that advertising disclosures can increase adults' recognition of diverse embedded advertising formats.

The results of the multiple studies show that advertising disclosures (both generated by the platform and the influencer) positively affect children's recognition of vlog advertising. For example, S. De Jans, L. Hudders study concludes that, while only one third of the children could recognize the advertising without any disclosure, more than double the amount of children were able to recognize advertising when disclosed properly, either by a platform- or influencer-generated disclosure (De Jans & Hudders 2020, 16).

To make consumers aware of the commercial content within sponsored vlogs and posts, it is legally required to disclose advertising. This is usually done in practice by implementing advertising disclosures or labels. Advertising disclosures are intended to increase transparency and make consumers aware of commercial content. Recent international regulations have come to an agreement that influencer marketing must be clearly disclosed to consumers. For example, in the EU, the revised Audiovisual Media Services Directive (AVMSD) will require platforms to request anyone uploading content to indicate when their content contains advertising and ensure that viewers are clearly informed when this is the case (De Jans & Hudders 2020, 2).

However, current existing regulations on an international level do not explicitly address how these disclosures for influencer marketing should be designed, implemented, or monitored (De Jans & Hudders 2020, 3) leaving a lot of room for interpretation, and do not define how these advertising disclosures should look, nor how they should be implemented or monitored. As a result, many sponsored vlogs, and posts, even by the most popular influencers, are not properly disclosed in practice (Bridge 2018). In Latvia Consumer Rights Protection Centre (CRPC)[1] has developed materials for content creators explaining what publications on social media sites should be in order for them to comply with the requirements of regulatory

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[1]   Consumer Rights Protection Centre (CRPC) in Latvian Patērētāju Tiesību Aizsardzības Centrs (PTAC).

enactments and that the implemented commercial practice should not be considered misleading. As part of such a network marketing scheme, a content creator is required to provide clear and visible indications that published content is advertising by telling or displaying products or other information aimed at attracting new customers. CRPC reminds that in case of commercial content, advertising references must be used throughout the short story. Hashtags such as – #advertising, #paid, #paidadvertising, #sponsored or #paidpartnership – must be indicated by anyone who publishes information promoting the product or their merchants on a social networking site, including acting in their commercial interests or on behalf of other merchants or manufacturers, or interests and material compensation received for it (money, gifts, or similar material benefits) (PTAC, 2021).

Methodology

In order to select relevant influencers who are followed by Latvian teenagers, huge data massive should be analysed. Such data cannot be manually collected and analysed, nor does the Instagram app itself provide such information. However, there are a number of data analysis agencies around the world for Instagram and other social networks that offer audience analysis and auditing of content creators. In the framework of this study, an international agency that also operates on the Latvian market, *Hypeauditor*, was used to obtain data for audience analysis. *Hypeauditor* uses the following parameters:
- The age and gender of the audience is defined using "computer vision" technology, which analyses the audience recordings of the author of the content in question;
- The geographical location of the audience is determined by algorithms that analyse the content author's audience entries on geotags, the language used in the entries' descriptions and comments, and the corresponding subject headings;
- Comparison algorithms are used to overlay the audience.

Hypeauditor also measures the authenticity of the audience and their comments using machine learning, Natural Language Processing algorithms and other mechanisms powered by artificial intelligence. This algorithm is used to run a syntactic and semantic analysis to derive meaning from human languages, which helps to analyze comment authenticity. The algorithm also checks accounts for suspicious patterns and behavior that it has witnessed on bots (artificial followers) and other low-quality accounts. As for a low-quality audience, to detect it HypeAuditor uses a specially trained ML-model, which is based on the ensemble of machine learning algorithms and uses more than 53 patterns to detect suspicious accounts.

As a result, it detects 95.5% of all known fraud activity, with a mean error rate of 0.73%

Based on this, *Hypeauditor* has developed the Audience Quality Score (AQS), which measures how authentic and engaged a given content author's audience is with the content author's recordings. *Hypeaudior's* artificial intelligence analyses publicly available data. In general, the error rate is 3–5%.

In order to identify audiences' interests, *Hypeauditor* uses a set of classification algorithms based on a similarity measure (including KNN, Native Bayes, and BM25).

The *Hypeauditor* services were used in order to:

1. Make a list of several social media content creators for *Youtube* and *Instagram* that have the largest scope of teenage subscribers from Latvia; it was crucial that Influencers themselves are also from Latvia.

2. To analyse in what per centage of publications the brand is mentioned and in what part of them there is a mentioning about the cooperation. To make such analysis, hashtags defined by Consumer Rights Protection Centre were used: #reklāma #reklama #apmaksātāsadarbība #apmaksatasadarbiba #davana #dāvana #sadarbība #sadarbiba #paidpartnership #sponsorship #sponsorets #sponsorēts #ad.

Period of the analysis: 01.01.2021.-01.01.2022 for the *Instagram* and 01.01.2021.–01.01.2022. for *YouTube*.

The aim was to selected social media content creators registered in Latvia, majority of whose audience is from Latvia and who have the biggest share of teenagers (11–17 y.o.) from Latvia. Total number of their followers is not less than 1500 persons.

Results

The results of the analysis are reviewed on each social media platform separately.

YouTube analysis

It is important to stress that 29% of 11–17-year-olds Latvian adolescents consider *YouTube* to be trustworthy (Telia Company, 2021, 23). Analysis of the *YouTube* social media content creators demonstrate that the most popular categories among adolescents are entertainment, people and blogs, gaming, and sports. By the popularity we mean number of followers of influencers in each category.

But the engagement rate is one more additional criteria that is important to define popular content – this rate helps us to define with which content

people mostly interact. And here we see that gaming is persuasively the most engaging content in Latvian *YouTube*. Latvian adolescents also actively interact with music videos, news and politics, entertainment, and education. Interestingly, the least engaging content is sport, however according to the number of subscribers, channels devoted to this topic are one of the most popular.

Gaming and music videos can be so engaging due to specifics of the platform: historically *YouTube* is known as the platform where you can listen to music free of charge and familiarize with new talents. Such stars as Justin Bieber for example became popular thanks to *YouTube*. As for gaming, it is obvious, that for this theme is crucial to demonstrate the process of the game, and *Instagram*, *TikTok* or *Twitter* are irrelevant for this purpose. As a result, users come to *YouTube* for the specific content such as music videos and gaming, and actively interact with them.

Analysing, what type of videos Latvian content creators which are followed by Latvian adolescents publish the most actively, we see that "entertainment" is on the top. This topic is followed by "sports", "people" and "blogs" and "gaming". "News" and "politics", "films", "how to" and "style" are the less actively covered topics.

As for views per category, the most popular is music, followed by people and blogs. Films and animations, sports, and education follow the first two topics. Gaming is somewhere in the middle of the top.

So, we can see interesting phenomenon – bloggers are mostly publishing entertaining content and sports, however their key followers – adolescents – are mostly watching music videos, blogs and films, but most actively interact with the gaming and music videos.

As for gender preferences, we can see, that female users prefer entertainment (70%), films and animations (72%), people and blogs (94%) and sports (53%), but male do prefer news and politics (71%), music (83%), how to and style (75%) and gaming (63%).

Content analysis allowed us to select 459 videos with brand mention, emphasizing its advantages or sharing positive opinion. In 129 videos (28%), there is mention of the appropriate hashtag; it is embedded in the description or in the video that it is paid collaboration or gift, or barter.

In each fourth video (24%) content creators used hashtag "ad" – it is the most popular hashtag used to mark paid content. The second the most popular hashtag is "reklāma" ("advertisement" in Latvian). If the first one (ad) could be quite unclear for people, especially for adolescents whose command of English might be not fluent, then the second, which is used in 17% of videos, is crystal clear. Also popular are such hashtags as "davana" (gift) and "sadarbība" (cooperation) – they are used in 15% and 14% of marked videos accordingly.

But what are the categories of products promoted by *YouTubers*? Mostly they communicate about gadgets – 32% of videos with brand mentioning is devoted to this topic. In each fourth (24%) services are promoted and 21% of promotional videos mention cosmetics and fashion products. Beverages and food are mentioned in 17% of videos.

At the same time only part of these videos is marked properly. For example, in the category of gadgets promoting videos, 26% of videos are marked with official hashtag or it is told in the video that the content is promotional. In the category of services there are just 20% of such videos, but the worst situation is with drinks, foods and fashion and beauty products – they are softly integrated into videos and only 19% and 17% of these videos are marked as advertorial. It means that there is no appropriate reference in each 8th video which contains advertisement.

Instagram analysis

Analysing categories, which are popular in Instagram, we can see, that the most popular category is "people" & "blogs" and the second very popular topic is "entertainment". Analysis of Latvian bloggers' content and its popularity among adolescents demonstrate, that girls prefer blogs about people, but boys – entertaining content available in *Instagram.*

For two years (2020–2022) bloggers who are popular among 11–17 years old users, have made 654 posts, mentioning, or tagging a brand. In the 251 posts (39%), cooperation is marked properly.

In the posts, which were marked with appropriate hashtag, influencers the most often used hashtag "davana" (gift) – 19%, "sadarbība (cooperation) and "ad" – 17% accordingly. The least popular of official hashtag is "apmaksātāsadarbība" ("paid cooperation" in Latvian). The hashtags "reklāma" and "reklama" (advertisement in both cases) were used in 24% of promotional posts. This is a good trend, because the word "advertisement" is crystal clear, especially comparing to such terms as "davana" (gift) or "ad".

As for categories of products promoted in the *Instagram* posts of Latvian bloggers, the most promoted items are from fashion and cosmetics sector – there are 32% of such comparing to 21% in *YouTube*. The second the most actively advertised categories are services (23%) and gadgets (23%). And each 10th of advertorial posts or 11% were devoted to food and drinks.

But how much of them were marked or descripted properly? We can conclude that in the area of fashion and cosmetics almost each fourth advertorial post (22%) is marked or descripted as advertisement or barter. In the sector of gadgets, 25% of promotional posts are marked properly and in the category of food and drinks there are 29% of such posts.

In common we can see that about 2/3 of promotional posts are never marked as law and ethics require. We can offer hypothesis, that influencers

hide advertisement because are afraid that its engagement rate will be lower than the engagement rate of regular posts, so to further investigate this hypothesis it is important to checked this parameter. The survey demonstrates that regular posts without promotional content integration on average have the same engagement rate as advertisement posts – 8%. But the "average" parameter could be inexpressive, that's why we analysed also extreme indicators and see, that in 9% of cases engagement rate was less than usual, in 9% – the same as usual and in 82% of posts it was bigger than usual.

Discussion

The survey demonstrates that absolute majority of promo publications in *Instagram* and *YouTube* made by social media content creators mostly followed by adolescents, are not marked properly. In *YouTube*, fashion goods and cosmetics, and food/beverages are categories that are marked properly rarer than others. In *Instagram* – services (17%) and fashion goods (22%). Only quarter or even 5th part of promotional posts in each category is marked properly which is dramatic result.

Influencers tend to hide promotional content, supposedly because they are afraid that the audience will interact less actively with it. Nevertheless, according to engagement rate analysis, there is no reason to hide cooperation with a brand, because engagement rate of promo posts usually is even bigger than engagement rate of regular posts – this sentence is true in 82% of cases. The reason of higher engagement might be that in lot of the cases these posts are contests or competitions.

Analysing which hashtags are mostly used to mark paid cooperation in *YouTube* and *Instagram*, we see those hashtags #ad and #sponsored are still very popular. Hashtag "sadarbība" (cooperation") is also actively used. Supposedly, these hashtags might not be clear enough to the audience, since previous studies, including Euromonitor International, demonstrate that adults don't understand it's meaning. However further research is needed to make sure of social media audiences understanding and recognition of hashtags as advertising disclosures.

The existing bulk of study in Latvia focuses on children's and adolescent's experiences with misinformation online. However, there are some data that could be useful to evaluate and to understand the advertising literacy of Latvian adolescents. *Telia Company* survey of 11–17 year-olds in 2021 shows that 31% of Latvian respondents check the accuracy of the information when watching videos and publications from influencers and bloggers. 45% of Latvian respondents notice label which websites and platforms use to identify that information are coming from a trusted source, and 83% found

such labelling or marking useful (Telia Company, 2021, 23). Thus, there is necessary skills from audience to exercise advertising literacy. The sensitive point in this respect is on the part of the content creators themselves, who do not provide the tools (hashtags) for the audience to apply advertising literacy.

Conclusions

In today's digital world both children and adults struggle to distinguish persuasive techniques from other content. Although parents play a significant role in helping their children learn to be critical of media messages, identify advertising approaches, and resist their influence, it is crucial that policy measures are in place in children's digital media environments to protect their interests. CRPC suggests that consumers need to be alert when they see posts about network marketing products on social media sites – such a publication is more likely to be an advertisement rather than a personal one. As before, CRPC will continue to assess the compliance of the content of social media sites with the requirements of regulatory enactments (PTAC, 2022).

Theory of advertising literacy stress that to critically cope with advertising, advertising as such must be recognized. Only if one recognizes advertising one can employ the knowledge of the various advertising tactics that can be implemented to persuade. Advertising disclosures as hashtags are essential tools. From the carried-out research we see that both the audience values advertising disclosures as a useful tool and the authorities determine their use. However, in practice, the labelling of advertising disclosures is not an integral part of influencer marketing.

In order to further develop the topic and fully understand it, it is important to analyse in depth the reasons for not using appropriate hashtags on the part of influencers. There might be several reasons, for example, it can be requirement of their client or their fear to lose followers' interest, or some other reasons that must be researched.

The growing consumption of social media and the growth of influencer marketing indicate that advertising literacy is very important, and attention should be paid to strengthening it. Both parents, schools, and policymakers need to be involved, as well as the influencers themselves must conduct their business in a fair and transparent manner. In this way, society will better enable kids to recognize influencer marketing and make well-informed, conscious consumption choices both now, as well as in the future.

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UNSPOKEN TRUTHS IN NARRATIVES OF CONTEMPORARY MOTHERS TOWARDS THEIR MOTHERS IN LATVIA

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ABSTRACT

Soviet propaganda promised liberation of women from household shackles, glorifying them as 'heroines', who embody love for family, work and communist ideals. Behind ideology, the 'second shift' burdened mothers with tedious housework, childrearing, and professional workload. Nowadays their daughters, who were born in the turmoil of collapse of USSR, experience motherhood differently, with the aid of information and technologies, that seemingly ease childcare and everyday life in democratic Latvia. Although mothering is a subjective experience and each next generation questions decisions of the previous one, contemporary motherhood favours different childrearing methods, rooted in evidence-based sources, Western medicine practitioners, and democratized family models in contrast to Dr. Spock's advice, home remedies or physical punishment. 'Intensive mothering' ideology adds to the pressures of modern motherhood, deeming the mother entirely responsible for social, psychological and cognitive well-being of her children. By employing the theoretical framework of Arlie Hochschild, this article explores the unspoken truths, doubts, and grievances of 21st century mothers towards their 'mothers-heroines' of USSR. The 'deep story' has been constructed, intertwining narratives, gained from eight phenomenological semi-structured interviews with new mothers. The 'deep story' has been supplemented by a case study of a viral post (*Facebook*, March 2021) by a contemporary mother, reflecting on advantages of modern motherhood in comparison to mothering in 1985, sparking a heated debate. The 'deep story' of contemporary mothers unfolds the layers of unarticulated feelings – from resentment to gratefulness, from anger to love. Inner conflict between respecting parents, and following an individual path is also present.

Keywords: motherhood, intensive mothering, communication, deep story, narrative, pheno-menological interviews, case study

Introduction

Even though the primary goal of parenting – happiness of one's child – has not altered, mothering and child-rearing has changed and continues to change with each new generation. Differences in socioeconomical

background and in pedagogical approaches, as well as overall prosperity, new opportunities and technologies contribute to differences between mothers, raising children in Soviet Union, and contemporary mothers now, raising children in democratic Latvia.

The significance of traditional values in Latvia is steadily diminishing, especially among younger people, who are developing more liberal views as opposed to previous generations. For instance, during the last 50 years, the number of childless couples has increased and the number of families with 3 children – decreased (Trapezņikova et al., 2019). The close bond between generations is also dwindling, as new couples build their lives separate from their parents and only 14% of respondents with children under 14 have received regular support in childcare from relatives, friends or people living outside their household (during a 12-month period) (Trapezņikova et al., 2019). Young couples tend to find their own path and build their family's nest without help and support of previous generations.

With the regaining of sovereignty and independence of Latvia in 1991, the rapid transformation of motherhood and family models as well as other factors, several conflicting discourses have formed in Latvian society: the 'spoilt generation' of new, contemporary parents versus 'survivors of Soviet occupation', who have had to provide childcare without help in form of baby formulas, disposable diapers or washing machines; as well as the 'emotionally available' new parents who value respectful parenting techniques, rooted in emotional intelligence, versus the 'broken generation' of parents, who place value on strict discipline and more authoritarian parenting methods.

Therefore, the aim of this paper is to explore the 'deep story' of emotions of new, contemporary mothers[1], living in Latvia, in respect to parenting techniques and child-rearing methods of previous generations, e. i., their mothers and other women, who brought up children in Soviet Latvia[2]. The research questions of this paper are:

1. What are the feelings of contemporary mothers *towards* their mothers – 'mothers-heroines'[3] who have had to raise children on the brink of collapse of the Soviet Union?

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[1] The author speaks of 'contemporary mothers' or '21st century mothers' when referring to women, who are born in 1980s and currently have small children in pre-school age.

[2] The author speaks of 'Soviet mothers' or 'mothers of previous generations' when referring to women, who have given birth in Soviet Latvia or the first half of 1990s.

[3] "Mother-heroine" – an honour bestowed to those women who had more than 5 children (Āboliņa, 2016).

2. How do contemporary new mothers see motherhood *nowadays* in comparison to motherhood in Soviet Latvia (which they themselves have experienced only as children)?

Mothering in Soviet Latvia

During the Soviet occupation of Latvia, propaganda created a 'new type of family'. An illusion, constructed through real or fictional family stories, took the form of an 'ideal family' that was materially and morally well-off and did not resemble a family *per se*, but more a 'friendly collective, with love and support of all members at its core' (Jansone-Ratinīka, 2013). In this 'family' or collective, 'liberation of mother' (Kestere et al., 2020) was key, as it was crucial in Soviet Union that everybody was equally engaged in the construction of communism and victory over capitalism. "Metaphorically speaking, the perfect New Soviet Man was endowed with the body of a woman and the mind of a man," concludes Kestere, Stonkuviene and Rubene (2020). The woman would be portrayed employed, riding a tractor, fusing metal, teaching children etc., except that, in fact, the New Soviet (Wo)man would still be burdened with household-chores.

Solidarity and egalitarian family models, equal rights in public and at home regulated by Soviet rules were present only in theory; in reality such regulations were used for control and manipulation (Jansone-Ratinīka, 2013). The dominant discourse of Soviet propaganda supported dualism and the falsification of reality; despite the ideological promises of gender equality and equal distribution of household chores, Soviet gender system implied patriarchal traditions. Even though the woman is equally employed, household tasks and child-care were completely her responsibility due to 'natural talent'; role of father in the family – miniature (Jansone-Ratinīka, 2013). In most Soviet states "regimes took measures to induce women to work"; however, they did not tolerate discussions about such issues as patriarchy or the lack of gender equality within the family' (Saxonberg & Szelewa, 2007).

According to a survey done in 1975, men had had a 2–3 times smaller workload at home than their spouse (Jurciņa, 1975), causing women exhaustion, stress and premature ageing. Furthermore, in a 1986 survey it was concluded that girls had spent 2.1 times more time doing chores at home than boys, which later was 'transferred' into adulthood (Jurciņa, 1986). As Schuster concluded in 1971, dispersing the myth of equality for women in USSR: "The majority of women in the Soviet Union are still engaged in back-breaking physical labour" (Schuster, 1971). In 1980s 'glasnost revealed the terrible weight of the double burden imposed on women' (Kay, 1997). The problem of 'masculinisation of Russian women

and emasculation of Russian men' was brought to attention in the late 70s (Kay, 1997; Zitmane, 2016)

Mothering in democratic Latvia

Fast forward to 30 years later with the benefits of democracy and opportunities of the free world, the dominant discourse in 21st century in Western European societies is of 'intensive mothering', that still holds the woman accountable for everything to do with the household. 'New-momism' as coined by Douglas and Michaels (2004) or 'intensive mothering' (Hays, 1996) provides guidelines for preferable actions, as well as emotions that a mother should express (Hays, 1996; Hallstein, 2006; Murray & Finn, 2012). This 'correct' mothering implies forever loving affections towards the child, automatically classifying their struggles with tasks of motherhood and other emotions, including sadness, fear or anger, as inappropriate (Murray & Finn, 2012); it also implies for the woman to have total satisfaction with the mother's role (Orton-Johnson, 2017). Motherhood is idolized, and even if being a mother is not assumed as a woman's primary goal anymore, it is still perceived as immensely important.

'Intensive mothering' insists that the mother is "entirely responsible for the social, psychological and cognitive well-being of her children" (Feasey, 2017). Moreover, parents, especially mothers, are urged to invest "more than usual amounts of physical and emotional energy into specific activities and practices with children", as well as put their own needs and interests last or take upon 'enormous risks' (Das, 2019, p. 499). The child has become an asset that needs to be nurtured for future gain; thus, for instance, Steiner and Bronstein (2017) speak of 'investment parenting' as a new trend in neoliberal societies.

Lastly, 'intensive mothering' also reinforces traditional gender norms, even idealizes them (Schoppe-Sullivan et al., 2017); moreover, it supports the pro-natalist position and medicalisation or motherhood experience (Tiidenberg, Baym, 2017). Hence, traditional gender norms, enforced by the pressures of 'intensive mothering', ensure the presence of a 'second-shift' (Hochschild & Machung, 1989) for mothers, despite of transformations in society and improvement of women's rights after the collapse of USSR. According to a survey done by the Ministry of Welfare of Latvia, the mother is the main caregiver in 1/3 of families with children under 18; both parents participate in raising children with the mother investing more of her time in 46% of cases, while only 13% of respondents had confirmed that both parents participate equally (Snapshots, 2020). Another in-depth survey reveals that 68% of respondents feel that women can take care of children better than men (Trapezņikova, et al., 2019). Therefore, despite of improvement of socioeconomical background and overall prosperity, new

opportunities and technologies available to 21st century mothers, 'stalled revolution' (Hochschild & Machung, 1989) at home and the unequal burden of household chores is still a pressing issue of motherhood in the contemporary world.

Methodology

First of all, a call for volunteers to participate in a study about the feelings, everyday life and views on motherhood was posted in the author's personal social media profile on *Instagram.* The post (*Instagram* Story) contained information about the core theme of the study (motherhood and comparison regarding childrearing methods in Soviet Latvia and contemporary Latvia) (Figure 1). The call was adressed to mothers, not specifying the age or number of children. Eight mothers replied and showed initiative to participate in the study and all were included in the sample.
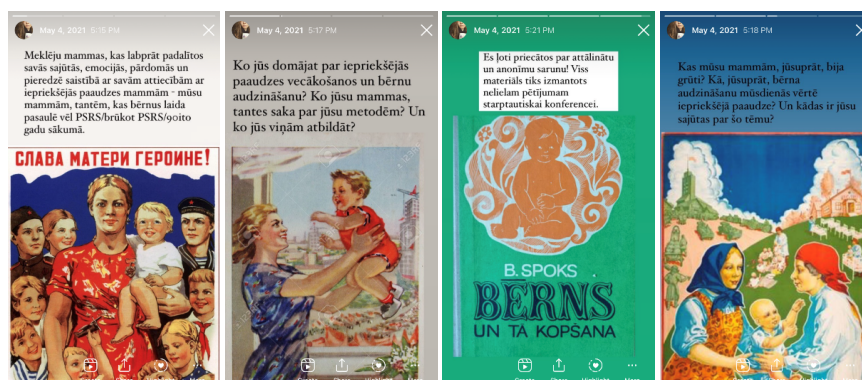
Figure 1. Open call for volunteers on Instagram.

Second, a phenomenological approach to unstructured interviews (Cope, 2005) was employed to data gathering, as phenomenology truly captures the essence of experience and the hidden meaning (Prikhidko & Swank, 2018). While conducting a phenomenological inquiry, the researcher must take a neutral position and try to describe the phenomena only through the eyes of the interviewee, bearing in mind the phenomenological question that should pervade all the stages of the research (Champlin, 2020).

Third, interviews with the eight contemporary mothers, reflecting on the relationship with their mothers regarding raising children, were analysed through narrative analysis. Narratives aid individuals understand and explain themselves to others. The stories we tell help us apprehend the social life and praxis: as human beings are not simply 'actors', but also 'authors' of their lives (Miller, 2005). Narrative analysis concentrates

on revealing the experience of an individual through stories; conducting narrative analysis, one searches for similar themes and their relationships in order to create a general narrative, based in empirical evidence, that embodies unique aspects of each individual story (Kim, 2016).

Forth, after narrative analysis a 'deep story' was created – a 'deep story' is a web of narratives that helps to apprehend conflicting powers in a particular social context (Palmer, 2019), escaping rationality and concentrating on how injustices are felt and maintained (Kantola, 2020). Hochschild's 'deep story' concentrates on feelings by speaking through symbols; it bears no judgment or facts as it speaks of pure emotions (Hochschild, 2016).

Lastly, to supplement the data, a thematic analysis of comments on *Facebook*, LA.lv and Cālis.lv was conducted, following the discussion of a viral *Facebook* post, supposedly comparing the benefits and problems of contemporary motherhood and motherhood in 1985.

The study considered all ethical research standards in accordance with the General Data Protection Regulation (GDPR); participation of authors of interviews completely voluntary and transcriptions of interviews were anonymized.

Mothers' profiles and data

In Latvia, the mean age of woman at childbirth is accounted for 30.7 years, while the age of mother at her first childbirth is 28.1 years; 49% of new mothers have higher education and live close to the capital, Riga (Central Statistics Bureau of Latvia, 2020). The mean age of mothers of first-born children is still one of the lowest in EU, though steadily increasing (Trapezņikova, et. al., 2019).

Table 1. Mothers' profile

Respondent's name (alias)	Age	Age of children	Education	Age of mother	Residence
Elīza	38	4y, 2y, 3m	Higher	60	Salacgrīva
Uma	31	6m	Higher	53	Rīga
Laima	34	10y, 8y, 6y, 4y	Higher	60	Sigulda
Māra	29	4y, 1y	Higher	51	Rīga
Arta	32	3y, 1y	Higher	63	Rīga
Emma	39	3y, 1y	Higher	65	Rīga region
Aina	28	1y	Higher	66	Rīga
Sarmīte	28	7m	Higher	52	Rīga

Therefore, the sample of woman participating in the study (see Table 1. *Mothers' profile*) roughly coincides with the average characteristics of a new mother in Latvia, as almost half of new mothers have higher education (49% in 2020) or general secondary or secondary professional education (34%) according to the Central Statistics Bureau of Latvia.

Results

Women share their thoughts, regarding parenting in Soviet Latvia, that is, their views on how they themselves were raised, their current relationships with their mothers, as well as how they feel they and their mothering techniques are perceived by women of previous generations in general. After narrative analysis, a thematic analysis of comments on a viral *Facebook* post regarding parenting nowadays and in 1985 has also been carried out.

Women's narratives and 'deep story'

According to the sample of contemporary mothers, parenting during Soviet times – to their mind – was undoubtedly **physically difficult**, more difficult than nowadays. Women had to deal with tremulous times, poverty, lack of appliances and modern technologies, lack of trustworthy information sources, etc. Almost all contemporary mothers agree that "It was definitely harder for [mothers]". Māra says: "How they toiled with nappies… My mother didn't even have hot water in her flat. [..] So they brought us up like they brought us up – everything took so much time.". Laima stresses that they "had to work harder", thus, there was less time to spend with children.

Sarmīte acknowledges the **power of Dr. Spock**: "There was only Spock, [..] relatives, grandmothers and doctors", insisting that there was hard work and almost no scientific, evidence-based information on child-rearing, except for Dr. Spock's book. As Chernyaeva (2013) writes, this was a 'revolutionary' book for the time that "provoked the intense and diverse public reaction of various social actors". This 'raising by the [Dr. Spock's] book' gained popularity, despite being produced outside the Soviet tradition of child-care advice (Chernyaeva, 2013). This book is mentioned also by Aina and Emma, expressing doubt on the 'quality' of this kind of information. Aina stresses the **discipline** and **fear of spoiling children**, inspired by the book and norms in society, her mother faced raising her. Laima says that "You couldn't express your **emotions**." While Elīza shares:

> "If the child misbehaved, he was spoiled [..], no one searched for a deeper reason. [..] My mother advised me to look into Spock's book – 'you won't like it, but read it, perhaps something useful. [..] She was proud she had used that book while raising me."

As contemporary mothers put it, parents, raising children in Soviet Latvia, loved their children, but had **no time** or lacked motivation to spend qualitative time with them, were **strict** and perhaps even cold. Sarmīte says that her mother loved her, but "had to distance herself" from her; Laima says that she "did not like the way I was raised".

According to 21st century mothers, in Soviet Union, **the child was "not a person"** with views or wants. As Arta puts it: "It was more important, how the child seemed from afar – 'what will people think, if the child starts yelling in the street?". Sarmīte says that the child was more like a 'thing', and the aim of child-rearing was to "create good, hardworking people that conform with the system". Aina says, that there was "was **no emotional upbringing**" and the child was supposed to express only 'convenient emotions' and all other were 'shushed'. Uma expresses that the children were 'raised as small machines', which coincides with Emma's thoughts that "it wasn't important how you felt, you had to be obedient, to comply with a standard". All mothers share that, during Soviet times physical punishment was key and **complete obedience** had to be established.

However, according to 21st century mothers, even though parenting in Soviet times demanded more from the mother physically, parenting nowadays is sill a handful, although not everyone recognizes it. Aina recalls a row with her mother:

> "[My mother has said to me] In my time I could manage it all. How come you can't? [And I replied] But were you happy, managing it all? [..] Did you spank me because you were happy with yourself and with your life?'

Emma thinks that in Soviet times "people 'stuck it out'", but nowadays she is "not game to suffer, we stand tall". Uma stresses that her mother thinks she is **not grateful enough**:

> "We are not valuing everything we've got and with our whining we do not appreciate what they've gone through. [..] It could be received as ungratefulness; that we're not saying 'thank you' every day for living in the 21st century."

Thus, Laima says that the challenge of modern-day mothering is "the **emotional pressure to be a great mother**, give love, education, activities, balance the rhythm of the day, balance the diet, etc.". Democratic Latvia provides both means and possibilities to treat the child as a human being when he/she is even still in mother's womb. **Respect for the child** nowadays is key, bearing in mind his/her desires and needs and searching for a considerate compromise. Therefore, 21st century mothers do not hold their mothers or women of previous generations as unquestionable role models. As Sarmīte puts it: "[In Soviet times] older women became elders, from whom younger women gain knowledge. Now it's completely

different". This sentiment echoes in almost every narrative. Arta says "I think they're [grandmothers] a little annoyed about young mothers and that they think they know everything better", while Elīza says "My grandmother had a saying – you have to swallow that toad. That's how they lived – swallowing toads and resentments, and pain, and suffering." 21st century mothers do not wish to live this way.

Contemporary mothers feel that some Soviet mothers want **recognition from their daughters**, **gratitude**, while some feel **envy**. Emma shares:

> "I don't have to do *copy + paste* like she did, she's not my idol, [..] and that is hard for her, because we don't put her on a pedestal. [..] She wants to hear that she has been a mother-heroine, as she has raised five children, but I cannot lie, [..] I don't feel that way about her."

Māra says "I suffered, my mother suffered, so you should suffer' [..] We have to suffer, otherwise it's not fair in their minds". An inner conflict in the hearts and minds of 21st century mothers may be felt; as Uma puts it "On one hand, I do feel grateful, that our parents raised us in such hard trumulous times. [..] On the other hand, I feel 'not completely loved'."

Some contemporary mothers would like an **apology** from their mothers for their parenting style. Aina says that she harbours some **resentment** towards her mother for the way she was raised, but she **tries not to blame** her. Sarmīte feels that her mother did the best she could; Emma says "I don't blame her for anything". However, Māra would like and apology from her mother for some of her actions as a mother that she still remembers vividly.

21st century mothers reserve the right to choose their own path in mothering; however, they experience a **sense of guilt or need for defence and explanation**. Laima says that "At the moment [grandparents] are a great help, but we have gone through a long period of quarrelling." Sarmīte says that she doesn't have open conflicts about parenting styles but she feels the pressure, as does Uma: "We want to give our children everything we did not receive – [..] time qualitatively spent together."

Therefore, despite the fact that 21st century mothers recognize the physical toll and difficulties raising children their mothers and mothers of previous generations faced, there is a **strain on relationships and hierarchical disbalance in their relationships**. The level of this strain differs – it is a spectrum, but it is visible in all narratives. Aina says: "[Previous generation] thinks that we fuss and whine over nothing", while Emma expresses her courage to voice her thoughts to her mother: "Only now I feel I can stand up to my mother, to speak up about things I don't like [..] and I feel a resistance – 'how can you come across me, I'm your mother'." Māra feels that there is no respect for her from her mother, while Laima regrets that her mother thinks that "that emotional hardships don't

count; robots, washing machines and everything – [we have] nothing to complain about, we conjure problems and solve them, because we don't have a real life and real problems". The theme of '**spoiling children**' and **lack of discipline**, as well as facing 'fake problems' or having 'a fuss over nothing' as main complaints from previous generations echo in some level in all narratives of 21ˢᵗ century mothers. Uma concludes: "Grandparents criticize those young parents for spoiling their children. [..] And we are spoilt because we whine about everything."

Therefore, the '**deep story**' of the relationships of 21ˢᵗ century mothers with their mothers and women of previous generations is filled with inner conflicts between gratefulness and remorse, between love and guilt. Contemporary century mothers feel that their mothers have overcome enormous physical difficulties and challenges caused by socio-economical instability and overall poverty at the brink of collapse of the USSR. However, in Soviet Latvia children were not raised but rather 'attuned' like small machines or miniature soldiers – without proper respect and a lack of affection due to pressing times, the dominant ideology and teachings of Dr. Spock, with presence of strict discipline enforced by physical punishment. Contemporary mothers feel that their mothers are eager for appreciation for raising children during hard times, whereas 21ˢᵗ century mothers would like acknowledgment for their efforts despite the differences in socioeconomical background, and even perhaps an apology for past pains. However, the challenges of 21ˢᵗ century mothers seem miniscule and unworthy in the eyes of (some) women of previous generations. Lastly, contemporary mothers do not hold Soviet mothers as untouchable idols, therefore, upsetting the traditional hierarchal family models. They want to raise children 'with respect' and 'as equals', triggering some worries for 'spoiling children' and 'fussing over nothing' from mothers from previous generations.

Thematic analysis of a viral *Facebook* post

In addition to qualitative analysis, a quantitative element was added to the study as well, following the life of a viral *Facebook* post (Facebook, March 2021). This post was originally posted on a private profile of a mother (Santa, no last name), and quickly gained popularity, spreading through social media groups and forums, reaching traditional media as well (Figure 2) – LA.lv (LA.lv, 2021) and Cālis.lv (Cālis.lv, 2021).

Thematic analysis was done on comments under four different sources, where this particular post had gained popularity: news portal "Cālis.lv", news portal "LA.lv", *Facebook* post on the page of "LA.lv" and under the shared post on Supportive Mothers' Forum (*Atsaucīgo māmiņu forums*) on *Facebook*. The post was shared on numerous other *Facebook* profiles

and groups, but due to privacy restrictions the comments on these posts were not analysed. The post (Facebook, March 2021) speculated on the advantages of modern motherhood seemingly comparing to mothering in 1985. However, the view expressed on the post concentrates on the benefits of technologies and wealth that eases mothers' burden, skipping other aspects, as well as indirectly pointing to the 'whining' of modern, 'spoilt' mothers.

Expressed views in comments

	Facebook "Forum for Supportive Mothers" (95)	LA.lv (73)	Facebook "LA.lv" (102)	Cālis.lv (17)
■ Agree	18	29	36	4
■ Disagree	21	7	9	2
■ Cannot compare	21	9	28	4
■ Other	35	28	29	7

■ **Agree**   ■ **Disagree**   ■ **Cannot compare**   ■ **Other**
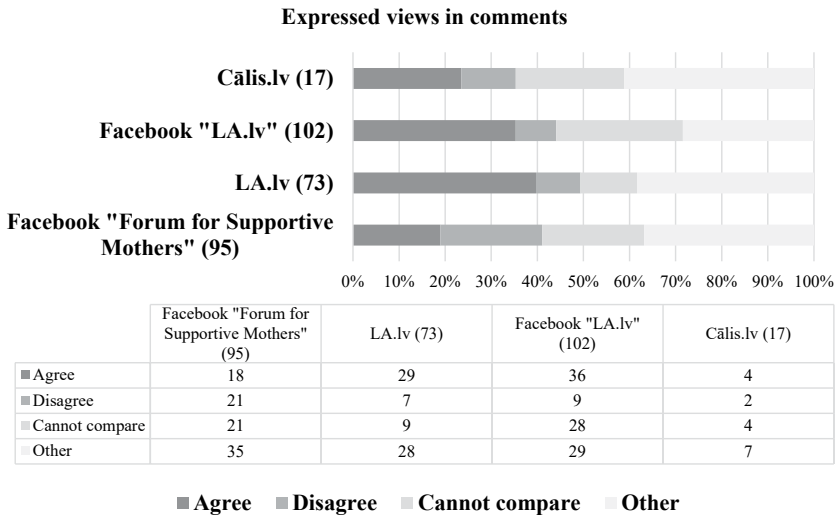
Figure 2. Expressed views in comments

Figure 2 illustrates the expressed views on the comments on the various sites. On the more conservative media portal "LA.lv" more comments tend to agree that contemporary mothers 'whine' and 'fuss over nothing', and do not appreciate, how motherhood has been eased by various new technologies, household appliances etc., stressing that modern mothers 'spoil' their children. Whereas on social media, the views distribute more evenly, saying that these experiences simply cannot be compared, or even that the pressures of 'intensive mothering' make it harder for contemporary mothers to raise children. A large portion of comments marked as 'Other' addressed other themes, not relevant to the study, as these online discussions tend to drift off course.

The comments also illustrate parallel and conflicting discourses, as well as the clash between the 'spoilt generation' of contemporary mothers, who 'do not appreciate the efforts of previous generations' and 'survivors' of Soviet occupation, as well as the contemporary parents, who value emotional intelligence and respectful parenting techniques versus the

'broken' generation, who are afraid to show emotion or weakness, for instance, prohibit boys from crying etc. Lastly, the results from this sample of comments also coincide with results from a 2021 SKDS survey of 1001 parents, concluding that 46% of contemporary parents with children under 17 feel that it is more difficult to raise children nowadays than when they themselves were children (Latvijas Radio, 2021).

Concluding, the author interviewed the leading expert, Vice Dean of Faculty of Education, Psychology and Art, University of Latvia, Head of the Doctoral Study program "Education Sciences", prof. Zanda Rubene to gain deeper insight into the research theme. She argues:

> "[In the Soviet Union] the purpose of parenting was obedience. Obedience is achieved by the acclaimed Benjamin Spock theory of childcare that was aimed at upbringing with discipline. Its basic thought is that you should not "spoil" the child. If you take him in your hands and respond to the child's needs, you "spoil" him. It is a tradition that comes from a society where human needs are not taken into account."

The sentiment of Soviet parenting is echoed in the narratives and 'deep story' of contemporary mothers in the sample of this study. Moreover, prof. Rubene highlights the dilemma of contemporary motherhood: "At the moment we live in a child-centred society where the child's needs are taken into account. […] The child has needs, but the adult also has needs that have to be respected." New mothers, on one hand, fearing to repeat negative experiences from their own childhood, try to be empathetic and listen to the child's needs, and, on the other hand, occasionally fail to set boundaries for the child and forget to take care of her own needs. Regarding relationships with previous generations prof. Rubene comments:

> "[Nowadays] the age hierarchy in society is collapsing in the digital era – younger is smarter. Parenting has always occurred with a view to the past – *How did you, Mom, do it?* This is not the case today in digital culture."

As a result, the strain on relationships between mothers and their mothers is inevitable; new mothers have the opportunity to quickly educate themselves, gain evidence-based information on child-rearing that may not always coincide with traditional techniques, passed down for generations.

Discussion

The 'deep story' of new, contemporary mothers, living in Latvia, in respect to parenting techniques and child-rearing methods of previous generations, e. i., their mothers and other women, who brought up children in Soviet Latvia, is of inner conflict – a struggle between gratitude and

resentment, guilt for not following the footsteps of one's mother and spite for doing things one's own way. Contemporary mothers do not hold women of previous generations as 'idols' for parenting styles, and want to pursue a more gentle, respectful and child-centred approach to child-rearing. While in general they value the toil of their mothers and acknowledge the physical difficulties they had to face, they do not consider contemporary motherhood to be any easier – even with technological advances of 30 years, motherhood still is hard. However, contemporary mothers feel that a large part of society considers them 'whining' and 'fussing over nothing'. Motherhood in the 21ˢᵗ century faces new problems ('intensive mothering', societal norms and pressure from society etc.) while having to deal with many obstacles that are familiar also to women, who raised children in Soviet Latvia ('double shift', etc.).

The feelings and emotions of contemporary mothers – their fears and resentments, as well as gratitude and respect for mothers of Soviet Latvia – echo in the thematic analysis of comments of a viral *Facebook* post, expressing a subjective view on 'spoilt' contemporary mothers in comparison to the back-breaking hardships of a mother in 1985. Conflicting discourses emerge, as some feel that contemporary women 'have it easy' and 'do not know what real problems are', some insist that these experiences simply cannot be compared, and some express the stress and pressure of modern motherhood that exceeds the physical difficulties in Soviet Latvia.

The study gives qualitative insight into the emotional world of new mothers in the 21ˢᵗ century in Latvia in respect to relationships with previous generations of parents. Bearing in mind (1) the low, even diminishing birth rates (CSB, 2020), (2) high percentage of divorce rates (CSB, 2020), which, especially regarding families with children, are more often initiated by women (Trapezņikova, et al., 2019), (3) still pressing load of household and childcare chores, (4) lack of support to young families from close relatives (only 13% of new families with children not living together with close relatives receive regular support in form of childcare (Trapezņikova, et al., 2019), and other factors, motherhood is still a hard challenge for women. As the struggles of contemporary mothers are not always acknowledged by society, all the while the pressures of 'intensive motherhood' are accumulating and traditional family roles are still cause for argument at home (Putniņa et al 2015), women are left to deal with burdens of motherhood often alone, in silence – so not to 'whine', offend or sound 'ungrateful', thus, slowly 'burning out'.

The study has limitations as the sample of women participating in the study could be broadened, including women from more rural regions, with secondary education etc. The thematic analysis could also be extended to more *Facebook* posts, to enrich the results and elaborate on the motivation

behind agreeing or disagreeing with the premise that 'contemporary motherhood is easy in regard to motherhood of previous generations'. The study also may be transformed into longitudinal research, measuring the 'temperature' and possible changes in regard to pressure from society in a few years' time. Lastly, it would be fruitful to extend the sample and include views of women, who have mothering experience in Soviet Latvia, to understand their feelings towards motherhood then and now.

Conclusions

The unspoken truths of contemporary mothers towards their mothers unfold in a 'deep story', filled with conflicting emotions and subjective pondering. In the hearts of (some) contemporary mothers, the hardships mothers of previous generations had had to bear were physically more difficult, but the challenges of 21st century motherhood are not dismissable as well. The pressure of 'intensive mothering' – devoting all of mother's free time, energy and resources to the wellbeing of the child, while leaving one's own needs often unattended –, practising respectful parenting, based on trust and emotional intelligence, as well as the burden of 'second shift' at home, leaves 21st century mothers as exhausted as women 30 years ago. Contemporary mothers want to raise their children differently that their mothers had raised them; some feel resentment towards their own mothers, some would even like an apology for past wrong-doings, but some are convinced that their mothers did the best they could with tools at their disposal. Still, 21st century mothers feel that part of society and even their own mothers judge them as failing to employ discipline, 'whining' about nothing, and not appreciating the 'good life' they have. However, many feel that these mothering experiences cannot be compared by different generations. Motherhood is a hard, but gratifying journey, and mothers need emotional and physical support no matter what.

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YOUNG PEOPLE'S MEDIA LITERACY: RESEARCH AND POSSIBILITIES OF THE EDUCATIONAL SYSTEM

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ABSTRACT

The number of risks that young people may face when using the Internet and other information channels is increasing every year. Disinformation, data fraud, information bubble as an effect of social media algorithms, and negative impact on mental health are some reasons why media literacy education has become particularly relevant in recent years. Also, in Latvia, starting from the 2020/2021 school year, a new standard of education has been introduced.

The article aims to provide insight into two issues interrelated with young people's media literacy – its research in Latvia and its possibilities to improve how media literacy is included in the formal education system. The study consists of the analysis of the documents – the regulations of the Cabinet of Ministers, which determine the educational standards in the stages of basic and secondary education, as well as the analysis of media literacy studies conducted among young people in Latvia and published over the last five years.

Studies on media literacy among young people in Latvia have some gaps which determine that currently, it is more difficult to predict young people's exact and current needs in terms of media literacy. Although media literacy is represented in the newest educational standard for basic and secondary education, the main concern is the actual implementation of this standard in work with students, as there is still a lack of official supporting methodological materials and regular and systematic teacher education (including life-long education) in media literacy in Latvia.

An article could be helpful for education policy and media policy planners, practitioners, researchers, and organizations/institutions working in the media literacy field.

Keywords: *youth, young people, media literacy, formal education, curriculum, research, teachers*

Introduction

Some information environment risks are related to the fact that accessing content and using various applications has become almost intuitive, it does not require much knowledge, such as consuming content on Youtube or

TikTok, but the problem is that although the use is intuitive, evaluating content is not – it requires specific knowledge of the media environment, manipulation of information to recognize such attempts, assess the purpose of the published content and other factors. The information environment itself is not geared towards promoting ethical use, given that the algorithmic performance of the social media platforms works on profit-making (rather than advancing the most reliable content). Cyberbullying and the psychological effects of social media use on self-esteem, and mental health, misinformation and disinformation, potential risk of data fraud, and other topics and threats to internet users are not the only reasons why media literacy education should receive special attention.

In the USA, the report found that "between 2019 and 2021, the total amount of screen media used each day went from 4:44 to 5:33 among tweens and from 7:22 to 8:39 among teens. This is a much faster increase in just two years than was seen in the previous four years." (Common Sense Media, 2021). Namely, tweens are children between the ages of 8 and 12, and the next age group is 13–18. The amount of time in hours and minutes indicates that a significant part of young people's day is being spent in a digital environment using content for which we cannot be sure of its reliability and quality, as well as participating in the creation of the content themselves.

The last decade has also shifted what is considered trusted among young people. The results of a 2016 survey show that 40% of young Youtube users in the United States believe that their favorite Youtube content creator understands them better than their real-life friends (O'Neil-Hart & Blumenstein, 2016). Without going into the reasons for such results, the impact of digital content creators on young people's audiences is clear. Still, some studies suggest that trust in content created by influencers or internet celebrities may harm health. For example, in 2020, a team of researchers from the University of Glasgow and the University of Liverpool analyzed the activities of nine bloggers in the United Kingdom in a pilot study and found that eight out of nine bloggers offer recommendations on fitness and nutrition that were misleading and not based on scientific advice (Sabbagh et al., 2020).

A survey of 14–18-year-olds in Spain shows that young people tend to share content related to their interests on WhatsApp, regardless of its veracity. However, the encouraging part of the results reveals that an important factor is the value of information (newsworthiness) and its importance to society– the desire to gain popularity or entertainment purposes is a less important reason why young people share information via messaging apps. However, sometimes behind the intention to supposedly "inform others," other motives can also be hidden, for example, to express one's belonging and search for identity (Herrero-Diz, Conde-Jiménez & Reyes de Cózar, 2020).

These are just a few examples of changes in the media landscape and its use among young people. As media use patterns change, the education system tries to adapt and provide training to critically evaluate information and other media literacy sub-skills and knowledge on media. However, the adjustment process is not quick and easy. Latvia has transitioned to so-called competence education, starting from the school year 2020/2021. However, there are still several problems at the system level with the inclusion of media literacy in the curriculum, both in education standard documents and in its practical implementation in the classroom with students. Therefore, the article addresses the issue of youth media literacy in the context of its research in Latvia (research results and methodological shortcomings) and opportunities to improve the development of media literacy through formal education.

The article aims to provide insight into two issues interrelated with young people's media literacy – its research in Latvia and its possibilities to improve how media literacy is included in the formal education system. To this end, three research questions have been raised:

1. What are the characteristics of youth media literacy research conducted in Latvia?
2. Do they provide comprehensive answers about youth media literacy that could be used to develop and improve educational content to adapt it to the real needs of young people?
3. How is media literacy included in Latvia's latest educational standard documents?

In this article, the term "young person" is used in the sense of the Youth Law of the Republic of Latvia to denote a person aged 13 to 25 (Saeima, 2008). Most of them are young people who have been acquiring education for at least some time, for instance, basic education is compulsory in Latvia (Saeima, 1998).

The article is based on the analysis of the documents – the regulations of the Cabinet of Ministers, which determine the educational standards in the stages of basic and secondary education, as well as the analysis of media literacy studies conducted among young people in Latvia and published over the last five years.

In the beginning, the article briefly explains the media literacy concept, followed by an analytical overview of the media literacy research conducted in Latvia and the possibility of using the results in developing educational content. The section on media literacy in the curriculum and the risks associated with its practical implementation in the classroom is followed by a summary of the main findings and recommendations for improving media literacy research for young people and integrating media literacy more fully into the curriculum.

The concept of media literacy

Before looking at the development of media literacy as an element of the educational content of Latvia, it is essential to outline the concept of this term in general. Although the explanation of media literacy is pretty broad and with slightly different interpretations in various sources, the main emphasis is on the ability to access media content and other information, evaluate it independently of the format and channel and create media content themselves.

In the early 1990s, media literacy was interpreted as the ability of citizens to access, analyze and create information for a specific purpose (Aufderheide & Firestone, 1993). Later, the understanding of media literacy expanded to include a broader understanding of the context of the era and its implications for the media (and vice versa – assessing the impact of the media on society, for example, in shaping societal values or increasing/reducing stereotypes, etc.) (Rubin, 1998).

There are several approaches to structuring the broad field of media literacy 1) by skills, 2) by topics, and 3) by concepts (e. g., visual literacy, film literacy, news literacy, etc.). Due to the limited volume of the article, the article provides a brief look at the first two. The academic environment and practitioners from the media, non-governmental organizations, etc., contribute to the development of the concept. For example, the German media "Deutsche Welle" offers to structure the term by splitting it into five general media competencies (Braesel & Karg, 2017):

- **Access to information and media** (find relevant information, check facts, find sources, and statistics);
- **Ability to analyze information** (for example, why data is presented from a certain point of view, why specific people are interviewed in the article, to check the sources, etc.);
- **Create content** (write social media posts, create articles, audio, and video materials);
- **Reflect on / reflect on content** (to understand media user's responsibilities, to think about how journalistic material could be created better, to assess whether there are any hidden motives behind any information);
- **Act and react after concluding** (consciously consume and create media content, report disinformation and hate speech on social media, protect one's data online, etc.).

Considering this explanation of media literacy competencies and comparing the results of the survey conducted in the Baltic States, it can be concluded that the latter competency could be one of the least developed among young people. Namely, an online survey conducted by Samsung

Electronics Baltics between April 10 and April 20, 2022, in collaboration with the research agency Norstat, which involved 909 participants aged 15 to 25, shows that almost half (47%) of young people surveyed in the Baltic States when faced with false information on social media, choose to ignore it (LV portal, 2022).

Taken thematically, the field of media literacy includes issues related to information literacy, such as respect for copyright, non-plagiarism, the ability to find the information needed, and the analysis and understanding of different media formats: image, audio, and audiovisual content, knowledge about social media performance, hate speech, advertising, and many other field-related topics. Thomas P. Mackey and Trudi E. Jacobson (2014) propose the concept of "metaliteracy," a comprehensive model for information literacy to advance critical thinking and reflection about one's skills in these fluid and networked spaces. They write: To be "metaliterate requires individuals to understand their existing literacy strengths and areas for improvement and make decisions about their learning. The ability to critically self-assess different competencies and recognize one's need for integrated literacies in today's information environment is a metaliteracy." It follows that not only mechanical media literacy application is required but also the individuals' ability to critically assess their competencies and skills, identifying gaps and needs for integrated literacies which are necessary, for instance, while using social media where digital skills and those, for example, related to the evaluation of visual and audiovisual content, including, advertising, converge.

In conclusion of this section, several factors are important – people's ability to use the media, critically evaluate and analyze information, look at this information from a broader perspective and understand the interplay between society and media, media and freedom of expression, diversity of opinion and democracy, as well as the ability to create media content themselves. As the media environment changes, so does the understanding of media literacy. However, even if there is no single interpretation of the concept and it is explained slightly differently (for example, in the UNESCO approach, media literacy is considered together with information literacy (Grizzle et al., 2013)) and depends on the conciseness or breadth of the definition, as we will look further in the section on media literacy in curriculum, it includes sub-skills that are common for various perspectives.

Youth media literacy in Latvia: research gaps

Before addressing media literacy in the curriculum, it is crucial to outline the context briefly. Studies available on Latvian youth media literacy could help understand the possibilities of using scientific data

to provide recommendations for education programs. However, after analyzing studies on Latvian youth media literacy, several shortcomings are identified, making it difficult to see an accurate picture of young people's knowledge and skills related to various forms of media.

To begin with, there are insufficient numbers of such studies. The last comprehensive publicly available media literacy survey for children and young people (9–16 years old) conducted with survey and qualitative interviews was commissioned by the Ministry of Culture of the Republic of Latvia in 2017 (Kultūras ministrija, 2018). Its data are seriously outdated, given that the consumption of digital content has developed and applications that have come to the fore have also changed over the years (for example, nowadays, popular social media TikTok in this research was represented by its predecessor app Musical.ly).

A group of young people between the ages of 15 and 24 is included in the representative surveys of the Ministry of Culture and the National Electronic Mass Media Council, which take place with some regularity every few years but do not cover the full range of questions relevant to the decision-making about media literacy education. More up-to-date data are provided by studies carried out by private companies, non-governmental organizations, and initiatives. However, they usually only cover a narrow range of issues, such as the interaction between young people and digital content creators (influencers), and cannot be proud of a representative sample. Most often, these are online surveys with 150–300 respondents. However, they also allow insight into the research topic.

At the same time, there is a lack of publicly available data obtained by the qualitative research approach, as the results are primarily based on self-assessment by children and young people, which may not provide an accurate picture of precise information evaluation skills, knowledge, viewpoints or screentime of applications (unless time tracking is used on the devices) that can only be clarified by researching the topic in depth.

Another problematic aspect is the relatively narrow understanding of media literacy, which is reduced to 1) trusting information from friends and acquaintances and social media and 2) sharing information without first checking it. This is also the case for representative surveys, where the youngest age group is 15–24. For example, the latest media literacy survey of the Ministry of Culture of the Republic of Latvia (2020) found that 64% of 15–24-year-olds believe in information that can be found on social media (e. g., Facebook, Twitter, TikTok, Instagram, etc.) and 55% share information without checking it. Although the wording of the survey question might raise discussion, the absence of qualitative data means that quantitative surveys provide only a percentage that can be interpreted differently and can only partially help plan media literacy education.

Among the research on youth media literacy, there also is the study by philosophers Ģirts Jankovskis and Maija Jankovska, "Being There and Together: Media Habits of Teens in Latvia" (Jankovskis & Jankovska, 2016) and the study of society researchers Aivita Putniņa, Artūrs Pokšāns, and Māris Brants who focus on gambling addiction, social media addiction, computer gambling addiction and the prevalence of associated behavior and its influencing factors among the Latvian population (Putniņa et al., 2019).

Longitudinal research on youth media literacy has not been conducted in Latvia. It is a valuable experience to learn from United Kingdom's communications regulator Ofcom, which follows how young people's young media usage habits change over time, revealing new trends and potential challenges, including what media are preferred and what practical content consumption, analysis, and creation skills children have at a certain age (OFCOM, 2021).

Thus, concluding youth media literacy research in Latvia, it must be supposed that there is currently a lack of up-to-date research data about Latvia to supplement discussions on media literacy issues and skills to be included in the curriculum as achievable results. The next chapter discusses how media literacy is already included in the content of formal education in Latvia.

Media literacy in educational standard

Informally called competence education, the new education standard came into force in Latvia starting the school year 2020/2021. In 2018 and 2019, the government (Cabinet of Ministers) adopted two documents: regulations No. 747 "Regulations Regarding the State Basic Education Standard and Model Basic Education Programmes" (Ministru kabinets, 2018), and regulations No. 416 "Regulations Regarding the State General Secondary Education Standard and Model General Secondary Education Programmes" (Ministru kabinets, 2019).

Six main transversal competencies are to be developed in all study courses. Media literacy is not among these six key competencies but is related to the following competencies – critical thinking and problem solving, civic participation, and digital skills. Although the concept of media literacy as a word cannot be found in these documents and their annexes that define the results to be achieved, several achievable results are relevant to it – formulated with the help of verbs such as analyze, evaluate, select, choose, etc.

Compared to a situation a few years ago, when educating students in media literacy was only a voluntary step for the most enthusiastic teachers, an effort has already been made (Locmele, 2021). Learning outcomes,

mainly related to media literacy, are covered in languages, civic and social learning, cultural awareness, and self-expression in the arts and technology field. For example, in language learning, there is a module, "Media, language and influence," which explains how media construct reality and influence society's perception of the world with encouragement that we can detect effects and manipulation techniques with an in-depth analysis of language tools used in the media. Zane Oliņa, implementing director of School2030 curriculum at the State Centre for Education ESF project "Competency based approach in the curriculum," in a high-level international conference "Media literacy" organized by the National Electronic Media Council in the autumn of 2021. Roadmaps" pointed out that Latvian language teachers have the most significant role in promoting media literacy, as the most extensive set of achievable results is in the field of languages (Oliņa, 2021).

Here are some media literacy-related achievable results in social and civic learning areas:

- Students create digital identities and social use the media responsibly
- Students analyze information from a variety of sources, including the media, and make reasonable arguments
- Students understand the functions and role of media as the fourth power (along with the three state powers – the executive, the decision-making, and the judiciary power).
- Students can find and select facts
- Students understand the impact of the media on politics, the social sphere, public opinion, individual and cultural identity, values, etc.

These skills indicate a relatively diverse understanding of media literacy. However, currently, there is no certainty about implementing the new standard in the classroom with pupils, as in June 2022, no official methodological material has been prepared for the inclusion of media literacy in classroom lessons. Also, teacher training is fragmented, depending on the projects and short-term initiatives, not in a systemic way with a certain regularity. International partners have significantly contributed to teachers' media literacy development. For instance, the Embassy of the United States has supported several teacher training projects at the non-governmental organization Education Development Center. The IREX Baltic Media Literacy Program at the University of Latvia has prepared 16 media literacy lesson plans and tasks for grades 7–9 and 10–12. The Baltic Media Excellence Center and the Latvian Safer Internet Center, among other organizations, also should be mentioned because of their investment in teacher education.

Initiatives of local governments and planning regions to organize media literacy courses for teachers are also worth noting. Although teacher training financially supported by the Ministry of Culture is also provided,

it is addressed to a relatively small number of teachers (the Latvian Media Policy Guidelines for 2016–2020 set the minimum number of teachers to be trained at 35), taking into account the small annual funding of 2598 EUR in recent years (Ministru kabinets, 2016). This may change in developing a new document for the next period, as the previous Latvian media policy guidelines 2016–2020 and their implementation plan ended two years ago.

The survey of the Latvian population shows that teachers are mainly named as a group of society to address media literacy education (teachers (58%), pupils (52%), students (39%), journalists (30%), seniors (26%) (Rožukalne et al., 2020). Although the results of this survey show an uncritical view of society on its skills and knowledge, one could agree that teachers are essential ambassadors for media literacy. Less than ten years ago, James Potter (2013) pointed out that for the need to train teachers in media literacy, their workload should be reduced, referring to research showing that it takes an average of two years to prepare teachers for teaching media literacy themselves. Besides, support should be continued with up-to-date information and materials, rather than leaving the further development of media literacy to the teachers themselves (Potter, 2013). In Latvia, currently, teaching media literacy means taking responsibility for themselves in search of materials and methodology. However, it is planned that in the following months National Electronic Mass Media Council will establish an online repository with topic-related materials made in Latvia. Teachers also might benefit from content aggregation in one place.

The family of young people and the worldview, media usage habits, and opinions obtained from the close circle are also essential factors determining media literacy skills and viewpoints (Potter, 2013), such as the opinion on the necessity of independent media, support for conspiracy theories, etc. Therefore, it is crucial to work with the whole family in media literacy education, involving parents in the activities organized by the school, so that the acquisition of media literacy takes place both at the micro-level in the family and at the macro-level – in public education.

Teachers are not the only ones who can help students to acquire the skills and knowledge in educational institutions. Librarians can also play a vital role in media pedagogy, assisting the teachers in finding ways to promote media literacy in their subjects, inspiring and supporting students in accessing, evaluating, and developing their information, including by engaging young people in media literacy and offering binding examples (Kine & Davidsone, 2021; Hernandez, 2018; Malmberg, 2014).

It is also a question worth exploring on how to reach out to young people who are outside the education system for some reasons or have health problems that allow them to use the media but determine difficulty

evaluating information critically, or are with functional impairments such as hearing or vision problems which means that media literacy educational content should be available in a variety of formats.

Conclusions

The article provides answers to all three research questions. Few studies on media literacy among young people in Latvia have been published in the last five years. Most of them are surveys conducted by companies or private initiatives on a narrow range of questions and a relatively small number of respondents. Young people are one of the age groups (15–24 years old) in media literacy studies commissioned by public authorities. However, they also represent a group of young people with less than two hundred respondents, which following the principles of representative sampling, can be characterized as too narrow, and address general media literacy and media use issues without specializing in topics that could be more conducive to improving educational standards. It should also be noted that most studies are quantitative without offering a deeper explanation of the results.

Therefore, when developing the Latvian Media policy guidelines and their implementation plan for the next period, it would be desirable to envisage not only a general media literacy survey of the Latvian population but also a media literacy survey for children and adolescents (or youth) and funding from the state budget at least once every three years. To summarize the answer to the second question of the study, as the data is outdated, it is more difficult to predict young people's exact and current needs to improve their media literacy, but this can be deduced, for example, from research abroad. However, the context varies slightly from country to country.

Summarizing the answer to the third research question on whether and how media literacy is included in the latest educational standard documents in Latvia – in the educational standard, which was introduced at the start of the 2020/2021 school year, media literacy is not one of the transversal competencies. However, it is linked to competencies such as critical thinking and problem-solving, civic participation, and digital skills. There are several media literacy issues among the learning outcomes, especially in language and social and civic fields of study. However, the main concern is the actual and practical implementation of this standard in classes with students, as there is still a lack of supporting methodological materials and regular and systematic teacher education in media literacy in Latvia. Training is mainly fragmented and dependent on project funding from international partners, NGOs, etc. Although the media policy planning document prepared by the Ministry of Culture provides funding for teachers' media literacy training, it is too small (approximately two

and a half thousand euros) to provide comprehensive and complimentary training on the rapidly changing media environment and media literacy education methodologies. The situation could be improved if funds were delivered from the state budget and a system for conducting training was established.

James Potter points out that three principles are essential in promoting media literacy in formal education – curriculum design, teaching, and assessment (Potter, 2013). In Latvia, we should develop all these three factors. Formal education is not the only source of media literacy for young people. However, it is one of the most important in assessing the possibilities of covering young people and providing media literacy education systematically rather than fragmentary.

However, there are also opportunities to address and reach young people in non-formal education. The Ministry of Culture organizes various media literacy events for young people in cooperation with non-governmental organizations, state and local government institutions, such as the National Library of Latvia and municipal libraries, universities (including those where students can take media literacy courses, such as the University of Latvia, Vidzeme University of Applied Sciences, Riga Stradiņš University), as well as non-governmental organizations (Safer Internet Center of Latvian Internet Association, Latvian Debate Association, etc.), international partners (IREX, British Council, Nordic Council of Ministers, Goethe Institute in Riga), various initiatives of private companies and media, including public service media. The cooperation of all these actors and the provision of educational activities at all levels are essential for successful and complementary media literacy education. However, media literacy in formal education is at its core.

Although, in general, young people are relatively easier to reach with educational content than other groups in society, there are still some challenges, including how to address those:

- who have already completed formal education and are passive (do not attend seminars and events devoted to this topic) and do not use the Latvian language media to be reached by campaigns in media?
- who have dropped out of the educational process (e. g., with incomplete or only basic education – nine grades)?
- who have functional visual, hearing, or other health problems that make it difficult to perceive/understand information while using media content?

This paper gives an initial summary of opportunities to promote media literacy through the education system in Latvia. The topic can be developed in several directions – first, by finding out the opinion of teachers, interviewing or conducting focus groups with them to research how media

literacy is practically invented in the classroom, and looking at the experience of different schools (Riga and Latvian regions) and teachers' needs for support such as media literacy materials and its preferred content.

Secondly, conducting a study of young people's media literacy, which, among other things, involves questions about media literacy education. A media literacy survey of children and adolescents (9–16 years old) accompanied by interviews conducted in 2017 revealed that only rare issues of media literacy and digital literacy were covered at school; young people learned them primarily through self-study or with the help of friends and family members (parents or older siblings). In 2022, a master's thesis was defended at the Department of Political Studies of the University of Latvia, which traces the level of media literacy of Latvian students and the factors influencing it, including the language of instruction (Rutkis, 2022). Thus, there is an opportunity to develop this topic in pedagogy, communication science, and even politics, studying the content of education itself, the media policy implemented by the state, and teachers and pupils/students as recipients of media literacy education.

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DIGITAL TRANSFORMATION IN HIGHER EDUCATION: DRIVERS, SUCCESS FACTORS, BENEFITS AND CHALLENGES

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ABSTRACT

Digital transformation (DT) is rapidly penetrating all spheres of human life, and higher education is no exception. This process is inevitable and ensures competitive advantage and other benefits for Higher Education Institutions (HEI) in case of success. Due to the COVID-19 pandemic, HEIs worldwide were forced to completely transform their working methods and go digital in a very short period. Some institutions are more successful in this transformation by possessing the ability to overcome DT challenges and combining internal and external success factors.

This research aims to identify what drives digital transformation in Higher Education Institutions, what benefits are there for them, what challenges they need to overcome, and what are the success factors of digital transformation in higher education.

Design/methodology/approach – The current study employs a two-phase methodology: an umbrella review of scientific literature and a synthesis of independent experts' opinions using the Delphi method.

Findings – The research has identified several drivers, benefits, success factors, and challenges of digital transformation in higher education not mentioned in the previous literature. A few drawbacks of digital transformation were also recognized during the study. The COVID-19 impact on DT in HEIs was briefly discussed.

Research limitations/implications – The theoretical conclusions are based on the results of an umbrella review of the literature, which were then compared with the experts' opinions. Future research shall be performed by analysing the current research findings with the findings from other empirical studies on the topic. More in-depth research is recommended in the field of digital transformation drivers and the adverse effects of digital transformation in higher education.

Practical implications – The research results allow management and academic personnel to have a fresh look at the factors that foster or hamper the digital transformation and further development of Higher Education Institutions.

Originality/value – The research complements the body of knowledge about the drivers, enablers, and effects of digital transformation in higher education which are not studied

widely enough in the existing literature. The findings of the study provide new insight into the development of higher education in the light of digital transformation.

Keywords – *Benefits, Challenges, Digitalization, Digital Transformation, Drivers, Higher Education, Success Factors, University*

Introduction

Digital transformation nowadays is one of the most important megatrends imposing changes and disruptions in the labour market, industries, and educational system (Mello et al., 2020), calling into question the traditional ways of interaction and interdependencies among businesses (Subramaniam et al., 2019). Digitalization has become an inevitable part of any sphere of human activity with the development of digital technologies and under the constant pressure from the external environment. It is essential for a business to stay competitive, thus looking for ways to reduce costs while at the same time offering new products and services to the clients. Government and public sector organizations are forced to become digitalized, making their services more accessible to the general public (Mergel et al., 2019), especially during COVID-19 caused restrictions and lock-down. The culture and entertainment sector undergo digital transformation following social trends and becoming boundless. E-commerce adds its share to the global digital transformation trends, changing the basics of the trade entirely. Aconsiderable share of marketing and communication is being done in the digital environment and by digital means. Even the travel industry, which seemed unreal a few years ago, is undergoing a digital transformation; travel moves to the digital world too. Digitalization opens vast opportunities in the field of medicine, making it more accessible to the entire population regardless of geographic location and helping to overcome various restrictions, including those caused by COVID-19. Digitization of processes leads to improving products and services and enhancing organizational changes (Mergel et al., 2019). Businesses and organizations are forced to re-think and re-envision their operational processes, customer experience, and business models leading to digital transformation (Westerman et al., 2011). Digital transformation involves "a progressive re-thinking of the use of advanced technologies and the ways to use technology to bring about progress in people's lives and processes" (Asad et al., 2021).

The transition to a digital environment is possible due to rapid technological advancements being integrated into various areas, including education. The education sphere is going through a real digital transformation that began long before the COVID-19, driven by the opportunities that new digital technologies offer, social trends, competition, stakeholders' requirements,

and needs to become more efficient (Benavides et al., 2020). COVID-19 has undoubtedly served as a powerful accelerator in this process, causing a massive and rapid shift towards online learning, usage of online learning tools, remote work, and the change of the curriculum. As a response to the crisis, new strategies needed to be developed to employ more innovative solutions (Ratten, 2020). Schools, Higher Educational Institutions, vocational education establishments, adult learning, and business training firms were forced to quickly adapt to the new reality by employing digital technologies and completely transforming teaching and learning processes.

Due to increasing competition for the best students, teachers, and researchers, Higher Education Institutions shall be at the forefront of digital transformation processes, pioneering in the implementation and the related research (Benavides et al., 2020) as they develop new knowledge capabilities that may become a valuable source of innovation (Ratten, 2020). HEIs are constantly looking for innovative ways of teaching and learning, and how to use technologies to advance educational settings (Asad et al., 2021). In response to the COVID-19 crisis, new online knowledge delivery models were created, enabling more knowledge to be used in a digital format, thus making it more accessible in a timely and practical manner (Ratten, 2020). The former teaching methods have become obsolete and these no longer meet the needs of students; the traditional in-class face-to-face learning is considered monotonous and unproductive, while the online environment makes learning more flexible and decentralised, yet engaging and more dynamic (Mello et al., 2020).

Digital transformation in Higher Education Institutions can be viewed from different perspectives – as social, organizational, and technological change and has several dimensions: teaching, infrastructure, curriculum, administration, research, business process, human resource, extension, digital transformation governance, information, and marketing (Benavides et al., 2020). It can also be viewed as a link to changes in organizational structure, strategy, and adopted technology to align systems and practices with the new demands of the digital era (Alenezi, 2021).

Digital transformation is impossible without a clear strategy (Vindaca& Lubkina, 2020); it is crucial to understand DT's drivers and potential benefits for Higher Education Institutions and their stakeholders. For digital transformation to succeed, the barriers and success factors must be considered before and during the implementation process. The research conducted among 500 managers and teams working on digital projects at Higher Education Institutions in United Arab Emirates (UAE), for example, shows that team and individual traits, team integration, process, and technology significantly positively affect digital transformation in HEIs (Bettayeb & Al Marri, 2021). Digital transformation in Higher Education

Institutions may have certain drawbacks and negative impacts to be considered, e. g., the limited possibilities to replace real-life experience in an online environment and limited socialization opportunities (Ratten, 2020; Popova et al., 2020).

Due to the complexity caused by several internal and external factors, e. g., changes in demands for education, decreasing number of students, and increasing operational costs, the digital transformation process in higher education becomes very challenging (Alenezi, 2021). Although there are already several studies on the drivers, benefits, success factors, and barriers of digital transformation in higher education that had been identified in the previous literature, and the number of studies on the subject has accelerated during the last two years, there is still no concept unifying all aspects of digital transformation in higher education. Very few research mentions the negative impact of digital transformation in higher education, broadening global social inequalities is being one of them (Erdmann et al., 2021). By performing an umbrella review of the literature followed by an empirical study, the authors tend to cover this gap.

Methodology

Umbrella review

To get an overview and clear understanding of what is already known about the digital transformation drivers and success factors in higher education; the barriers that may hinder the process, and the benefits that are already identified in the previous literature, an umbrella review – a review of literature reviews (Booth et al., 2012) as a method was selected. An umbrella review allows synthesizing the knowledge that already exists and can be used in practice and what is unknown, providing insight for further research directions (Grant & Booth, 2009). The method was chosen as it allows to highlight the reviews covering a broad problem and aggregate findings from the previous studies that have already addressed the specific questions.

For the search for literature reviews, the electronic databases Web of Science (WoS) and Scopus were used as the most comprehensive scientific information databases containing high-quality publications in various fields of knowledge. The authors conducted the following search: ("digital transformation*") AND ("higher education institution*" OR universit*) AND ("systematic literature review" OR "SLR" OR "systematic mapping"). Only literature review articles in the English language were considered. The search resulted in finding 43 literature reviews. After removing duplicates, 29 articles were left for further review. After reading the full text of the articles, only 12 articles were found to qualify for further analysis.

Delphi method

The Delphi method provides a systematic approach to building consensus. The Delphi method is based on a research question assigned to a selected group of experts according to their knowledge and expertise. The panel completes several questionnaires to develop and narrow the criteria in response to a particular question. The Delphi method is a purposeful way to serve as a basis for decision-making. It creates consensus and generally answers research questions. The Delphi method has three main features – anonymity, controlled feedback from the interaction, and statistical group response. It is valuable that the method is anonymous, as it reduces the likelihood that the status of more influential group members could divert other members' responses. (Olsen et al., 2021). For the Delphi method, a group of experts (five male and five female) from Higher Education Institutions in the positions of lecturer, associated professor, professor, and education quality experts from Latvia, Lithuania, Netherlands, Belgium, Saudi Arabia (but teaching also in UK and USA), Finland and Slovenia were asked to complete the questionnaires. In the first round, they were asked to identify the drivers, benefits, success factors, barriers, and drawbacks of digital transformation in higher education. Additionally, they were asked "What do you think would have been a scenario for digital transformation in higher education if the COVID-19 pandemic would not have happened?". In the second round, they were asked to prioritize the identified aspects. However, Kendall's coefficient of concordance W varied from 0.20 to 0.26; therefore, the third round of the questionnaires was performed with W ranging from 0.54 to 0.66.

Results

Umbrella review findings

The research shows that there are many drivers for digital transformation in higher education and that this transformation benefits Higher Education Institutions, students, and the whole society. The success of the transformational process depends on the various factors and on the ability of the institutions to overcome specific barriers. The research also revealed some disadvantages of DT in HEIs.

Drivers

The main drivers for digital transformation in HEIs, according to the results of an umbrella review of the selected literature, is the need to provide students with digital skills and capabilities according to the demands of the current labour market and the digital world, as well as the need for HEIs to optimize their processes and to adapt to the changing legislation and business environment to stay competitive. Table 1 represents the findings on the drivers of DT in higher education.

Benefits

There are numerous benefits from digital transformation in HEIs described in the selected articles, the main ones being the flexibility of studies and the opportunity to ensure high-quality student-centred learning at the same time improving productivity and operational activities (see Table 2).

Table 1. Digital transformation drivers in higher education

Source	DT drivers
Matkovic et al., 2018; Benavides et al., 2020	Availability of digital platforms and content for teaching, learning, and research
Benavides et al., 2020	Contemporary educational standards
Llewellyn, 2019; Benavides et al., 2020; Mello et al., 2020; Alenezi, 2021	Flexible response to the needs of the labour market requiring digital literacy and digital skills
Benavides et al., 2020; Alenezi, 2021	Students' demands and expectations (improved student experience, digital curriculum, unrestricted 24-hour access to all information)
Benavides et al., 2020	The opportunity to study without the barriers of time and space
Sanchez, 2020; Benavides et al., 2020	New social requirements, legislative and regulatory changes,
Kopp et al., 2019; Sanchez, 2020; Alenezi, 2021	Competition
Ratten, 2020; Alenezi, 2021	COVID-19 crisis
Matkovic et al., 2018; Sanchez, 2020; Alenezi, 2021	The need to simplify operations and increase efficiency

Table 2. Digital transformation benefits for higher education

Source	DT benefits
Benavides et al., 2020; Alenezi, 2021	Innovative pedagogical methodologies
Drieschner et al., 2019; Vindaca & Lubkina, 2020; Sanchez, 2020; Ratten, 2020; Benavides et al., 2020; Alenezi, 2021	A flexible and personalized student-centred learning environment
Benavides et al., 2020; Alenezi, 2021	Improved existing operations
Benavides et al., 2020	Enhanced productivity
Kopp et al., 2019; Benavides et al., 2020	Costs saving for students and HEI
Drieschner et al., 2019; Mello et al., 2020; Alenezi, 2021	Improved quality of learning
Llewellyn, 2019; Mello et al., 2020	Unlimited in time access to information
Alenezi, 2021	Enhanced collaboration and engagement
Alenezi, 2021	A higher number of instructors, teachers, experts, and speakers can be accessed globally.
Drieschner et al., 2019	Improved students' performance

Success Factors

The success of digital transformation depends on many internal and external factors (see Table 3), the most important being the digital strategy, leadership, and communication, decisions based on data, digital business models, and the availability of digital solutions and infrastructure.

Table 3. Success factors for digital transformation benefits in higher education

Source	DT success factors
Benavides et al., 2020; Alenezi, 2021	Teachers' ability and willingness to innovate
Benavides et al., 2020; Ratten, 2020; Vindaca & Lubkina, 2020	Digital infrastructure for teaching (digital and learning platforms)
Benavides et al., 2020	Reorganization of administrative units
Drieschner et al., 2019; Benavides et al., 2020	Digital competencies and capabilities for teaching and research
Kopp et al., 2019; Drieschner et al., 2019; Benavides et al., 2020; Vindaca & Lubkina, 2020	Well planned digital strategy
Benavides et al., 2020	Educational materials created in digital formats
Kopp et al., 2019; Benavides et al., 2020; Vindaca & Lubkina, 2020	Digital business model
Drieschner et al., 2019; Benavides et al., 2020; Alenezi, 2021	Decisions based on data
Kopp et al., 2019; Benavides et al., 2020; Alenezi, 2021	Leadership and communication
Benavides et al., 2020	Self-managed teams in the working environment
Kopp et al., 2019; Benavides et al., 2020; Alenezi, 2021	Technical and pedagogical guidance and support services for teachers and researchers
Kopp et al., 2019; Benavides et al., 2020	The right mindset and shared understanding
Kopp et al., 2019	Availability of financial resources in the budget

Barriers

Many studies are concentrated on DT barriers in higher education. Aditya et al. (2021a), in their state-of-the-art study of the digital transformation barriers in higher education based on a structured literature review, have identified 22 barriers that formed nine categories shown in Figure 1.

The barriers identified in the reviewed literature are represented in Table 4. It is worth noting that the lack of the same factors that are

mentioned as success factors can become barriers. At the same time, the new impacting factors not mentioned before are IT security risks and students' digital literacy.
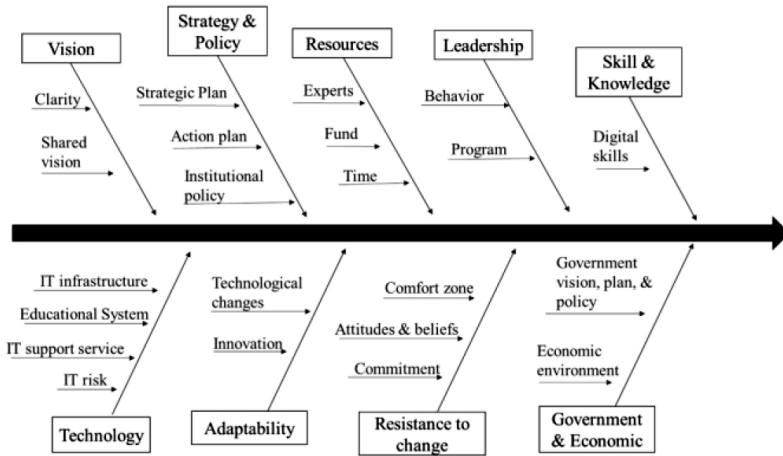
Figure 1. The fishbone diagram of barriers to digital transformation in higher education (Aditya et al., 2021a)

Table 4. Digital transformation barriers in higher education

Source	DT barriers
Aditya et al., 2021a; Aditya et al., 2021b; Alenezi, 2021)	Lack of clear vision and strategy
Aditya et al., 2021a; Aditya et al., 2021b	Institutional policy and strategy, decentralized decision making
Kopp et al., 2019; Sanchez, 2020; Benavides et al., 2020; Aditya et al., 2021a; Aditya et al., 2021b	Insufficient financial resources
Aditya et al., 2021a; Aditya et al., 2021b	Leadership skills and behaviour
Kopp et al., 2019; Aditya et al., 2021a; Aditya et al., 2021b; Alenezi, 2021	The low level of the digital literacy (both from students and teachers)
Aditya et al., 2021a; Aditya et al., 2021b	No innovation or change-oriented mindset
Aditya et al., 2021a; Aditya et al., 2021b; Alenezi, 2021	Human resistance to change
Sanchez, 2020; Aditya et al., 2021a; Aditya et al., 2021b	Government vision, plan, and policy
Aditya et al., 2021a; Aditya et al., 2021b	Economic environment
Aditya et al., 2021a	Educational system

Continued from previous page

Source	DT barriers
Benavides et al., 2020; Sanchez, 2020; Aditya et al., 2021a; Aditya et al., 2021b; Alenezi, 2021	Unsuitable IT infrastructure and support services
Benavides et al., 2020; Sanchez, 2020; Aditya et al., 2021a; Aditya et al., 2021b	IT security risks
(Aditya et al., 2021a) (Aditya et al., 2021b) (Alenezi, 2021)	Lack of human resources
Aditya et al., 2021a; Aditya et al., 2021b	Lack of implementation action plan, lack of time, other priorities
Kopp et al., 2019	Lack of pedagogical skills and experience
Aditya et al., 2021b	Difficulties embedding IT into higher education

Drawbacks

There are certain drawbacks of digital transformation in higher education, like students missing live communication with teachers and fellow students; the same applied to the teachers; the teachers not being able to receive immediate feedback (Popova et al., 2020). However, in the studied literature reviews only a few drawbacks were found (see Table 5).

Table 5. Drawbacks of digital transformation in higher education

Source	DT drawbacks
Alenezi, 2021	Fear that job security is threatened
Alenezi, 2021	Longer than expected return on investment
Sanchez, 2020; Alenezi, 2021	Missing students' interaction and engagement
Sanchez, 2020	Mobile devices as a source of distraction for students
Sanchez, 2020	Lack of time for teachers

Experts' opinion

According to the experts' opinion, the drivers for DT in higher education are (shown by diminishing importance):
1. Increased demand for access to education regardless of physical space/ location.
2. Business agility (need to adapt quickly to COVID-19 pandemic as an example).

3. Technological advancement (availability of modern tools for greater students' experience, a broad range of choices for online learning).

4. Addressing quickly changing labour market needs – pressure from industry and other stakeholders.

5. Innovation as a priority for HEI (managers' personal interest in being innovators or early adopters (innovation diffusion curve); determination to innovate in essence (not only in words, but with a real action plan)).

6. National strategy for education. (Integration of technology usage skills in the study content, which promotes the increase of digital abilities of young specialists).

7. Possibility to use specific digitization opportunities, such as personalized study plans, virtual mobility, and others)

8. Demand for life-long learning.

9. Competition between HEIs to enrol new students into their programs.

10. The usage of technological and scientific developments by competitors.

11. Social e-trends.

12. Opportunity to include students with special needs in the study process.

13. Profitability (costs reduction needs and possibilities, such as increased efficiency of administrative and study processes by using paperless and digital technologies)

As the main driver, the experts consider the increased demand for flexible learning (in industrialized countries to allow a flexible lifestyle; in developing countries due to the immense global need for increasing access to education at all levels), so the study process can be ensured regardless the physical location and can be adapted to the student's needs. Also, the essential factor is the constantly changing external environment and the need for HEI to adapt and stay competitive in the new conditions. Technology development plays an essential role as the DT driver. It provides multiple opportunities to make the study process more effective and efficient in both the cognitive and emotional dimensions of learning.

Digital transformation brings the following benefits for Higher Education Institutions, according to the experts' opinion (shown by diminishing importance):

1. Increased access to education for a diverse group of learners (like working students), also to some extent, regardless of socio-economic background and geographical location.

2. Improved learning efficiency and quality using digital tools, e. g., virtual and augmented reality.

3. Flexibility (the possibility of individual adjustment of the difficulty of study and the time availability of students. Flexibility to continue learning and teaching from remote locations).

4. Cost efficiency (efficient use of resources (teaching, administrative, premises) for the institution and for the learner (including timesaving).
5. Synergy – collaboration, shared learning spaces, methodology, and materials.
6. Competitive advantage (broader possibilities to attract international academics, researchers, and more students).
7. Easy control over the education process (use of technology to track students' progress. Teachers can use the online tools to experiment and provide almost instant feedback).
8. Enhancement in skills portfolio and motivation of students and teachers.
9. Opportunities for self-study in both asynchronous and synchronous modes.
10. Virtual international mobility when the teaching staff and students can get international experience without being physically abroad.
11. Increased responsiveness to external demands.
12. Routine task substitution (some more routine tasks, like teaching and instruction could be performed by AI in the future, while the human brain concentrates on creative development and evaluation).
13. An interactive and engaging online and hybrid teaching/learning experience.
14. Higher learners' employability in the global market through open opportunities for virtual international education.

The main benefits are that digital transformation opens opportunities to get an education at any time, from any location, with the possibility to adjust the learning pace and for very diverse groups of students who did not have such an opportunity due to unavailability of education in a home country, unsuitable time for studies, not being possible to combine studies and work, and the increased quality and efficiency of learning.

Among the success factors identified by the experts, the internal factors and capabilities play a leading role (shown by diminishing importance):
1. Strategic decision about DT based on perceived benefits supplemented with the action plan, policies, and procedures.
2. Holistic approach, involvement of all stakeholders, interdepartmental cooperation/collaboration.
3. Digital tools should be piloted, tested, and evaluated before being taken into wide use in education.
4. Computer literacy of users (teachers and students) and competencies of teaching staff to develop multimedia presentations, online examinations, web-based tests, and other digital tools for online and hybrid classes.
5. Support system for the development of the knowledge and skills of the teaching staff.
6. Transformation of the institution's culture.

7. Appropriate provision of technology, e-tools (Zoom, Microsoft Teams, Google meet, Discord, Moodle BigBlueButton), and workplace equipment for studies and research.
8. Sustainable approach – focus on the long term (not a sprint, but a marathon).
9. Stable Wi-Fi in the country/region.
10. Technology governance model (the strategic use of technologies for business success and risk prevention supplemented with the relevant policies and precise technical specifications for implementing innovations).
11. Availability of learning analytics and open data for research.
12. Effective continuous monitoring of distance teaching and learning, instant communication and feedback.
13. Financial capability of HEI.
14. Adapting obsolete teaching methods to the existing reality of youngsters through digital tools.
15. Support from the government
16. Possession of profound solutions for information security and personal data protection.

As it was also found in the previous research, the strategy is the key for digital transformation for universities and other HEIs supported by the holistic approach, cooperation, collaboration, and involvement of all relevant stakeholders. The quality of digital tools and solutions shall be tested for suitability for the learning process; it is essential to understand the consequences in terms of quality of learning for brain activity and emotional development.

Due to the complexity of HEIs processes and multiple stakeholders, digital transformation may encounter many barriers and challenges (shown by diminishing importance):

1. Lack of clear digital transformation strategy developed by the leaders of educational institutions.
2. Lack of motivation (from managers and personnel).
3. Resistance to change of the involved – people prefer to get acquainted with what they do and reject to move out of their comfort zone.
4. Lack of or insufficient financial resources.
5. Missed culture shifts inside institutions.
6. Insufficient competencies of teaching staff.
7. Misunderstanding the digital transformation as a simple teaching transfer from analogue to digital media.
8. Lack of support system for the development of the knowledge and skills of the teaching staff.
9. Low availability of technologies and e-tools (hardware and software).

10. Legal issues (digital transformation of education on an international level is hampered by the fact that educational matters are within the legal mandate of nation-states, who decide on technical solutions, providers, platforms, and software).
11. Ethical considerations (how to guarantee equal access to digital tools and methods, not to increase a global digital divide between countries).
12. Inadequate payment to teachers for additional work during the transformation.
13. Retaining and achieving the same learning outcomes of the courses, which require practical learning activities (in real laboratories, in a real practical environment, in actual field visits, in real internships) to acquire and maintain knowledge and skills.
14. Insufficient exchange of experience that hinders skills development (both for teachers and students).
15. Lack of successful business models.
16. Ambiguity in costs benefits.

Here again, the strategy and the motivation of the involved stakeholders (the lack of it) are shown as the main DT barriers, together with the resistance to change, which confirms the finding of the previous studies.

Although many factors may hinder digital transformation, and the process itself is complicated and extended in time, the experts have identified only a few drawbacks:

1. The preparation required for DT might make it less flexible. It might become more difficult to change the curriculum and address hot topics immediately.
2. Increased inequality among students due to different IT equipment at home.
3. Overloading students with additional assignments.
4. Considerably higher workload of teachers.
5. Difficulties in maintaining students' attention.

All experts have agreed that the digital transformation of higher education is an inevitable process, the COVID-19 playing only the role of the accelerators of the process, not being the driver.

Discussion

Digital transformation nowadays is a megatrend across industries (Ebert & Duarte, 2018), with the educational sector being no exclusion. Higher education is crucial for societal and economic development (Ratten, 2020; Teixeira et al., 2021). The main objective of education is to ensure the students have the necessary skills to succeed in the future (Teixeira et al., 2021) and emotional intelligence to collaborate and build relationships

(Mello et al., 2020). The digital transformation in higher education can be considered from different aspects, namely learning and teaching, administration and management, curriculum, and, finally, infrastructure (Alenezi, 2021). The increasing competition from massive open online courses (MOOCs) as well as between the universities for the most exemplary students, lecturers, and researchers (Kopp et al., 2019) urges HEIs to look for new ways of working, transforming their business processes, products and services that they are offering (Benavides et al., 2020). The results of the research confirm that HEIs need to optimize their processes to adapt to a fast-changing environment. Digital transformation in HEIs is driven by the need to satisfy increasing labour market's demands by ensuring students have the necessary digital skills to stand out in a globalized digital environment, as well as by satisfying the needs of society by providing accessible education and qualitative, flexible, student-centred learning opportunities. The availability of new digital solutions and tools for more engaging and qualitative studies forces HEIs to keep up with the times and transform.

Strategy, leadership, collaboration, and involvement of the stakeholders are critical factors for the successful digital transformation overcoming the natural resistance to change. The availability of digital tools and platforms suitable for education plays an essential role in the transformational process. According to the experts, the availability of financial resources is not a critical success factor for digital transformation, but lack of or insufficient financial resources is a serious barrier. The availability of resources in the budget is mentioned as a success factor in the literature. At the same time, high costs and insufficient investment may hinder digital transformation (Kopp et al., 2019). Among the benefits for the students, cost-saving opportunities as the result of digital transformation were discovered (Benavides et al., 2020).

It is often assumed that modern students are "digital natives," having all the necessary digital skills for the digital teaching environment; however, some authors argue that it is not so, especially for the first-year students. Besides, there is no comprehensive research on what digital skills students bring from school to their higher education journey (Kopp et al., 2019). The research findings show that one of the barriers found in the literature is the lack of digital skills and competencies among the students. At the same time, experts agree that students' digital literacy is one of the most critical factors for the digital transformation in HEIs. Therefore, further research could be conducted in that direction.

The higher education sector was one of the most affected by the COVID-19 pandemic. For the universities and other Higher Education Institutions, it meant transitioning the ''traditional'' teaching experience to the online mode via technology in a short period. In such situation,

online education providers were already in an advanced position, using AI and analytic tools to provide on-demand and personalized learning (Felipe et al., 2021). To stay competitive, HEIs should adjust to a new reality, and the digital transformation is the only way forward. Even though the impact of COVID-19 was mentioned in previous research as one of the drivers for digital transformation in HEIs (Erdmann et al., 2021), the experts are united in the opinion that the process of digital transformation is natural and inevitable for higher education; COVID-19 has just accelerated it.

Conclusion

Digital transformation covers the entire organization beyond digitization and digitalisation, thus benefiting the whole HEI. Nevertheless, the barriers and success factors for effective DT in higher education depend on various internal and external factors.

Digital transformation at HEI is an important step as universities are crucial for the supporting labour market with employees being able to adapt to the business world having necessary technical and scientific knowledge and skills such as programming and AI (Teixeira et al., 2021). It is also imperative to stand out from the competition and provide flexible student-centred educational services in the era of disruptions we live in. Higher Education Institutions transform their processes and business models by implementing new educational practices via technology. The question is no longer whether the digital transformation of HEIs is to be, but rather how they shall proceed to be more successful and competitive. The strategy, motivation, and involvement of the stakeholders are critical success factors in this process.

The research also revealed that the poor digital literacy of students may be one of the barriers to digital transformation and that further and in-depth research is required regarding the digital skills and capabilities that students have at the beginning of their studies at HEIs.

Digital transformation in higher education is not a panacea; it has certain disadvantages, however, these are not studied in the existing literature.

The research provides contribution by demonstrating a better under-standing of drivers, benefits, drawbacks, success factors, and barriers and the interrelationships among these factors for the implementation of the digital transformation in higher education and giving an insight into the possible future research directions.

Authors Note

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TEACHING INTERIOR DESIGN
IN AUGMENTED REALITY

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ABSTRACT

Augmented Reality (AR) has been effectively utilised across a diverse range of industries, including entertainment, medicine, the military, engineering and design. In parallel, AR has irreversibly changed the potential for interaction with the learning object across all education levels and a broad variety of disciplines ranging from the introduction of new concepts in Primary Education to more complex learning in STEM (science, technology, engineering, and mathematics), social sciences and humanities in Secondary and Tertiary Education. Current 21st Century research presents evidence that effective application of AR in education can facilitate effective competence acquisition while strengthening learner motivation and ensuring successful knowledge transfer to new contexts. Because of the swiftly shifting demands of the labour market and the immense potential of technology, the learning environment and context has become fundamental for learning in the 21st Century. Interior design as a field is a balance between creative innovation and the unbreakable bond with the physical reality demanding respect for precision and functionality. Major international companies, such as Amazon, Ikea, Wayfair and Target have been successfully utilising AR since the 2010s. Thus, nowadays, interior design education is unimaginable without incorporating AR technology, as this enables educators to deliver new forms of engaging and addressing interior design. AR permits experimentation without losing the attributes of the physical environment, thus allowing learners to gain more practical and diverse experience. This study addresses the lack of a systematised knowledge base, which is necessary to inform pedagogic and instructional decisions for interior design education at the secondary school level by examining scientific literature and analysing case study experience in order to formulate findings and recommendations for interior design educators and course developers.

Keywords: augmented reality, education, interior design, secondary education

Introduction

Since 2020, new teaching content and approach have been gradually introduced in Latvian schools in line with the new standards for basic and secondary education; in particular, the subject of "Design and Technology I",

which requires students to learn different topics of design, including interior design. It is an entirely new subject where teachers need to acquire the knowledge and understanding of the programme's framework as well as being able to traverse the variety and effectively utilise the new these methods and tools to deliver high quality learning process.

In Autumn 2021, the IT Education Foundation conducted a survey of 459 pupils from every Latvian secondary school in which "Design and technology" as a subject is taught. The survey showed that 77% of all students would like to learn subjects of design and technology on a digital platform with a variety of video materials, game elements, augmented reality tools and other interactive capabilities. The greatest interest for pupils would be, initially, in interior design (36%) and this shows that students have an interest and desire to use digital tools in design and technology lessons.

Technological developments in the 21st Century have created an opportunity to transform learning and education (Laurillard, 2007; Zhu, et al., 2016; Daniela, 2021; Dreimane, 2020). The use of technology includes a set of processes which teachers must consider. First, before technology can be used in the training process, these processes must be assessed in the light of the defined learning outcomes to be achieved (Daniela, 2019). Secondly, digital and virtual solutions must be carefully evaluated before they are used as a learning resource or tool, for example, so that their purpose is not confined to the principle of entertainment (Daniela, 2020). Thirdly, the teacher needs the knowledge and expertise to choose the most relevant technology or digital tool for the topic being studied.
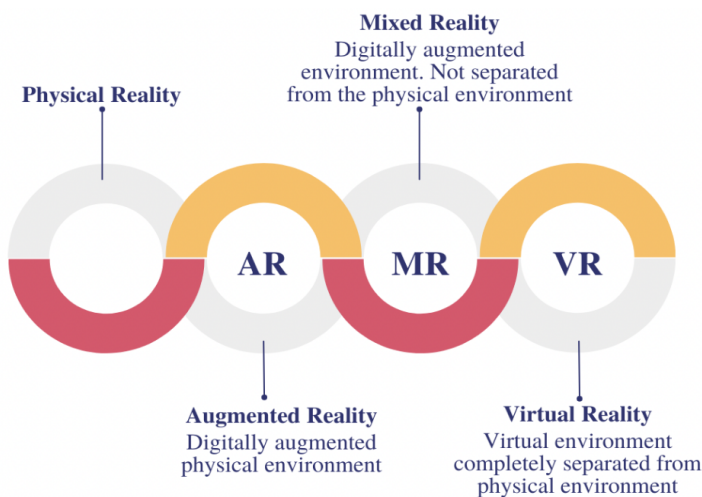
Figure 1. Levels of Virtuality – Immersive Technologies.
Concept developed based on Dreimane (2020)

One of the technology groups used in education to achieve the learning goals is immersive technology. Dreimane has defined immersive technology as a "Technology group whose unique characteristics are digitally generated three-dimensional visualization, or 3D environment, and the capabilities of different levels of interaction with the 3D environment (human interaction). The immersive technology group includes Augmented Reality (AR), Mixed Reality (MR) and Virtual Reality (VR) technologies (2020) (Fig. 1). In the context of this study, the AR has been used and studied. AR can be explained as: "interaction with the real world through "additional" digital information coverage (additional information on the physical environment around)" (Dreimane, 2020, p. 37).

Interior design as a field encompasses a balance between creative innovation and the unbreakable bond with the physical reality demanding respect for precision and functionality (Nee et al., 2012). Major international companies, such as Amazon, Ikea, Wayfair and Target have been successfully utilising AR from 2017 (Gürçınar & Esen, 2018). The AR technology is applied to classroom-based learning and is better for teaching interior design (Nee et al., 2012; Billinghurst & Duenser, 2012; Chang et al., 2019). This technology, compared to other immersive technologies, is more accessible because it can be used on tablets, mobile phones and stationary or portable computers (Nee et al., 2012). The first AR learning experience for use in the interior design sector were developed in 2005 for the purposes of marketing. This AR learning experience – "KPS Click & Design" allowed virtual furniture (Haller et al., 2006) to be placed in a room. Twenty-seven years have passed since the first AR learning experience was developed directly for use in the educational environment when, in 1995, a team of researchers (Kancherla et al., 1995) presented a learning experience in anatomy (Garzón, 2021). However, the turning point in the development of AR technology was in 2016, when the public met Pokemon GO (Qiao et al., 2019). It gained unprecedented popularity and during the first eight weeks following publication, Pokemon GO was downloaded more than 500 million times (Pokémon report GO, 2016).

A series of studies have been conducted during these years (Hampshire et al., 2006; Dunleavy et al., 2009; Billinghurst & Duenser, 2012; Radu, 2012; Wu et al., 2013; Bower et al., 2014; Bacca et al., 2014; Akçayır & Akçayır, 2017; Ibáñez & Delgado-Cloos, 2018; Masmuzidin & Aziz, 2018; Chang et al., 2019; Kumari, 2020; Kairu, 2021) explaining and studying the importance of AR in the education sector and teaching subjects related to science, technology, engineering and mathematics (STEM), music, interior design and art amongst others. However, there is a lack of systematic studies focusing on the pedagogical principles of using AR in the teaching and learning process. This is a very important aspect, since it is

not technology that needs to be viewed primarily, but how it can support teachers and pupils in the teaching and learning process.

Researchers (Masmuzidin & Aziz, 2018; Kairu, 2021), list four main educational benefits from using AR at education:

1) learning content in the 3D environment,
2) collaborative, situative and engaging learning,
3) feeling of presence and immersion in the environment, and
4) the opportunity to visualize "unseen".

In addition, interior design practitioners (Charmaine, 2018; Sobacchi, 2019) and researchers (Hui, 2015; Gürçınar & Esen, 2018; Samant & Vartak, 2019; Chang et al., 2019) explain that modern interior design education is not conceivable without using immersive technology because it enables educators to offer new ways to attract interior design issues. This experience can help students to prepare for the changing working environment, as well as acquiring knowledge which will serve as a strong basis for future levels of education (Chang et al., 2019).

Methodology

This research was implemented using a design-based study approach in combination with two qualitative research methods: analysis of scientific literature and testing, pooling and analysing AR learning experiences for interior design skills. The collection of AR learning experiences was carried out using the social networking analysis method – Nodes (Robin, 2015). The Nodes method is based on a premise that network is interrelated. Finding one AR learning experience or a case study leads to the next one.

AR learning experiences were analysed using VR learning experience evaluation tool developed by Dreimane (2020) There were three criteria groups:

1) Purpose of learning experience;
2) Instructional strategy; and
3) The design of experience, and a total of 20 criteria, 88 sub-criteria.

The tool was designed primarily for evaluating virtual reality experiences, but it has broader aims:

The proposed VR experience evaluation tool was essentially developed to serve as a purposeful quality control or a design development instrument that would inform instructional designers, educators, learners and VR content and technology professionals by providing a clear and multi-purpose framework that outlined the alignment between the instructional, pedagogical and VR learning environment in order to ensure and strengthen the efficiency of the VR learning design and instructional strategies (Dreimane, 2020, p. 64)

Learning experiences were tested to primarily assess whether the learning experience was related to the interior design area, followed by learning experience gathering and analysis. As a result, ten learning experiences were analysed.

Discussion

Scientific literature does not single out just one theoretic framework which explains the general principles of learning in a technology enhanced environment. This study is based on the learning of a number of pedagogical theories – Constructivism (Piaget, 1956; Vygotsky, 1978; von Glasersfeld, 1974), Constructionism (Papert, 1993) and Connectivism (Siemens, 2005). Within each of these learning theories, there are important aspects that explain the importance of technology in education and can serve as a justification for selecting a specific digital tool and developing a certain learning design. The framework of Constructivist learning explains that learning is an active process and knowledge is constructed on the basis of past experience (Piaget & Cook, 1956). Constructivism is one of the most important of all the applied theories (Anderson, 2016), which constitutes an understanding of learning through technology (Garzón & Acevedo, 2020). Another fundamental theory explaining the potential benefits of using immersive technologies is Constructionism, developed by Papert (1993). This theory highlights the potential for practical tasks during learning or learning by doing (Papert & Harel, 1991). It was considered that by integrating technology with traditional constructive activities, pupils themselves create new experiences and new ways of thinking (Papert, 1993). Online interactive learning plays an increasingly important role in modern education. Connectivity is a learning theory for the digital century (Duke et al., 2013) and explains the key aspects of learning in the digital environment (Siemens, 2005). Siemens explained that learning is becoming a process of creating knowledge where the human network is used as a developer of knowledge capacity.

However, in order to ensure a targeted implementation of AR in the teaching process, it is necessary to define technology opportunities, limitations and to set how the defined learning outcomes will be achieved. AR has been used in education to visualise abstract objects and to enable pupils to address the challenges that are as close as possible to real life (Liono et al., 2021). In the modern era of information shifting, an in-depth understanding of learning content and a longer period of remembering (Radu, 2012) are essential aspects of the teaching and learning process.

There is some evidence presented in scientific studies, where the researchers justified how the teaching of design-related subjects can be

improved by AR technology. Billinghurst and Duenser (2012) explain how, for secondary and primary-school pupils, scenes of AR can be an educational experience for themselves, because pupils need to think about how to use technology to reflect complex concepts more easily.

Other scientists (Nee et al., 2012; Carmigniani et al., 2011) explained that AR technology is becoming an important tool for prototyping. Teaching and learning architecture and interior design within AR technology can create three-dimensional models, where the physical, surrounding, environment is linked to the virtual environment, interacting with each other. From the perspective of both pupils and teachers, the use of AR technology in the teaching and learning process has more benefits than shortcomings, but the authors of current study agree with the findings of researchers (Dalgarno& Lee, 2010) that the technology does not ensure learning on its own, but rather presents potential for learning benefits. When developing learning design, the teacher should consider both benefits and risks.

In order for an teachers to have practical tools that could be used to teach interior design, this study implemented testing, pooling and analysis of ten AR learning experiences for developing interior design skills, using VR learning experience evaluation tool developed by Dreimane (2020). One of the key lessons that emerged is that there are relatively few platforms designed to be used in the learning process of developing interior design skills. Out of a total of ten AR learning experiences, only two directly focused on education (Live Home 3D and Planner 5D). Eight AR learning experiences can be adapted and integrated into the teaching and learning process (see Table 1).

Table 1. Learning experiences for teaching interior design in augmented reality environments

No.	Title of learning experience	Brief general description (functionality, accessibility)
1.	Rooomy	In this learning experience, you can choose from a variety of online shops and use them to fit the room using AR. Offer both for a specific room to design, such as your own room, and choose one of the existing solutions. You can choose different colours, fabrics, patterns, and styles for interior design projects. Operating system – IOS, free Online link: https://rooomy.com/interior-design
2.	Houzz	A learning experience which offers the possibility of purchasing different interior objects, drawing inspiration from projects already developed and creating your own interior design projects. Operating system – IOS, free Online link: https://apps.apple.com/ca/app/houzz-interior-design-ideas/id399563465

3.	IKEA Place	One of the first AR learning experiences that offered the user the chance to "try" it in a particular room before buying a commodity, with the augmented reality. Operating system – IOS and ANDROID, free Online link: https://apps.apple.com/ca/app/houzz-interior-design-ideas/id399563465 or https://www.ikea.com/au/en/customer-service/mobile-apps/say-hej-to-ikea-place pub1f8af050
4.	Measure	With this, AR can "convert" your learning experience, phone, or lanetwork into a measuring instrument. Operating system – IOS, free Online link: https://support.apple.com/en-ca/HT208924
5.	Myty	AR learning experience in which you can create interior design solutions. Offers you the opportunity to meet the different stories of designers and the products they create. Operating system – IOS and ANDROID, charging platform, basic features free Online Link: https://myty.app/en
6.	Magic plan	AR learning experience in which space plans and plots can be created and it is possible to perform calculations. You can also add different photos. Operating system – IOS and ANDROID, charges (depending on the purpose of use, ranging from € 9.99 to € 89.99) Online Link: https://www.magicplan.app
7.	Decormatters	AR learning experience that offers the possibility of creating interior design projects for different residential areas. Interior professionals are evaluating the projects they have created. Operating system – IOS, separate functions free of charge (each interior item should be purchased separately) Online Link: https://www.decormatters.com/office
8.	Dulux	AR learning experience that offers room-changing colours for walls and ceilings. Operating system – IOS and ANDROID, free Online link: https://www.dulux.co.uk/en/articles/dulux-visualizer-app
9.	Live home 3D	AR learning experience in designing and looking at interior design solutions in a 3D environment. A wide selection of rooms and houses and various interior design objects, colours, textures and styles are also available. Operating system – IOS and ANDROID, Individual features free. For the education sector, a basic offer of around EUR 20 for professionals, around EUR 35. Online Link: https://www.livehome3d.com/support/
10.	Planner 5D	AR learning experience where to find design solutions for interior design and to look at them in the AR environment. In addition, there is an interior design school where you can learn different topics in video lectures in this industry and how to use the Planner 5D platform. Operating system – IOS, Windows, ANDROID, charging platform, around € 20 Online Link: https://planner5d.com/ar

"*Decormatters*" offers an opportunity to create an interior design project and to publish it on a platform and get a score from other users, which includes professional designers. Thus, pupils would have the opportunity to have a practical and engaging experience that could complement theoretical knowledge. It would be necessary to assess the risk that feedback from other users would be difficult to integrate into the traditional learning process, as evaluation criteria are not clearly defined and the subjectivity factor cannot be excluded. A learning experience free version should be used for publishing and evaluating the design (ranging from EUR 10.99 to EUR 69.99). Learning experiences that offer more functionality should be integrated into the learning process. In "*Decormatters*" users can only design a single room. Accordingly, the authors of the study would recommend that the teacher be able to present such experience to pupils and, if there was a desire, to acquire additional interior design knowledge and to obtain feedback from professionals and other users, this can be done individually.

"*Measure*" and "*Magic plan*" are learning experiences where programming, sketching and measuring existing spaces can be learned from the instructions and examples with different solutions are also available. Pupils would have the opportunity to gain practical and engaging experience in measuring, "immersion" in the environment, and visualising the unseen and exposed would lead to an in-depth understanding of the dimensions of the room.

However, in the assessment of the study authors, the most relevant AR for the integration of the platform into the classroom would be "*Live Home 3D*" and "*Planner 5D*", because students can have more versatility for developing interior design skills by experiencing a sense of presence from looking at designs created in an updated reality environment. These learning experiences can be "immersed" in an established interior that would be a natural type of interaction and a natural extension of learning, as close as possible to a real-life situation. On the functionality side, the learning experience offers video-based instructions on different topics related to both interior design and the use of the learning experience itself. Popular opinion articles from industry professionals on interior design are available. "*Planner 5D*" also offers "theme battles" where you can submit your own design solution and compete with other designers – both beginners and professionals. The study authors assessment, "*Live Home 3D*" and "*Planner 5D*", also contributes to the higher cognitive dimensions (create, evaluate, create). Another important aspect is that these learning experiences can create design solutions at the same time for the entire apartment or home complex, easily experimenting and making a variety of changes to create, for example, a particular mood and emotion.

Results

AR plays an important role in acquiring interior design skills, since it allows experimenting, interacting with objects and practical experience that is as close as possible to real-life situations.

As a result of the AR learning experience analysis, it was concluded that only two experiences for developing interior design skills – "Live Home 3D" and "Planner 5D", where 3-dimensional models can be developed and displayed in an advanced reality environment, were developed for primary use for educational purposes. These learning experiences also received the highest ratings.

Based on the results of the study, recommendations were developed to integrate advanced reality technologies for the teaching of interior design:

When choosing the technology for Augmented Reality, there should be a clear plan of what it is meant to achieve and how the learning process will be complemented as well as what the expected benefits are, while assessing and managing the associated risks. AR should be applied in accordance with the training objectives pursued. Before use, it should be evaluated and the educator should be educated in AR technology functionality.

Constructivism, Constructionism and Connectivism pedagogical framework explain the general learning principles from applying AR. Within each of the frameworks of these learning theories, there are important aspects that create awareness of learning through technology and thus justify AR relevance to education. In fact, these theories also describe the transformation of pedagogy into digital culture and the learning aspects of AR, so that knowledge of the design, remembering and exploitation of thinking and knowledge can serve as a support for the more effective development of the objectives and skills identified.

By integrating AR technologies in the teaching process of interior design, pupils have the opportunity to experiment in an AR environment with practical and diverse experience. This experience can help prepare for the changing work environment, as well as the acquired knowledge which will serve as a strong basis for future levels of education. At the same time, educators have the opportunity to offer new ways to attract and address interior design issues.

Conclusion

This study has shown that AR learning experiences offer a variety of materials, colours, light, room (kitchen, bathroom, living room and other options) and change the design of the room. This brings two main benefits: first, pupils can experiment without fear of being wrong and learning

during the process and, secondly, AR technology is more convenient for the use of all materials, lights, colours and various forms of space in the environment. With traditional materials (such as paper and pencil) this process would be much slower and more time consuming. Pupils can more easily understand the context. AR technology is becoming an important tool for prototyping, since three-dimensional models can be created, where the physical (surrounding) environment is linked to the virtual environment through interaction.

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INSTRUCTIONAL DESIGN MAP FOR IMMERSIVE FENCING TRAINING IN VIRTUAL REALITY

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ABSTRACT

Education and learning are evolving because of the rapid speed of technological advancement in the 21st Century. Virtual Reality (VR) has emerged as one of the high-potential learning technologies for education and training purposes across a vast range of fields. In sport education VR has been utilised to enable learners to access learning environments and experiences for drill-training, complex conceptualisation and problem-solving skills. This paper presents an instructional design map for developing and improving fencing skills utilising VR technology. This interactive fencing training simulation is aimed to help to develop a solid en garde position, balanced movements, correct weapon and body position, as well as providing tactical advice and support for advanced principles of performance. Fencing is a combat sport where fencers compete in three weapon disciplines. This study focuses on one of these weapon disciplines – the foil. To develop a proposed solution three main tasks were undertaken – study of current scientific literature as well as analysis of existing VR fencing training solutions and expert interviews with professional coaches and the professional athletes. This research addresses the lack of a systematised knowledge base by examining scientific literature and analysing case study experience in order to design the basic criteria that will be used in the development of a VR learning experience for fencing training in an immersive VR environment.

Keywords: education, fencing, instructional design, training, virtual reality

Introduction

In recent times, Virtual Reality (VR) technologies have been actively incorporated into education, teaching, and training in various applications (Radianti et al., 2020) and this has happened to fencing which has been an Olympic sport discipline since 1896. It is a combat sport where fencers compete in three weapons: epee, foil and sabre (Meyer et al., 2017). These weapons differ from each other in blade type, valid target area and scoring technique (Bieniek et al., 2017). This research focuses on foil and in the context of this study, VR has been used and studied. VR can be explained as:

a completely digital environment, closed off from the physical environment (Dreimane, 2020b).

The aim of this research is to develop a VR learning experience design map to aid the development of fencing skills. To achieve this, the following steps were undertaken:
1. Exploring the scientific literature on studies already carried out, using VR as a tool for fencing skills development;
2. Exploring existing VR learning experiences with fencing elements;
3. Interviewing professional fencing coaches;
4. Devising an instructional design map for a VR learning experience in order to ensure the development of fencing technique.

Coaches and athletes are constantly looking for new possibilities to improve performance, training process, analyse results of performance and therefore gain edge over competitors (Mackenzie & Cushion, 2013; Farley et al., 2020; Holly et al., 2021). In order to develop athletic performance, coaches typically analyse athlete movements using performance analysis methods (Farley et al., 2020). In gaining an edge over competitors, it is very important to record information about athletes' performance (Mackenzie & Cushion, 2013; Farley et al., 2020). As Farley noted: "Enhanced performance data (such as the physical demands and technical aspects of a sport) better equip coaches and trainers as to the skills, movements and physical qualities of their athlete" (2020, p. 2). As highlighted in various scientific articles (Bieniek et al., 2017; Meyer et al., 2017; Farley et al., 2020; Holly et al., 2021), VR can contribute to the development of the skills and increase athletic performance in different sports (Farley et al., 2020), including fencing. The last decade has seen significant advancements in technology, especially within the development of VR (Farley et al., 2020).

Virtual Reality technologies allow interaction with the virtual environment with a high intensity of immersion (Holly et al., 2021). Scientific articles of (Slavova & Mu, 2018; Holly et al., 2021) concluded that when using VR as a tool combining with traditional learning methods, athletes gained better results of understanding and recognising concepts of sport performance and overall motivation in the learning process increased. Two other articles explained, that VR technologies support the design of training programmes by simulating real game activities and introducing effects which are not easily replicated in real training conditions, allowing athletes to gain 'mental repetitions' and increase track performance (Appelbaum & Erickson, 2016; Holly et al., 2021).

In order to achieve good results, any learning process, including fencing training, needs to be constantly updated by introducing new methods and techniques (Turner et. al., 2013), including new technological solutions. The fundamental role of speed, co-ordination and sensory-motor skills is

indisputable in fencing; however, merely rapid and correct accomplishment of a movement does not ensure success. An outright bout against an opponent requires a high level of perception, information processing and strategic decision-making and precise execution. Thus, in fencing, as a 'game of anticipation and deception', technical abilities are a tool used to execute chosen strategy and tactics (Bieniek et al., 2017). When teaching fencing, not only technical, but also pedagogical aspects need to be considered (Ruffaldi et al., 2011). The education sector and learning as a process are continually changing as a result of the technological impact.

Methodology

The aim of this research is to develop a VR learning experience design map to aid the development of fencing skills. The study took place in 2021 and was divided into four phases:

1. Study of current scientific literature;
2. Analysis of the existing VR fencing training solutions;
3. Expert interviews, and
4. Developing concept of instructional design map to enhance learning experience in fencing in VR.

Currently, technology has an immense impact on people's lives, including individual, societal, organisational and systematic levels. Technology has redefined our communication, work, leisure, even sports and our learning (Kaimara et al., 2020). Technology can make the learning process interesting and exciting, but at the same time the concept of "fascination" must be taken into account (Daniela, 2020), because pupils may want something interesting all the time. This, in turn, risks poor development of sufficient long-term attention as attention will be switched from one technology to another (Kaimara et al., 2020). The use of technology has great potential in promoting the interest of pupils, as it stimulates immersion in the educational process (Hwang et al., 2008). The efficient use of technology in the learning process depends on how strong the learning process is and how clearly the technology task is defined (Hadlington, 2017). At the same time, it has also been seen that technology is often being put at the forefront rather than a technology enhanced learning process (Surma & Kirschner, 2020) and technology enhanced learning is often used as a synonym for improving technological infrastructure in education (Daniela, 2020). Pedagogical principles should be considered when developing Virtual Reality educational platforms to avoid a fascination effect by utilised technology (Daniela, 2020). Pantelidis outlined various reasons to use Virtual Reality in education: "At every level of education, virtual reality has the potential to make a difference, to lead learners to

new discoveries, to motivate and encourage and excite. The learner can participate in the learning environment with a sense of presence, of being part of the environment" (2009, p. 61). Therefore, this study presents an instructional design map for a VR learning experience to help in developing and improving fencing skills.

To develop the proposed solution three main tasks were undertaken – a study of current scientific literature as well as analysis of the existing VR fencing training solutions and expert interviews with professional youth coaches and the Latvian national team of professional athletes.

Many studies have been conducted (for example, Mackenzie & Cushion, 2013; Appelbaum & Erickson, 2016; Farley et al., 2020; Holly et al., 2021) which have studied and explained the importance of VR in sport, but only three were about fencing (Baek et al., 2003; Bieniek et al., 2017; Agosti & Autuori, 2020). There is very little scientific evidence and advice on how to create a design for the development of fencing skills in virtual reality, which in turn justifies the potential impact of this study.

The collection of VR learning experiences was carried out using the social networking analysis method – Nodes (Robin, 2015). The Nodes method is based on a claim that a network is interrelated. Finding one VR learning experience or a case study leads to the next one. AR learning experiences were analysed using a VR learning experience evaluation tool developed by Dreimane (2020a) There were three criteria groups:
1) Purpose of learning experience;
2) Instructional strategy and
3) The design of experience, with a total of twenty criteria and eighty-eight sub-criteria.

The tool was designed primarily for evaluating virtual reality experiences, but it has broader aims:

> "The proposed VR experience evaluation tool was essentially developed to serve as a purposeful quality control or a design development instrument that would inform instructional designers, educators, learners and VR content and technology professionals by providing a clear and multi-purpose framework that outlined the alignment between the instructional, pedagogical and VR learning environment in order to ensure and strengthen the efficiency of the VR learning design and instructional strategies (Dreimane, 2020b, p. 64)".

Learning experiences were tested to primarily assess whether the learning experience was related to fencing, followed by analysis of this experience. As a result, only one learning experience was analysed.

Finally, to specify the needs for such a VR solution, three semi-structured interviews with professional coaches who train children and the national team of Latvia were held.

Discussion

Many recent studies (Pantelidis, 2010; Kapp & O'Driscoll, 2010; Coimbra et al., 2015; Dreimane, 2020a) indicate that VR has emerged as one of the most important and effective tools for education and training. The fencing training programmes in VR are not commonly used as part of the traditional training programmes' curriculum in 2022. However, there are only three scientific studies on this topic. For instance, Baek et al. wrote about applications that were used for fencing training and a dance imitation game (2003). Meanwhile, Agosti & Autuori suggested a preliminary methodological approach to an ad hoc functional training for fencers of all three weapons (2020).

Focusing on the VR itself, there were several studies conducted where VR has been used to improve skills or to evaluate the training results. A study conducted by Bieniek et al. in Poland in 2017, explains that frequently repeated movements create stable movement patterns which are individual for each of the participants (2017). According to the individual character of the performed actions, the animation database should contain the highest possible number of recorded athletes (Agosti & Autuori, 2020). By widening the database of animations, the solution can provide an expected level of diversity for fencing training and prevent the effect of 'training with' just one opponent (Bieniek et al., 2017).

In VR environments for training, the advancement of visual and haptic technologies play an important and innovative role in the context of sports training (Ruffaldi et al., 2011), and this is especially true in fencing. Developing a fencing training platform in VR includes some challenges, one of which is the identification of specific elements that compose sport skills and which can benefit from training in VR. In addition, it is challenging to identify the best combination of training protocols and multi-modal feedback that can be employed to improve these skill elements in a given task (Ruffaldi et al., 2011).

Fencing is a sport which requires both immense concentration and tactical ability in order to outwit an opponent, so much so that it has often been compared to a game of chess. Maintaining mental and physical endurance is a crucial part of succeeding at the highest level, as well as rapid reactions and explosive power (Bottoms, 2011).

Results

As a result of the analysis, it was concluded that the tested learning experiences lack an important immersive aspect for fencing training – haptic feedback. In real life a fencer bands his sword while making a touch and

this develops a sense of pressure in fencers' movements. This is important because it helps to develop a sense of right distance and right force that should be applied while one is making a touch. One solution that could be tried to address this issue would be a virtual glove which would allow to feel the pressure when actions are taken in the VR environment. Another issue is the lack of foot exercises that would help a fencer to learn and develop the fencer's en garde position, steps forward and backward, lunges and fleche (special movement in fencing to thrust fast forward). This is a good and much needed solution to take fencing into an e-games environment. It gives a feeling and understanding of basic fencing skills. Addressing more complex movements and skills would offer a great advantage to explain fencing to even more people. This shows how hard it is to bring fencing into e-games and VR environment with a sense of reality, because complex issues such as haptic feedback, bending of a touch, foot movement, correct technique and pedagogical feedback all need to be solved.

To discuss the need for such a VR solution, three interviews with professional coaches who train children and the national team of Latvia were held (see Table 1, 2). Authors asked three questions:

1. What are the main skills in fencing which needs to be developed in the training process?
2. Do you see benefits of development of such tool to improve fencing learning skills?
3. What functions should a learning tool have in order to be useful in the training process?

These experts emphasised that it is very important to train with different athletes in order to improve fencing skills and experience. So, from a pedagogical point of view, an effective VR learning software with different skill levels would help to gain the necessary strategic experience. For simple movements, such as steps forward and backward, reaction and precision can be trained with such a solution; however, it requires some basic knowledge about fencing, such as the correct en garde position, from the user. Experts emphasised that haptic feedback was crucial in order to learn the correct touch and movements that involve feeling the pressure on the blade. In addition, pedagogical feedback would help the user to understand if the movement is executed correctly. Of course, gaming elements and a sense of competition with other users from the same club or other part of the world would help to build a platform and each exercise should serve a clear educational purpose, for example, a solid en garde position, a strong lunge or fleche, balanced movements, correct weapon and body positions. These would be the important skills that a user needs to focus on (Wojciechowski, 2019). It has already been stressed that the use of such VR software would require the user to have some basic knowledge about fencing. Indeed, it

would be advisable to have several real-life practices with the assistance of a coach, to learn the correct en garde position, and basic foot and hand movements and positions such parry (defence) and lunge (attack).

Table 1. Experts' views on the benefits of VR technology in fencing

No.	Experts' views on the benefits of VR technology in fencing
1.	Possibility to train with different athletes in order to improve fencing skills and experience
2.	Gain strategic experience and improve psychological resilience
3.	Possibility to train without assistance of a coach and to train also at home or any other place
4.	The gaming elements could increase the overall performance of athletes
5.	Diversify the process of the training

Table 2. Experts' views on main functions which a learning tool should have

No.	Experts' views on functions which a learning tool should have
1.	Gaming elements and different level exercises
2.	Haptic feedback to learn the correct touch and movements that involve feeling the pressure on the blade
3.	Feedback on the completed exercises
4.	Examples of correct performance of the task
5.	Assessment in real-time with right or wrong signals, scores, points and completion time

The aim of this research is to offer a VR learning experience design map to aid the development of fencing skills. Therefore, this study proposes a design map (see Figure 1) based on the framework of evaluation tools for VR developed by Dreimane (2020a). This will allow the design of instructional design criteria (including technology aspects) that could be used in the development of a learning experience for fencing training in VR environment.
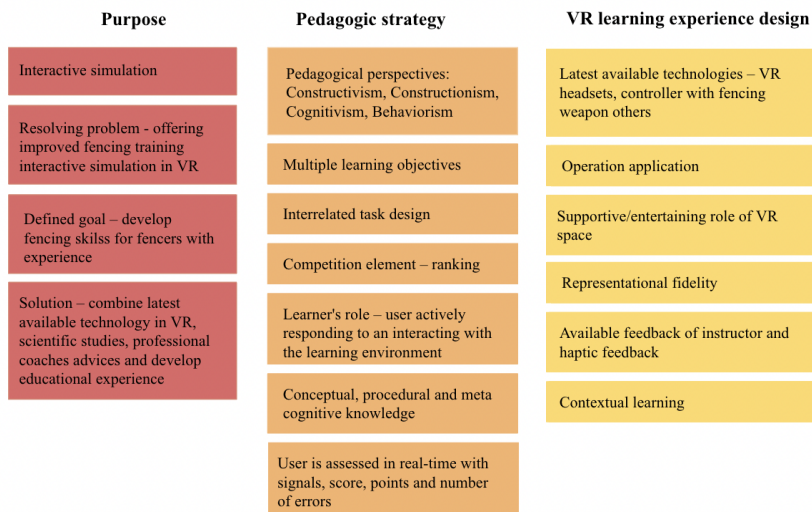
Figure 1. Instructional design map to enhance learning experience in fencing in VR

Instructional design map consists of three sections, which are developed based on VR learning experience evaluation tool developed by Dreimane (2020a), analyses of the existing VR fencing training solution and expert interviews:

1. Purpose (where the purpose of learning experience is explained);
2. Pedagogic strategy (explains pedagogic principles which are used at this learning experience);
3. VR learner experience design (explains aspects of design experience using VR technologies).

The target audience for such learning experience are users with a basic understanding of correct fencing movements and positions and an understanding of the rules. The relevant instructional strategy based on the typology proposed by Kapp and O'Driscoll, for the fencing training VR learning experience is operational application in that: "learners are challenged to apply physical world rules to objects in the virtual world" (2010). The purpose of such learning experience is to develop solid en garde position, balanced movements, correct weapon and body position, tactical advice and advanced principles of performance by using interacting VR simulation.

In 2022 there is no known solution available on the market that offers haptic feedback for touches and in-depth learning of advanced fencing movements. Such a solution would address the issue with the limited availability of advanced fencing coaches and their restricted time to teach only a certain number of students. Therefore, the VR learning experience

in fencing would increase the number of students who could access the knowledge of elite fencing.

Second section of the instructional design map explains pedagogic principles which are utilised in this learning experience which is based on the learning of a number of pedagogical theories – Constructivism (Piaget, 1956; Vygotsky, 1978; von Glasersfeld, 1974), Constructionism (Papert, 1993), Cognitivism (Gagne, 1985; Bruner, 2020) and Behaviorism (Watson, 1913; Malone, 2014). Within each of these learning theories, there are important aspects that explain the importance of technology in education and can serve as a justification for selecting a specific digital tool and developing a certain learning design. The framework of Constructivist learning explains that learning is an active process and knowledge is constructed on the basis of past experience (Piaget & Cook, 1956). Constructivism is one of the most important of all the applied theories (Anderson, 2016), which constitutes an understanding of learning through technology (Garzón & Acevedo, 2020). Another fundamental theory explaining the potential benefits of using immersive technologies is Constructionism, developed by Papert (1993). This theory highlights the potential for practical tasks during learning or learning by doing (Papert & Harel, 1991). It was considered that by integrating technology with traditional constructive activities, pupils themselves create new experiences and new ways of thinking (Papert, 1993).

Behaviorism equates learning with changes in either the form or frequency of observable performance (Winn, 1990). Main assumption of behaviorism theory – "correct instructional stimuli will elicit the desired learning outcomes, with an emphasis on practice and performance" (Dreimane, 2020, p. 55). In other words, learning is accomplished when a proper response is demonstrated following the presentation of a specific environmental stimulus (Ertmer & Newby, 1993). Behaviorism imply that the job of the teacher and instructional designer is to (1) determine which cues can elicit the desired responses; (2) arrange practice situations in which prompts are paired with the target stimuli that initially have no eliciting power but which will be expected to elicit the responses in the "natural" (performance) setting; and (3) arrange environmental conditions so that students can make the correct responses in the presence of those target stimuli and receive reinforcement for those responses (Gropper, 2018; Schunk, 1991; Winn, 1990).

Cognitivism stress the acquisition of knowledge and internal mental structures and, as such, are closer to the rationalist end of the epistemology continuum (Gagne, 1985; Bower & Hilgard, 1981). Learning is equated with discrete changes between states of knowledge rather than with changes in the probability of response (Ertmer & Newby, 1993). Cognitivism focuses on the conceptualization of students' learning processes and address the issues of how information is received, organized, stored, and retrieved by

the mind (Ekkekakis & Zenko, 2016). Learning is concerned not so much with what learners do but with what they know and how they come to acquire it (Jonassen, 1991). Knowledge acquisition is described as a mental activity that entails internal coding and structuring by the learner (Schroth, 1987). The learner is viewed as a very active participant in the learning process (Ertmer & Newby, 1993).

Therefore, this learning experience design is based on such pedagogical perspectives such as Constructivism, Constructionism, Cognitivism and Behaviorism. The learning experience design proposes a variety approach to differentiate different learning objectives such as developing different solid and correct touches from different positions and distances, balanced foot and body movement and tactical advice and experience for fencing with different types of fencers. A user should be able to choose interrelated tasks. The experience design suggests involving a competition element, where users can perform different tasks and get results which are ranked against other users who perform the same tasks and previous user's own results. The results would be summed up on a ranking list where a fencer can measure their performance against others. A user should be able to actively respond to and interact with the learning environment, as it would be important for developing conceptual, procedural and meta-cognitive skills, such as the correct timing of an attack and defence, anticipate adversaries' actions, use right tactical solutions and develop psychological stability.

For an effective feedback, the performed actions and their sequences should be assessed in real-time with right or wrong signals, scores, points and completion time. Right or wrong signals should be used in a task to assess users' ability to learn actions, tactics and speed. Points should be awarded if correct actions are taken strategically and precisely technically executed. The achieved results and data which can be obtained later can be used to discuss with the user's instructor. The development of learning experience proposes using a VR headset, controllers with fencing weapon for foil in the right weight and size, haptic technologies for feedback and more immersive interaction.

Conclusions

In conclusion, VR has the potential to support the acquisition of fencing skills, since it improves reaction and attention, allowing athletes to gain 'mental repetitions', building of muscle memory and developing attack and defence skills through the repeated practice.

As a result of the analysis, it was concluded that the tested learning experience for developing fencing skills lacks haptic feedback, which was highlighted as a crucial component from the interviewed coaches and

professional athletes. In real life a fencer bands his sword while making a touch and this develops a sense of pressure in fencers' movements. This is important because it helps to develop a sense of right distance and right force that should be applied while one is making a touch.

Based on the results of the study, a design map to enhance learning experience in fencing in VR has been developed. This is an ambitious project with many challenges and potential difficulties, including technological aspects. Nonetheless, this study shows that in practice this could be a significant tool for developing fencing skills for advanced fencers within a safe and individualised immersive environment. VR technology can become an important tool for improving different skills which are needed for high level athletes, starting from simple movements – a solid en garde position, a strong lunge or fleche, balanced movements, correct weapon and body positions and continuing with fencing experience with different partners and level of exercises to improve psychological resilience as well.

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LOOKING FOR "THE BEST OF ALL WORLDS": USING DIFFERENT TEACHING FORMATS IN AN ENGLISH AS AN ADDITIONAL LANGUAGE PROGRAM

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Never let a good crisis go to waste
W. Churchill

ABSTRACT

In spring of 2020, when the first Covid-19 related restrictions were introduced, educators were forced to rapidly look for new solutions. Most of those involved moving classes online. However, although quality was a concern for all institutions, ensuring a balance between safety and quality of education presented an additional challenge to providers of non-formal adult education. Therefore, developing a course to accommodate the new and, probably, enduring reality as well as carefully monitoring its delivery was essential. Even though different modalities have been used in education for decades, only now have they become a part of the mainstream. Most educators were used to working in either traditional face-to-face or online mode, while some students could have used a combination of both as well as other web-based resources. Thus, shifting from one modality to another or mixing them in a course presented certain challenges for both educators and students. This paper describes a blended hybrid program of English as an Additional Language for adults developed at RTU Riga Business School English Language Center in response to the Covid-19 pandemic. The program has the same basic content as previous face-to-face one but incorporates various carefully analyzed modalities. Specifically, it combines a face-to-face (F2F) and remote online synchronous learning, and adds asynchronous part to the course. It has been piloted in open public groups as well as corporate courses with student feedback analyzed vis-a-vis face-to-face courses. This paper analyzes the development of a program for open groups.

Keywords: course modality, language training, F2F, English as a Foreign Language, teaching English, remote, asynchronous, synchronous, hybrid

Introduction

The Covid-19 pandemic prompted practically all teaching and learning above the pre-school level to suddenly move into an emergency remote

teaching (Hodges et al., 2020), and both educators and learners had to make adjustments as best as they could (Ross & DiSalvo, 2020). While initially most of the institutions acted in the so called 'crisis' mode, almost two years later it has become evident that online and remote learning will continue to be part of mainstream education. There have always been numerous advocates for each of face-to-face, remote, and online education among educators and students. However, the Covid- 19 related crisis has prompted educators to experiment combining various modalities. At the same time students, especially the ones participating in nonformal education, who have very low cancellation cost, need to see the value in such a course. It is therefore essential to both carefully plan such programs (Gacs et al., 2020) and to monitor their delivery. It is especially challenging in planning and teaching an additional language course due to the highly social nature of language learning (Firth & Wagner, 2007; Toth & Davin, 2016).

Learning modalities

Traditionally, learning process has been organized F2F with students and teachers meeting in the same place at the same time. Whether it happens in class, laboratory, or a football pitch, both verbal and nonverbal communication is fully facilitated and contained within the allocated time of the class. With the development of digital technology, the variety of course delivery options have increased. Since the Covid-19 pandemic, remote learning has been used as a way to provide structure, ensure learning and assessment, communicate with students via technology (Daniela & Visvizi, 2021).

Ally (2008) defines online learning as using the Internet for accessing instructional materials, for interacting with those, as well as instructor and other learners, and for receiving support in the learning process. The obvious advantage of online learning for students is that it is not hindered by time zones, location, or distance, and allows flexibility of access (Cole, 2000). In asynchronous online learning, students can access online materials at any time, as it is self-paced and not restricted either by location, or by time (Mullen, 2020), while synchronous online learning allows for real time interaction between students and the instructor (Ally, 2008). Baker (2021) adds that it refers to both online and onsite synchronous learning.

Teachers and course developers working in an online learning context face the challenge to construct an environment that is conductive for learning, creating community, and accommodates content and assessment. As Anderson (2011) puts it, "There is no single, right medium of online learning, nor a formulaic specification that dictates the kind of interaction most conducive to learning in all domains with all learners" (p. 154).

In the last decade, universities have been increasingly using a combination of F2F and computer-assisted pedagogy as an alternative modality

of delivery (Lindorff & McKeown, 2013, Picciano, 2016). Blended learning systems combine face-to-face instruction with computer-mediated instruction (Graham, 2006). Means et al. (2013) define blended learning as "a combination of online and face-to-face experiences … where students learned 25% or more but not all of the assessed content over the Internet." (p. 6) Combining modalities allows for a greater flexibility of delivery, 'blending' "the benefits of in-residence education with online technological advances" (Ahlin, 2021).

The Online Learning Consortium, formerly The Sloan Consortium, considers a course blended if the amount of online time takes up between 30% and 79% of the total course time (Allen et al., 2007), and it does not equal a simple transfer of a F2F activities and course material online. Designing a lended course requires careful combination of both online and onsite pedagogies and, therefore, an extra effort on the part of instructors. Moreover, the proportion of online/onsite classes plays a role in how students perceive the courses (Owston & York, 2018). Medium (36% to 40% online) and High (50% online) blends showed more satisfied students than Low (27% to 30% online) and Supplemental blends (100% face-to-face with weekly online tutorial sessions). At the same time, learning attainment has been found higher in Medium and High blends than in the Low one, although there has not been detected a significant difference between the Medium and High blends. Thus, to fully benefit from a blended course, institutions need to replace at least 30% of F2F classes with online ones for successful student-teacher and student-student interaction. It must also be noted that online knowledge construction, instructor's support and engagement with students play a vital role in the design of a blended course and students' learning (Law et al., 2019, Vo et al., 2020).

Kintu et al., (2017) found that among the design features, technology quality, online tools, and face-to-face support are predictors of learner satisfaction while learner characteristics of self-regulation and attitudes to blended learning are predictors of satisfaction.

Attainment of learning in a blended modality is comparable to that of the F2F one provided the proportion of online classes is 30%, course material is well-organized and relevant, self-learning and good time-management are encouraged (Monk et al., 2020).

Although the terms 'blended' and 'hybrid' are often used interchangeably, in this research we consider a combination of F2F and online instruction as blended, and a combination of synchronous and asynchronous as hybrid.

Background for the study: English Language Programs at RTU Riga Business School

Riga Business School (RBS) was founded in 1991 by Riga Technical University (RTU), State University of New York (SUNY) at Buffalo, and University of Ottawa with the aim of providing an MBA degree taught entirely in English. To prepare candidates, the RBS English Language Center (ELC) was established by the English Language Institute at SUNY Buffalo in the same year. Since then, RBS ELC has been teaching English as an Additional Language (EAL) to adults mainly in open groups for general public and corporate courses to companies and organizations. EAL is defined as 'additional language learning at any point in the life span after the learning of one or more languages has taken place in the context of primary socialization in the family; in most societies this means prior to formal schooling and sometimes in the absence of literacy mediation.' (The Douglas Fir Group, 2016). Additionally, since 2017 RBS ELC has been also offering a Pre-University English program for secondary school pupils aged 14–18.

The Content

The RBS EAL program was initially developed as a fee-based continuing education program for adults to prepare them for master's level studies in English. Thus, it attracts mostly well-educated students, and still retains a strong academic component. The program is built on the basis of a social constructivist theory (North & Piccardo, 2016) as pedagogical approach to teaching an additional language benefits from combining cognitive and social perspectives (Toth & Davin, 2016). Students are placed in groups according to what can be approximately defined as their linguistic Zone of Proximal Development (ZPD), (De Guerrero & Villamil, 2000), instructors act as facilitators in a classroom focused on interaction, communication, and discussion. Studies (Higgs & Clifford, 1982) have shown the benefits of explicit grammar instruction and sociocultural theory recommends that it is semantically linked to a course (Lantolf & Poehner, 2014). Thus, functional grammar, which emphasizes grammatical choice as a tool to express meaning (Myhill, 2021) is taught as a part of a course but the teaching of grammar follows the discourse logic of a course.

The most popular courses are General English, which is taught at seven levels according to the Common European Framework of Reference for Languages (CEFR), and Business English taught at three levels of CEFR. In the open groups each level is taught by two different instructors over two 96-academic-hour sessions, with one instructor focusing on vocabulary, reading, speaking, and listening, while the other – on speaking, functional

grammar, and writing. The two parts are planned to be interrelated and the instructors work as a team so that grammatical structures are recycled in the reading and speaking class while vocabulary – in the grammar class. Standard corporate courses are 100 academic hours in volume and groups are taught by one instructor who focuses on all language skills. All course syllabi are standardized in order to ensure graduate progression between levels, and coursebooks are carefully selected to facilitate it. To ensure smooth transition between parts of a course, instructors are required to follow a standard outline; however, they adjust the pace and use additional materials based on the needs of a particular group. Standard syllabi for corporate groups are based on the same materials as the ones for open groups but may be adjusted to the client's needs.

The Process

The academic process at RBS ELC aims to identify each student's learning needs and to meet those in the most effective way. The student's experience includes several stages. Students are placed in a group based on a written test followed by and interview with the ELC Director; however, returning students who completed a course earlier than a year are placed in a group without a test. Until the spring of 2019, the test was in a paper form administered on-site. Groups meet twice a week, each student receives a set of coursebooks, and to complete a course and earn a certificate, students need to attend minimum 75% of classes, actively participate in classroom activities, do homework, and pass tests. Since 2015, Google Classroom has been used as a Learning Management System (LMS) for posting homework, additional materials, and communicating with students. Additionally, administrative information is communicated to students via e-mail by ELC Coordinator. ELC students are asked for feedback twice during each session: a short Student Evaluation of Teaching (SET) is administered during the third week of the course, and a more detailed one is given to students in the last class.

Research Design and Methodology

The objective of this research was to discover the optimal format i. e., a combination of modalities and timing of classes, to teach EAL to adults using various modalities. As it was meant to inform practice, we employed a pragmatic worldview (Saunders et al., 2019).

The research was focused on the RBS ELC program for adults who study General and Business English in open groups as a non-formal education program. As changes and adjustments were made in response to both students' feedback and Covid-19 related changes in the environment, an

action research was chosen as the method (Clark et al., 2020). Overall, three iterations of the format have been implemented and results of SETs were compared to that of the F2F one (see Figure 1).
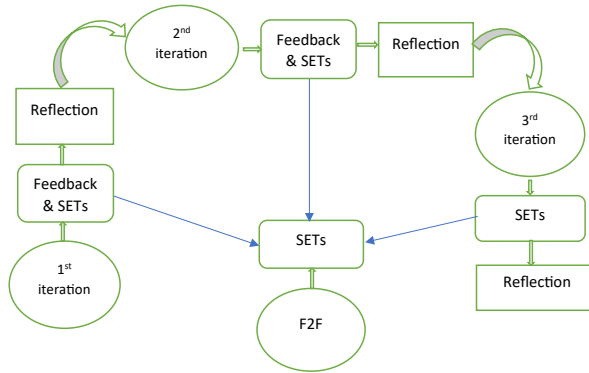
Figure 1. Research design: action research

The question we sought to answer was: which teaching format do adult students see as optimal? We used mixed method (QUANT + qual) in this research. To find out students' opinion, standard SETs collected after every course were analyzed. Those are survey forms combining a Likert-type questionnaire with values ranging from 1 to 4 with open-ended questions and administered on the last day of a course. Average values were calculated for each survey item. We also used additional surveys related to students' opinion of their experience and asking them for suggestions.

The Pre-Covid-19 Face-to-Face (F2F)

Prior to the Covid-19 pandemic, all courses at RBS ELC had been taught F2F. In the open groups, adult students met in RBS classroom twice a week from 18:00 till 21:00, and ELC ran three 12-week sessions a year (see Figure 2).
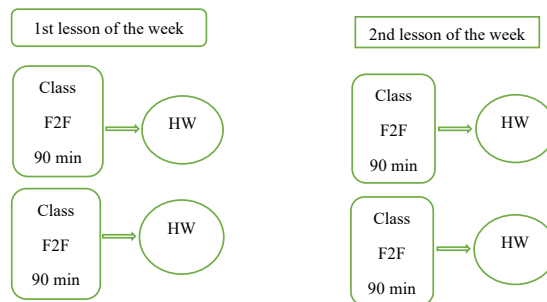
Figure 2. 'Pre-COVID' F2F format

As a non-formal fee-based adult education provider, RBS ELC monitors the proportion of students continuing or returning to studies. A consistent percentage of those (between 30% and 50% in each session) is a sign of student satisfaction with the training they get. This is further confirmed by consistently high results of final SETs, which is why the F2F course is taken as a benchmark for this research.

Environmental context

Following the spike of COVID-19 infections in Latvia, on 12 March 2020 the Government declared the State of Emergency (Order of Cabinet of Ministers No. 103, 2020) effective from 13 March. As the result, any on-site training was prohibited, and remote learning was recommended in all educational institutions. Initially planned to last until 14 April 2020, the State of Emergency was extended until 11 June, 2020. With the sudden change in course delivery mode, the teaching community realized that there was a need to quickly transfer education online, even though levels of technical and pedagogical support were less than ideal. In this situation, RBS ELC cancelled its Spring semester, and academic staff concentrated on developing a new format of the program that would be relevant in the future.

In the Fall semester of 2020 studies began on-site but as the number of Covid-19 cases increased, the Government declared the State of Emergency from 9th November 2020 to 6th April 2021, effective immediately (Cabinet Order No 655 of 6th November 2020, Cabinet of Ministers, 2020). Following this, all classes were moved online.

The 2021/2022 academic year started with on-site classes. However, a new State of Emergency was declared from 11 October 2021 until 11 January 2022 (Cabinet order No 720). Moreover, from 21 October the country went into an official lockdown that lasted until 15 November (Amendment to the Order No 748). Formal education courses could continue to run on-site for fully vaccinated students; however, non-formal educational programs were transferred online.

Rationale for a new format

Developing a new format, we pursued the following objectives: to maintain the quality of course delivery, to accommodate evolving needs of adult students, and to avoid potential disruption of training if it becomes necessary to quickly move into a fully online modality in the future. To meet these objectives, we considered the following:

1. Introducing an online component. With adult students increasingly working and communicating online and organizations considering hybrid work even after the pandemic, online language classes provide authentic experience. Besides, having a part of the course conducted online adds to

the convenience as students do not need to commute to the campus, and can participate in a class even when travelling.

2. Introducing an instructor-curated asynchronous part of classes. In any language class students perform some tasks individually, e. g., read a text before discussing it. Assigning those tasks to be done outside the class accommodates students with different paces and learning habits and allows to devote classroom time to more interactive or challenging tasks. Besides, anecdotal evidence shows that online classes are often slower than F2F ones, as sharing materials and putting students into pairs and groups in an on-line class takes longer. Therefore, a short Pre-Class task as an integral part of every class should enhance student experience.

3. Introducing a mobile application for training certain skills. While students choose a language center to have classes with an instructor, certain parts of a language training can be delegated to technology and done asynchronously. Besides, different adult students have different learning needs when it comes to sounds, stress, and intonation. Thus, we have chosen English Language Speech Assistant (ELSA) – an application based on Artificial Intelligence (AI) to provide personalized pronunciation and speaking training to our students.

4. Incorporating learning analytics. To provide data-based assessment and personalized recommendations for individual students, marks for graded Pre-Class tasks, written assignments, and tests should be collected and available for an analysis on Google Classroom Grades. Besides, the mobile application students use for training pronunciation provides data on time spent on the application and progress results for both individual students and groups to assigned teachers and a course director.

Based on the above, we designed a blended hybrid format which incorporates synchronous F2F and online modalities and adds asynchronous teacher-curated and mobile parts. A short asynchronous instructor-curated Pre-Class task was added to each class, and an AI-based mobile application for pronunciation training was provided for students in addition to their coursebooks. Instructors used Google Forms to create quizzes wherever possible so that the results automatically transferred to Google Classroom's gradebook. Another part of learning analytics was provided by the mobile application. The first synchronous class of the week was planned F2F and the second online (Figure 3).
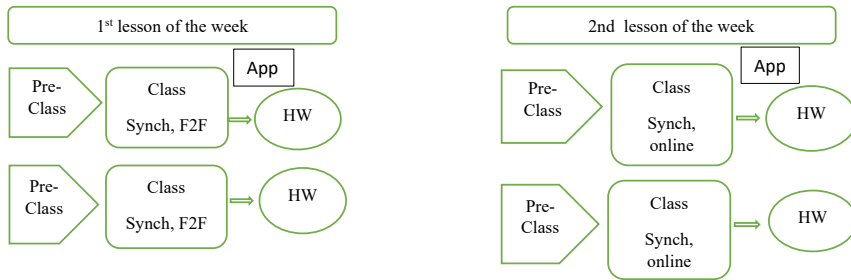
Figure 3. A blended hybrid modality

Note. This represents a blended hybrid format that incorporates synchronous F2F and remote learning, as well as asynchronous components. Changing government regulations combined with students' feedback led to several adjustments to the format. Thus, three distinct iterations of the format followed.

The delivery

The 1st iteration of the new format was first implemented in the Fall semester of 2020 (September–December). 90-minute synchronous classes were run from 18:00 till 21:00 for 12 weeks, similar to the previous F2F format. However, to ensure that it meets students' needs and facilitates their motivation to learn a language, careful monitoring and adjustments were necessary.

Following the Government regulations in November 2020, all synchronous classes were moved online thus effectively turning this course into a remote hybrid one. In December 2020, towards the end of the semester, we routinely surveyed students via Google Forms asking them about plans to continue studies and offering them a possibility to comment. We received $n = 27$ responses, and some of the most typical comments were the following (our translation from Latvian):

1. 'If the classes are to be online, I suggest to shorten each lesson by 30 min (so that the total class time is 2 hours), and to prolong the course. 3 hours in front of a computer is very tiring and harms one's eye-sight.'
2. 'I would prefer classes max 2 hours in one evening, especially if they are online.'
3. 'I really like that the classes are on Zoom, that saves both time and money (I'm not from Riga). I will be happy if they continue online'.

Based on the students' suggestion, we planned the 2nd iteration of the course to have synchronous classes for only 60 minutes and the course lasting 18 weeks to maintain the same volume. Since the course started when only online training was possible, it was held entirely online from February through June 2021. In March 2021, to gain students' opinion

of the new format, we surveyed them using Google Forms and received $n = 12$ comments, most of which fell into two categories grouped below.

Entirely favorable:

1. 'The learning process is very pleasant, 1h + 1h after work is doable. Not tiring'.
2. 'I'm satisfied, especially with the format from 18:00 till 20:10. I like the ELSA app a lot'.
3. 'The learning process is well-organized, effective, and comprehensive'.
4. 'I like the introduced model very much, and it's very convenient that classes are online. I'm not from Riga, it's good that there's no need to waste time commuting'.

All F2F classes take place in Riga, which means a long commute for someone who lives outside the city. It became especially problematic for people who worked remotely.

Less favorable:

5. 'The first course was easier to perceive, perhaps because now it's too much online'.
6. 'Online classes are tiring and it's difficult to concentrate – especially in the second part. It would be ideal to have classes $1\times$ on-site and $1\times$ online.'

Based on students' feedback, a 3rd iteration of the course was planned as blended hybrid with 60-min classes from September'21 through January'22. From mid-November and until the end of the course, however, due to the renewed Covid-19 restrictions, it had to be moved entirely online again. Students' opinions of this format are reflected in the final course evaluation.

Data Collection and Analysis

This research analyses SETs administered to all students on the last day of classes. The original form used in a F2F course contained 26 questions grouped into several categories: instructor, textbook and teaching materials, homework, and general reaction to the course. The form used in all three iterations of the hybrid courses had additional three questions regarding the mobile application. The form incorporates a Likert-type questionnaire, which is often used in education, and employs values from 1 (strongly disagree) to 4 (strongly agree) to avoid a neutral response. Collected data is routinely processed and mean values are calculated for each item in each group separately. For this research, mean values were calculated for every cohort of students, with the numbers of responses as follows:

'Pre-Covid' F2F (Fall'18): F2F with 90-minute classes. Administered on paper in class, $n = 126$.

1st iteration (Fall'20): blended hybrid with 90-minute classes for half a course, then online hybrid. Administered on Google Forms outside class, $n = 46$.

2nd iteration (Winter'21): online hybrid with 60-minute classes. Administered on Google Forms outside class, $n = 23$.

3rd iteration (Fall'21): blended hybrid with 60-minute classes for half a course, then online hybrid. Administered on Google Forms in class, $n = 55$.

Results

The research seeks to compare students' perceptions of different formats of teaching EAD course of the same content. The mean values calculated for each item of the questionnaire are presented in graphs grouped for each category. Figure 4 compares mean values of responses concerning instructors.

ELC instructors have always scored high in ELC students' evaluations, and such was the case in all iterations. Considering that the F2F modality (Fall'18) is used as a benchmark, it is perhaps understandable that for most of the aspects, the scores for that modality are higher than for the blended hybrid (90-min classes) and online hybrid.
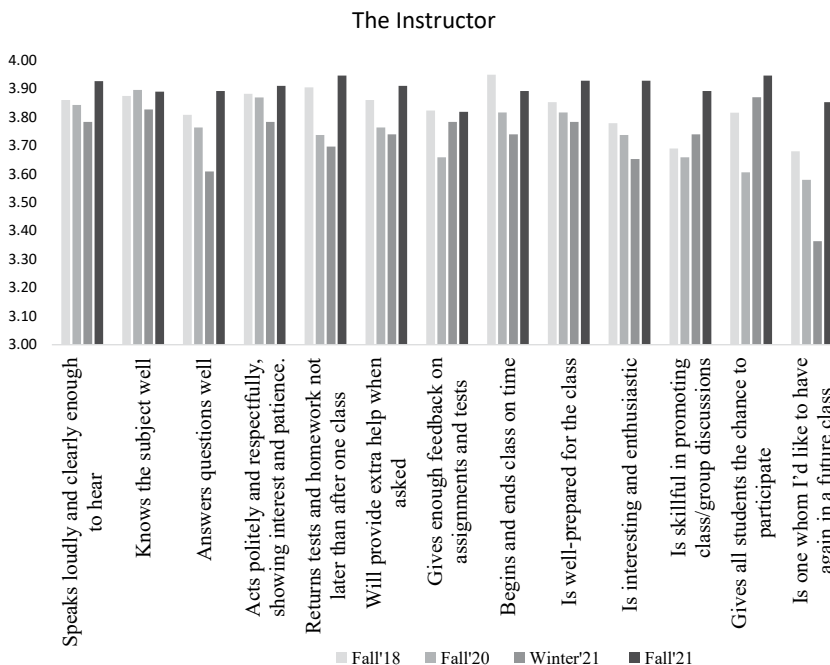
Figure 4. Summary of students' responses to questions regarding instructors

The 0.02 difference in scores between Fall'18 and Fall'20 for 'knows subject well' is not significant. The differences in scores for different aspects between the blended hybrid 90-min and online hybrid may indicate that students find it easier to appreciate personality of a teacher when they have a chance to see them F2F ('answers questions well', 'acts politely showing interest and patience', 'is interesting and enthusiastic'). Surprisingly, students see online modality as more conductive to participating in group discussions as well as getting feedback on assignments on time. One reason for the former might be the fact that shy students feel more comfortable participating in group work online (Campbell, 2007; Muhammad, 2020). At the same time, the highest scores in all aspects except time management for the blended hybrid 60-min format (Fall'21) shows that students see their instructors as best when they teach in this modality.

The next group of questions focused on teaching materials. Core coursebooks remained unchanged for each level in all the modalities, and instructors supplement them with their own materials to reflect their individual teaching style and to better suit the needs of a particular group. Figure 5 shows mean values of student responses.

The textbook and teaching materials
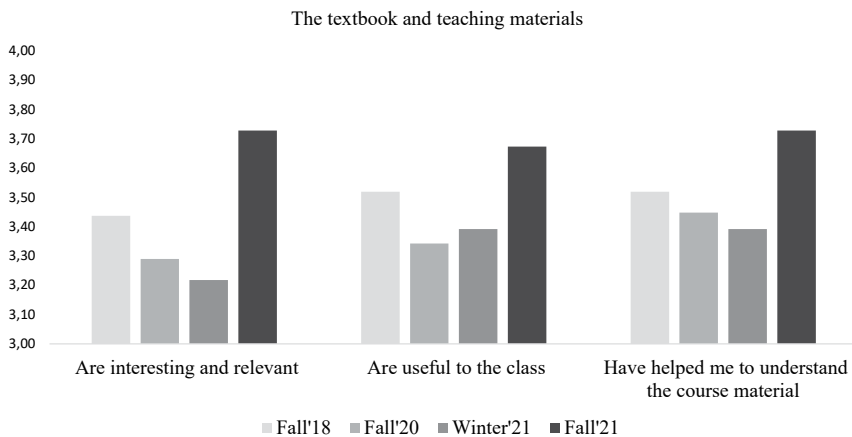
Figure 5. Summary of student responses regarding to course materials

In general, students in F2F modality see the textbooks and materials in a more favorable light than those who studied in a hybrid blended (90 min) and online ones. However, those who studied in a hybrid blended (60 min) see them as especially interesting and useful.

In addition to books and extra materials used in class, in Fall'18 instructors also posted materials for extra practice on Google Classroom. Some of those were mandatory but some optional. In the hybrid format, both

for blended and online modalities, a Pre-Class tasks were regularly posted. Students' evaluation of online materials is reflected in Figure 6.
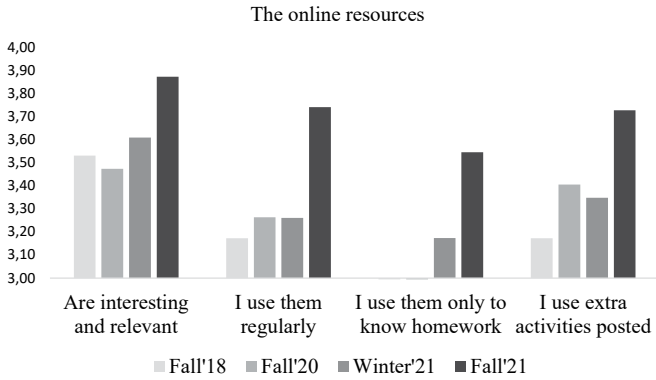
Figure 6. Summary of student responses regarding online resources

Apparently, even though students find online resources interesting, they do not use them regularly if teachers do not require it. However, high scores in all questions reflecting active use of online materials show that students like those. The hybrid blended (60 min) modality again seem to be the most motivating

In 2020, we introduced English Language Speaking Assistant (ELSA) – an AI-based mobile application for training pronunciation and vocabulary. It provides individual coaching based on each student's learning needs and instructors and the ELC Director have access to learning analytics. Questions about ELSA application were included in the form starting from Fall'20. Students' responses are summarized in Figure 7.
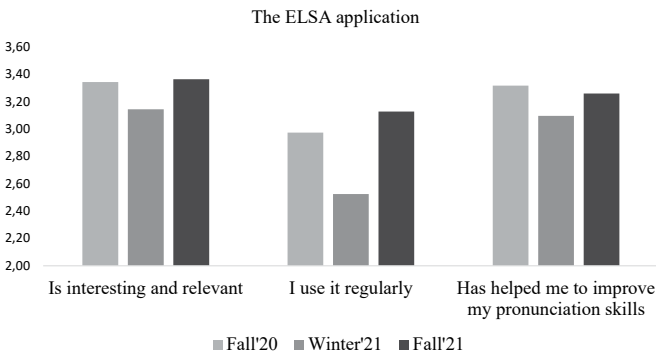
Figure 7. Summary of student responses regarding a mobile application

Apparently, students learning in blended modalities appreciate the application more and use it more regularly than those who study online. However, students use ELSA more when teachers remind them to do so.

The final set of questions deals with students' general perception of a course and is especially important when making decisions on the future course formats. The results are summarized in Figure 8.

My general reaction to the course
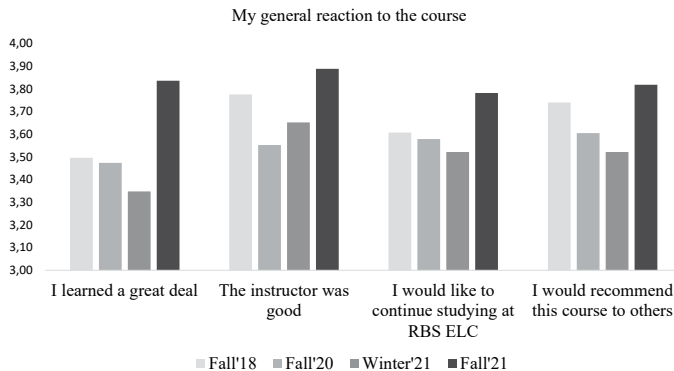
Figure 8. Summary of student responses regarding general perception of course

When asked to provide a general impression of the course, students apparently believe that the blended hybrid (60 min) format is the most preferable in all categories, with F2F as the second best. Blended hybrid (90 min) seems to be seen as preferable to online hybrid in all categories except how students see the instructor. One of the reasons for that might be that the format that included an online modality was taught for the first time in Fall'20, and it took some time for the instructors to get used to it.

Discussion

This research aimed to discover the format, i. e., a combination of modalities and timing of classes, of teaching EAL that adult students studying in open groups would consider as optimal. Although initially the course was planned as a blended hybrid, it underwent significant adjustments following not only changes in the governmental regulations but also considering student feedback and suggestions. Thus, three different iterations of the course have been implemented: blended hybrid with four 90-minute classes, online hybrid with four 60-minute classes, and blended hybrid with four 60-minute classes a week. Student opinions on teaching format from two separate surveys were used to guide changes introduced in the course format. The online hybrid modality is seen as the least favorable by students who study in open groups. This contrasts with the result of a study where

adult students in an EAL corporate course of similar content and approach displayed no significant difference of opinion between F2F and an online hybrid format (Ginzburg, 2022). The groups are different in two ways: corporate classes take place during working hours and are funded externally, while students in open groups study in their free time and cover tuition fully or partially. It would be useful to further research these differences by interviewing students from both groups. Another area for further research is to compare learning outcomes in each format by comparing results of achievement tests as well as delayed post-course proficiency test.

Conclusion

The results of final evaluations in each iteration were analyzed vis-à-vis a traditional face-to-face format, which was considered a benchmark. The results clearly indicate students' preference for the hybrid blended format with 60-minute classes that has evolved in the last iteration. Therefore, a recommendation to use it in future may be considered.

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TYPES OF DIGITAL LEARNING SOLUTIONS MOST USED BY EDUCATORS IN LATVIA

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ABSTRACT

Ongoing educational digitalization, as well as remote learning caused by the COVID-19 pandemic, has significantly promoted the use of digital technologies in education. Consequently, questions regarding the use of different digital solutions (DSs) have arisen, such as which DSs are best suited for teaching and learning, what types of digital learning solutions (DLSs) are freely accessible and what kinds of solutions are still insufficiently available to educators. The research questions were designed to answer (1) what kind of DSs educators are most interested in and (2) which DSs they have successfully implemented in their practice. To determine the answers to these questions, two separate data sets were combined. The first data set emerged from analysing site traffic data from the educational platform DigiKlase. lv, where DSs and educational resources that can be implemented in the teaching-learning process have been collected. The second data set was gathered during an educational technology mentor professional development course and from the Erasmus+ project "Network of technology INTEGRAtionists in pupils' informal education" (INTEGRA) educators in Latvia, where 798 educators were surveyed about their success with implementing DSs in their educational practice.

The results demonstrate that educators are most interested in electronic and digital teaching resources that are types of digital solutions with limited interactivity. Furthermore, educators are interested to further explore DLS that are accessible without registration, are free of charge, and contain methodological recommendations for using them in an educational setting. Nevertheless, instructions on how to use a DLS have a negative impact on their opening rate. Educators also prefer resources that are in the national language, visibly dismissing and not further exploring solutions that are in other widely used languages in Latvia, for example Russian or English. The data reveal that DSs are, overall, significantly less used in preschool settings and in subject areas that are not directly related to the usage of technology including solutions that could be used in any subject area like digital educational games, co-working documents etc. Furthermore, educators report that they have more successfully implemented DSs that emulate the analogue learning process, and fewer choose solutions that are related to working in a digital environment.

Keywords: *digital learning solutions, digital solutions, digital teaching materials, educator preferences, post-COVID education*

Introduction

Studies show that educators are confused about the appropriate use of digital technologies in teaching (Becta, 2008; Darling-Hammond & Hyler, 2020; Instefjord & Munthe, 2017; McGarr & Gavaldon, 2020; Røkenes & Krumsvik, 2014; Tondeur et al., 2017; Yang & Huang, 2008). There are two widely discussed reasons for the challenges educators experience when implementing digital educational resources. First, the implementation of digital solutions (DSs) in teaching-learning practice is very different from their application in other professions (Krumsvik, 2014). For educators, the employment of DSs does not only mean the use of digital technologies for their personal and work purposes, but also includes the didactics as well as the presentation and explanation of digital technologies to students and the assessment of their usage (Lund & Erikson, 2016). Therefore, educators need in-depth digital skills to be able to ensure technology-enhanced learning (Gudmundsdottir & Hatlevik, 2018; Ottestad et al., 2014; Purina-Bieza, 2021). Second, due to rapid technological development, the education sector is not only undergoing active change and facing the need to adapt, but also encountering inevitable resistance and differences in opinions about the solutions implemented in teaching and learning (Macgilchrist et al., 2020; McGarr & Gavaldon, 2020). Furthermore, the quality, usefulness and availability of different DLSs (digital learning solutions) in education may vary greatly (Daniela et al., 2018; Daniela et al., 2021).

Nevertheless, the COVID-19 pandemic has greatly increased the usage of digital technology in education, as well as highlighting related challenges such as difficulties in communicating learning objectives and the remote teaching-learning process, recognizing false news and searching and selecting information for both students and educators, in addition to the lack of support when new DSs need to be implemented (Organisation for Economic Co-operation and Development [OECD], 2020; Rubene et al., 2021a). The data for this study were collected during the pandemic period and therefore represent educator practice during both remote and face-to-face teaching-learning processes.

The aim of this study is to explore what kind of DSs educators are most interested in and which digital solutions they have successfully implemented in their practice. These insights may help to design necessary interventions as well as plan the development of DLSs and assess their quality based on educator interests and needs.

The research questions are as follows:
1. What kind of DSs are educators most interested in?
2. Which DSs have educators successfully implemented in their practice?

Factors influencing the educator decision when choosing DLSs

Several researchers have addressed the issue of successful DLSs in terms of what factors distinguish proficient educators from failing to implement DSs in education (see Table 1). Many of these researchers base their studies on the technology acceptance model created by Davis (1986), which illustrates user motivation for exploring digital technologies. It consists of interconnected motivational aspects: the perceived usefulness of the DS and ease of use that in combination emerges in the attitude towards usage of the DS and finally results in actual DS application (Davis, 1986). Based on this model, Panigrahi et al. (2018) suggest dividing factors that influence the use of DLSs into two categories: (1) personal factors, including attitude, perceived usefulness, ease of use, enjoyment, etc., and (2) environmental factors, including the characteristics of a solution, as well as aspects of subjective norms and national specificities. Analyses reveal that the most important factor for educators in choosing specific DSs is their attitude, which is closely related to their positive outcome expectations, self-efficacy, previous use of DSs and their colleagues' usage of DSs, as well as their perceived knowledge and skills in using them (Kreijns et al., 2013; Van Acker et al., 2013). Furthermore, the educator's attitude and the usefulness of DSs are essential for the initial adoption of the solution. The experience and satisfaction with the solution lead to continued intentional usage (Panigrahi et al., 2018). Štemberger and Čotar Konrad (2021) note that student and educator attitudes towards digital technologies in education predict their self-reported proficiency in using different types. They argue that there are two types of attitudes that most influence the usage of DSs (Štemberger & Čotar Konrad, 2021):

Attitudes towards assessment and critical thinking in education significantly predict self-reported proficiency in using communication, digital and online learning tools.

Attitudes towards empowering learners predict self-reported proficiency in using communication tools and digital resources, as well as digital and online learning tools.

Nevertheless, the national culture and practices related to using and implementing DSs play an important role in choosing a DS (Panigrahi et al., 2018), which can be linked to the notion that educators are more engaged in virtual activities when they experience a sense of community in the digital environment (Tsai & Bagozzi, 2014). This has been observed during the COVID-19 pandemic as a social problem in which all educators have been forced to discover new digital possibilities, but are now starting to show greater interest in DLSs and other opportunities to communicate, collaborate, and create a positive learning environment online (Darling-Hammond & Hyler, 2020; Dhawan, 2020; Rubene et al., 2021b).

Table 1. DLS Adoption Factors that Positively Impact Their Usage

	Štemberger & Čotar Konrad, 2021	Faustmann, et al., 2019	Panigrahi et al., 2018	Robles, 2016	Kreijns et al., 2013
PERSONAL FACTORS	Attitudes towards assessment and critical thinking Attitudes towards empowering learners	User-friendly, easy to use, intuitive Different learning groups and types are considered Encourages interactions between learners	Perceived usefulness Perceived ease of use Perceived enjoyment Attitude Perception of interaction Self-distraction/playfulness Cognitive absorption Cognitive age Perceived behaviour control Effort expectancy Performance expectancy	Perceived usefulness DLS is appropriate for achieving the objectives Attitude towards using digital technology in education The ease of use Perceived enjoyment of use	Attitude Previous use of DLSs Perceived knowledge and skills to use DLS Self-efficacy
ENVIRONMENTAL FACTORS		Learning materials are always available Quality of the content Offers variety of activities Free of charge Digital safety	Relative advantage Compatibility Trialability Observability Nation's generalized trust Eigenvector centrality and closeness centrality National culture Thermal climate and national wealth Social presence Subjective norm Social influence Facilitating conditions System inhibitors Information inhibitors Technology adoption in organizations		Colleagues' use of digital learning materials Subjective norm (influences educators with less experience using ICT)

Classification of DLSs

Although various DLSs are constantly evolving, each solution has its purpose and intended use. As is evident from previous research, educators have different usage patterns for different types of DLSs (García-Martín et al., 2019; Štemberger & Čotar Konrad, 2021). In this study, seven DLSs are distinguished (Rubene et al., 2021a):

1. Electronic teaching resources – non-interactive online teaching materials, such as worksheets, informative presentations, educational videos, and digitized teaching aids, that help to achieve learning objectives and outcomes.
2. Digital teaching resources – interactive online teaching materials, such as online educational games and tests, that also help to achieve learning objectives and outcomes.
3. Learning platforms – digital, interactive online learning and methodological tools that include structured content relevant to the education standards and learning outcomes – theoretical materials complemented with interactive tasks and quizzes providing immediate feedback on learning.
4. Learning management systems – platforms that enable the management and organization of the teaching-learning process in a digital environment and provide the following options: creating virtual classes or groups, exchanging documents, embedding and structuring content, assessing or adding comments (feedback), setting deadlines for tasks and sending specific tasks to a class/group, analysing progress by class or individually, as well as online chat room functionality, etc.
5. Tools for communication and distance teaching and learning – digital tools for remote learning that provide educator-student visual, audial and textual communication, as well as live learning – group work and online chat in addition to video conferencing, video recording, and screen sharing functionalities.
6. Tools for storage/collaboration – tools which allow groups of students and educators to develop a shared documents storage space and collectively work on ideas and projects. These include functionalities such as uploading files, developing shared document maps, editing documents, viewing editing history, leaving comments, etc.
7. Tools for creating learning content – digital tools that can be used to create interactive learning content, such as online tests, quizzes, games and interactive presentations.

Methodology

This study uses methodological triangulation, meaning that the issue was examined using two research methods (Flick, 2007). First, site traffic data were obtained from the educational platform DigiKlase.lv to determine what kind of DSs educators are most interested in. This nonreactive online data collection shows patterns of user activity that can be enriched using other data-gathering methods, allowing for a more successful interpretation of the findings (Janetzko, 2017). The surveys with educators and prospective educational technology mentors were used to better understand what DSs they have successfully implemented in their practice.

Non-reactive online data collection

DigiKlase.lv is an educational platform developed by the team of the Scientific Institute of Pedagogy of the University of Latvia. The platform was established to support teachers in Latvia and gather diverse DLS that explain and support the implementation of a technology-enhanced learning process. At the time of this study, the platform had assembled and provided 794 DLSs for educators, together with methodological recommendations and practical instructions to help implement them in the learning process. Each learning solution added to the platform has been thoroughly reviewed by the platform creators, determining: (1) the type of the solution based on previously described categories, (2) the languages and learning subjects in which the solution can be used, (3) the terms of use (registration, usage fee for educators and students, etc.) and other aspects that educators can view before choosing to use the solution. The platform continuously saves data about user activity. Therefore, each user is encouraged to become acquainted with and accept the privacy policy terms and conditions. The data used in this study were collected from 5th July 2021 to 22nd December 2021. More than 17,000 unique users from Latvia had visited the platform in this period. In this study, two measurements were analysed: (1) the count of clicks on each DLS description to learn more about it on the DigiKlase platform, and (2) the number of times a DLS was opened, which indicates the frequency at which users accessed the solution (through the webpage link or by opening a document). After the initial click on the solution, it can be opened in several ways: through a direct link to the learning solution, one to the methodological recommendations, or one to the instructions. Each counts as a separate opening of the specific DLS.

The data obtained were coded to depict each DLS, recording the ID, type, language, subject area, pricing, registration, occurrence of the methodological recommendations and instructions for use, as well as number of times a learning solution was clicked on and/or opened. All 794 DLSs were

arranged by the number of times they were clicked or opened. A selection of the most popular DLSs was developed that represented at least 50% of the total DLS (1) clicks, depicted by 104 DLSs, and (2) openings, illustrated by 76 DLSs. The duplications were eliminated, resulting in 111 DLSs (representing 53.5% of user interest) that were further analysed.

An indicator was created that shows the ratio between each DLS openings and clicks. The indicator depicts each DLS engagement statistic – whether users were willing to further open the DLS after clicking on it. The DLSs were arranged based on engagement indicator from lowest to the highest and divided into two comparative groups: (1) solutions that users were very interested in but were not willing to open, and (2) solutions that users wanted to further explore. Each group contained 55 DLSs, leaving the median solution out of further analysis. Two groups were further analysed to characterize what types of DLSs and resources gain the most user interest.

Survey with prospective technology mentors

A survey was developed to analyse what types of DLS teachers have successfully used in their practice. This data was compared between different subject areas and age groups to determine changes in DSL usage in diverse contexts. Survey was offered to educators who had chosen to take part in a two-year professional development course to become technology mentors (Sarva et al., 2022), as well as Erasmus+ project INTEGRA educators from Latvia who have significant experience in the usage of educational robotics and digital technology for teaching and learning. Educators were informed that the data gathered from their self-evaluation would be anonymized and used in research and had the option of declining to take part in the survey in case they disagreed with sharing their data. The summarized results were accessible to the professional development course material authors and educator trainers to customize the contents for participant needs. The survey questions analysed in this study include work experience, student age group, educator's subject area and the DSs successfully used by educators.

The 1060 responses were collected and compiled in Google Spreadsheets. Duplicate or otherwise invalid answers were removed. The remaining 798 responses were anonymized and further analysed. Google Spreadsheets and SPSS (Statistical Package for the Social Sciences) were used for further data sorting, analysis and visualization.

Results

DLSs that educators are most interested in

In the data analysis, the statistics of the 111 most popular DLSs were used, representing 53% of all DigiKlase.lv DLS clicks and openings. Digital teaching resources were the most common type of DLS (see Table 2). However, there were no communication and distance teaching-learning tools within the most popular DigiKlase.lv DLSs. Another aspect to consider is the engagement for each type of DLS, where electronic teaching resources have the highest opening rate, followed by digital teaching resources and learning management systems.

Table 2.   Characteristics of DLSs Included in Analysis

Type of DLS	Number of DLSs	Engagement indicator (DLS opening and click ratio)
Electronic teaching resource (without interactivity)	38	1.02
Digital teaching resource (with interactivity)	43	0.85
Learning platform (with interactive learning content)	8	0.54
Learning management system (with or without content creation functionality)	3	0.84
Tool for communication and distance teaching-learning	0	--
Tool for storage/collaboration	9	0.34
Tool for creating learning content	10	0.35

Dividing the most popular DLSs into (1) ones that are gaining clicks and (2) solutions that are likely to be further explored after a click shows that DigiKlase.lv users are more engaged with electronic and digital teaching resources, which they open and further explore more frequently than any other type of DLS (Fig. 1). These types of DLS users often open a resource more than once, meaning they watch the video instruction about the resource, in addition to becoming acquainted with methodological recommendations, etc.
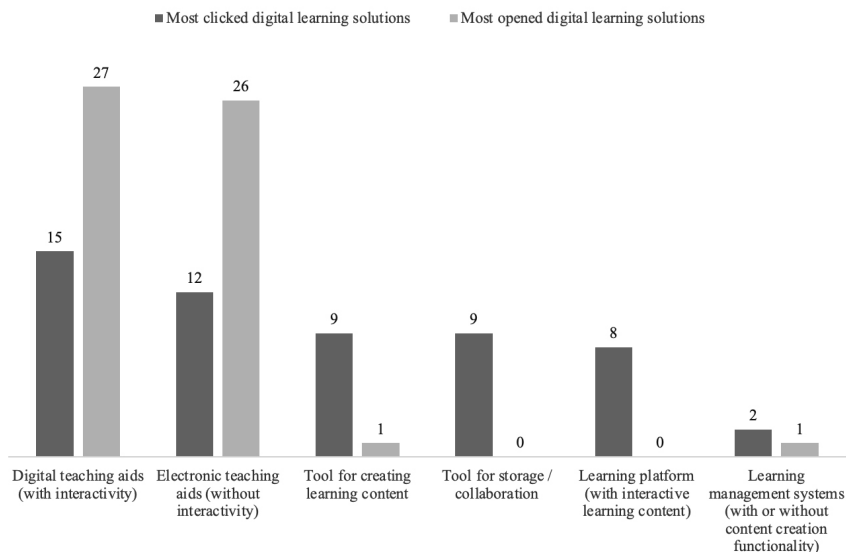
Figure 1. User Engagement with Different Categories of DLSs

Nevertheless, users show significant interest in digital tools and learning platforms, exploring available information on the DigiKlase.lv platform about their use and functionality, but not opening the tools to examine them further themselves. There are two exceptions where tools are frequently opened after a click: one is a tool for creating learning content and the other is a learning management system (Fig. 1). The tool for creating learning content that was commonly opened was Uzdevumi.lv, which is the largest and most popular assignment development tool in Latvia (Daniela et al., 2018). The most opened learning management system was Skolo.lv, a system recently developed by the national-level project Skola2030 (Skola2030, 2022).

The in-depth analysis of the most popular DLSs reveal the qualities that users are looking for in a DLS (Fig. 2). First, users are looking for and further opening DLSs in Latvian language. DLSs in other frequently used languages in Latvia such as English and Russian are attracting user clicks, but not being further explored. Second, users are interested in DLSs that are free of charge. They are still interested in solutions where part of the functionality is available at no cost, but they usually do not explore them further on the DigiKlase platform. Third, registration to use a DLS adversely affects the use of a solution both in the user's first interest in the solution as well as looking into it more. Finally, the support information about a DLS, such as instructions and methodological guidelines, play an important role when the educator is choosing a solution. Methodological guidelines are present in all 111 most popular DLSs and therefore can be considered an important

factor for users choosing to further explore a specific solution. Instructions for use, on the contrary, do not promote the further exploration of the solution, and even have a negative impact on it.
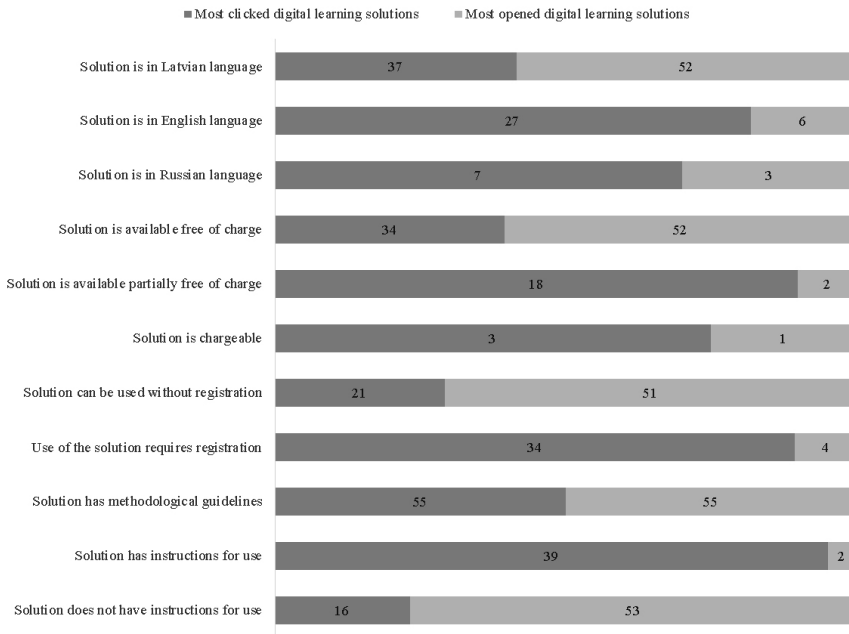
Figure 2. DLS Features and User Engagement

DSs that educators use in their pedagogical practice

To determine the use of DSs in pedagogical practice, a survey was carried out amongst educators taking part in a course to become educational technology mentors and educators involved in the Erasmus + project INTEGRA and 798 responses were analysed. Amongst these, 302 educators were primarily working in preschool, 189 in primary, 161 in secondary and 146 in high school. Of these educators, 66.9% had 10 or more years of experience working in school, and only 4.1% had two or less. Educators from all subject areas took part in the survey, with many of them representing more than one – 57% of the participants associated themselves with the technology area, 37% with mathematics, 37% with languages, 36% with nature sciences, 29% with social sciences and civics, 25% with cultural awareness and self-expression and the least, 16%, with health and physical activities.

The data indicate that learning videos and audio, digital presentations and digital educational books, worksheets and tasks, as well as digital

surveys and tests, are the most successful DSs used for educational purposes (Fig. 3). Fewer educators indicate that they have had success with using blogs and homepages, as well as the creation of digital visual materials, in addition to employing co-working documents for educational purposes.
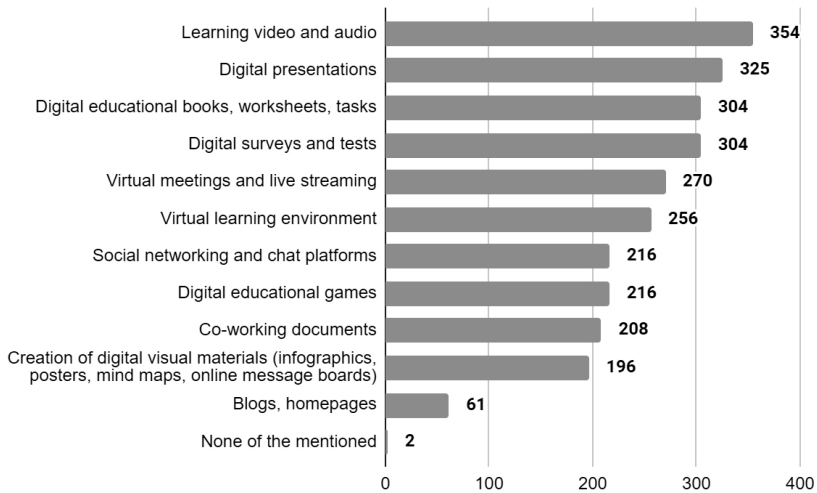
Figure 3. Types of DSs Successfully Used by Educators (Self-Evaluation)

A Kolmogorov–Smirnov test was performed to determine the normality of the data distribution. It was determined that the data are not parametric ($p < 0.01$). Non-parametric statistical methods were therefore used for further data analysis.

A Spearman correlation analysis was run to determine possible correlation between measured factors. No strong correlations were found between the successful use of DSs and educator work experience, student age group or subject area.

Moderate (< 0.7) negative correlation ($p < 0.01$) was noted for the preschool age group, indicating that almost all groups of DSs were less often used successfully for learning within this age group. Moderate positive correlations (> 0.3) that were statistically significant ($p < 0.01$) were observed for the use of online learning environments and digital surveys and tests for elementary school students, and for creating digital visual materials, in addition to using digital surveys, tests and online learning environments, as well as using digital co-working documents for secondary and high school students. Moderate (> 0.3) and statistically significant ($p < 0.01$) negative correlations were found for using digital surveys and tests in nature science, health and physical activities, languages, social and civics studies and the area of cultural awareness and self-expression. Online

learning environments were less successfully employed (correlation < -0.3 and $p < 0.01$) in areas relating to health and physical activities, as well as cultural awareness and self-expression. Digital co-working documents were less successfully utilized in the social and civic study area (correlation < -0.3, $p < 0.01$).

Discussion and conclusions

During the past few years, due to the COVID-19 pandemic, the need for and interest in DLSs have significantly increased. Educators have been forced to discover new ways to interact and organize teaching and learning, consequently developing new skills and exploring the possibilities. In this study, we aimed to answer two questions: (1) what kind of DSs are educators are most interested in, and (2) which DSs have educators successfully implemented in their practice?

The site traffic data from the platform DigiKlase.lv and data from surveys with prospective technology mentors show that educators were most interested in simple electronic or digital teaching resources that closely resembled ordinary workbooks and textbooks. The popularity of these solutions can be explained by educators' previous use of these types of materials (Kreijns et al., 2013), as well as the subjective norm of what kind of solutions can and should be used in the educational setting (Kreijns et al., 2013; Panigrahi et al., 2018; Robles, 2016).

In this study, factors such as the use of national (Latvian) language, being free of charge, and having methodological guidelines have demonstrated the increased interest of educators in DLSs and can also be recognized as facilitating conditions (Panigrahi et al., 2018) for educators choosing DLSs.

Although the educators showed interest in different types of digital tools that allow active engagement both from educator and student, they were hesitant to further explore them. These DSs are more complex and require learning to use them; therefore, the perceived ease of use and enjoyment can be lower and the effort expectancy to use higher, which repels educators from initially starting to employ them (Panigrahi et al., 2018; Van Acker et al., 2013). The availability of instructions for using a DLS does not convince educators to explore the solution further. On the contrary, the data show that educators avoided DSs with such instructions that might emphasize the complexity of the solution. Furthermore, many digital tools are not free of charge, which in this study and Faustmann et al.'s (2019) analysis represents a significant obstacle for an educator to start a new DS implementation in the teaching-learning process.

DigiKlase.lv users had a minor interest in tools for communication and distance teaching-learning and learning management systems. This can be

explained by technology adoption in organizations (Panigrahi et al., 2018), as, during the pandemic, most schools had agreed-upon tools that they were using for communication with students, parents, and colleagues, meaning educators did not have the need to search for these DSs themselves, but rather adopted the ones already used in their organization.

It can be concluded that educators felt safer using and were more interested in DSs that replicate existing learning experiences than those which are characteristic of the virtual learning environment. Therefore, they preferred replicating existing learning experiences rather than creating new kinds of experiences customized for virtual mediums. In the virtual medium this means stripping much of the possible interactivity offered by DSs, which makes learning more frontal and less engaging. This is concerning, considering how important the engagement of students is, perhaps especially in virtual learning (Abrami et al., 2011; Bernard et al., 2009; Martin & Bolliger, 2018). Educator preferences for less sophisticated DSs have been observed in Latvian education system before (Daniela et al., 2018), and a lack of engaging DLSs, especially in the Latvian language, has also been established (Daniela et al., 2021). To what extent the observed educator preferences were connected with the lack of qualitative DLSs in certain digital formats such as games, as well as the accessibility of DSs and skills for using them properly, in addition to enthusiasm in using more engaging approaches for virtual learning and other influencing factors remains undetermined.

DSs were less used in the preschool age group. This is perhaps not surprising, considering the specifics of the age group, including the fact that many DSs are not well customized for young students for extended periods of time (Gottschalk, 2019; Rubene et al., 2021a). However, even at a young age students should be offered opportunities to learn competence in using DSs, perhaps particularly because this age group is potentially most negatively influenced by the misuse of DSs. DSs are also less used in other subject areas, apart from technologies. This could be connected with the fact that educators teaching subjects connected with technologies are more competent in using DSs, but could also indicate that educators are exposed to social influence and their colleagues' use of DSs and selectively choose DSs based on subjective norms of the subject they teach (Kreijns et al., 2013; Panigrahi et al., 2018).

In terms of further research, it will be important to analyse reasons for educators selecting particular DS for their practice, to understand what support should be provided for educators to better implement DSs in learning and ultimately provide qualitative technology-enhanced learning for every student.

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FACTORS INFLUENCING DIGITAL COMPETENCE: A FOCUS GROUP STUDY FROM THE PERSPECTIVE OF THE MEDICAL COLLEGE STUDENTS

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ABSTRACT

Over the last decade, learning and working in medicine has been increasingly influenced by digital tools. Today's medical students are growing up in a digital age where digital tools and devices are a regular part of professional life. The development of digital competence is crucial for healthcare education, as healthcare professionals will be the ones helping orientate patients in digital healthcare systems and tools. This study aims to explore the opinions and experiences of medical college students regarding the factors influencing digital competence. Four focus group discussions were organised, with 26 medical college students in total in various study programmes in December 2021. The interviews were conducted in Latvian and transcribed by the lead researcher. Thematic analysis of the focus group discussions identified four main themes to be associated with the factors influencing digital competence: personal factors (self-confidence in using Information and Communication Technologies (ICTs), attitudes towards ICTs, prior training on ICTs, motivation), learning design (online, blended learning), lecturers' digital competence and external aspects (family support, Covid-19 pandemic). This study presented results that could also be helpful for other universities to promote targeted development and improvement of digital competence of their students.

Keywords: digital competence, focus group, healthcare education, information technology, students' perspective

Introduction

In recent years digital competence has become the main notion in the discussions about which kinds of skills and competences would be required in the future society. Healthcare is one of the fields where development of digital competence plays the key role, especially taking into consideration digital revolution and development of e-health system. Healthcare is

introduced to a huge number of new digital solutions, such as Big Data, Artificial Intelligence, bio-sensory technologies, which allow to monitor health quicker, and discover various health problems in the society and issues in the healthcare industry (Sharma et al., 2018). Healthcare professionals are more and more often using e-health system is their work; patient health data is stored digitally, and taking into consideration the Covid-19 pandemic, there has been a huge increase in demand and offer for e-appointments and consultations. As the result of digital transformation, technologies and tools such as virtual reality, Artificial Intelligence, Big Data etc. are entering the healthcare field (Sætra et al., 2021). In order to successfully work in the digitalized healthcare industry, healthcare professionals have to learn new multi-layered competences and new fields, including a different model of the staff-patient relationship that is based on the mutual trust. Gradually, as the result, training digital tools are to be mastered, and there are also changes to happen in healthcare service technical representation, as well as cooperation and sharing approach with the help of a working system (European Economic and Social Committee, 2017).

Certain research data reveals flaws in the knowledge of healthcare professionals, for example, in relation to the principles of data processing and analysing, or to the knowledge of basics qualities of the clinical information system (Dixon et al., 2017; Walpole et al., 2017; Jimenez et al., 2020). It is very important though for the healthcare professionals to have digital knowledge, as it will help them to provide better service for their patients.

The level of digital competencies of healthcare professionals is closely linked to evidence-based healthcare and includes patient education. Healthcare professionals can encourage patients to critically evaluate the available health-related information resources so as not to jeopardize their health (Theron et al., 2017).

The development of digital skills and competences is particularly important in healthcare studies, as healthcare professionals will be the ones to help patients navigate digital healthcare services. In order to effectively include development of digital competence in healthcare studies, it is first necessary to understand how digital competence is acquired. It is important to see how much depends on the content of studies, and how much depends on other influencing factors.

Based on the above, focus group discussions were organised within the framework of this study to find out the opinion of medical college students about the factors influencing acquisition of digital competence.

Digital competence

Digital competence is a relatively new term that has not yet been precisely defined. It first appeared in the documents related to politics

(European Council, 2006; European Commission, 2010; Eurydice, 2011). This term has also been differently interpreted (for example, digital ability, digital competence, e-ability, e-skills, e-competence, computer skills and media user skills) in both political and academic background. All these terms point out the necessity to use technologies in the digital age (Ferrari, 2012).

Digital competence is one of the eight lifelong education basic skills defined by the European Commission, and it is defined as follows: "Digital competence is confident, critical and responsible use of digital technologies for learning, working and integrating into society. It includes the ability to use information and data, use of communication, cooperation and mass media tools, creation of digital content, security, problem solving and critical thinking" (European Council, 2018).

Most researchers point out that digital competence is not simply the use of ICT technologies, but also a requirement for employment and citizenship, that helps individuals to successfully participate in the society of the 21st century (Guzmán-Simón et al., 2017; Ala-Mutka, 2011; Ferrari, 2012).

Digital competence is researched in various frameworks; for example, Calvani working in collaboration with other colleagues developed a framework that includes 3 dimensions: technological, communication and ethical, and mutual integration of these areas (Calvani et al., 2008).

Delphi research involved 95 experts from various industries in Europe, and Janssen with colleagues (Janssen et al., 2013) concluded that digital competence has 3 main components: knowledge, skills and relationship, which are related to 12 different fields – general knowledge and functional skills, use in everyday life, specialized and advanced competence for work and creative expression, technology mediated communication and collaboration, information processing and management, privacy and security, legal and ethical aspects, balanced attitude towards technology, understanding and awareness of role of ICT in society, learning about and with digital technologies, informed decisions on appropriate digital technologies, seamless use demonstrating self-efficacy.

Another widely used framework is the framework of digital competence of European citizens, which is also known as DigComp, divided into 5 areas: information and data literacy, communication and cooperation, creation of digital content, security, and problem solving.

Digital competence influencing factors

Research until now suggests that development of digital competence is influenced by many factors simultaneously; for example by personal environment factor, socio-demographical factor (Hatlevik, 2015; He & Chang, 2017; Benali et al., 2018; Jiménez-Hernández et al., 2020), views

and relationship in the society in regards to information technology, study results, learning strategies and digital competence of tutors (Cote & Milliner, 2016; Jiménez-Cortés et al., 2017). Current available research is mainly focused on representatives of the field of education or students and there are relatively few publications specifically about factors influencing digital competence amongst medical students or amongst healthcare professionals.

For example, in the research conducted by a scientist Jiménez-Cortés amongst 368 female students it was discovered that there is a connection between the learning style and digital competence. Students who used a wider range of learning strategies showed higher results in digital competence (Jiménez-Cortés et al., 2017).

In the research conducted in 2015 in Norway (amongst 9th grade students, however) it was discovered that digital competence is influenced by factors such as study results in the previous semester, mastery aim or task completion driven studies, socio-economic background of student's family and also the language spoken in the family (Hatlevik, 2015).

The research conducted amongst teachers showed that age, professional experience and previous ICT studies significantly affect the level of digital competence (Benali et al., 2018; Jiménez-Hernández et al., 2020)

In turn, the research conducted amongst university students shows that sex is an important factor that influences the self-evaluation of student's digital competence. Most research showed that male students rated themselves higher than female university students in several sections of digital competencies such as information and data literacy, digital content creation and problem solving (Zhao et al., 2021; Cabezas González et al., 2017).

Research conducted about digital competence level amongst healthcare specialists and its influencing factors shows that important are demographical factors, work experience, professional qualification and specialization.

For example, participants of a research conducted in Ethiopia – healthcare professionals – showed relatively low level of basic digital competence. Problem solving, communication and safety were the main indicators in lower scores in digital competence. This study found that sex, educational status, profession type, monthly income and years of experience all significantly affect healthcare providers' digital competence (Shiferaw et al., 2020).

In turn, the research carried out in Scotland, in which took part 131 pharmacist, did not indicate that sex, age or previous work experience impacted healthcare providers' digital competence level (MacLure & Stewart, 2015).

A research carried out in Switzerland amongst medical professionals and nurses in psychiatric hospitals studied the relation between technostress and digital competence and revealed that higher digital competence was tightly

associated with lower technostress levels. The same research concluded that younger healthcare professionals perceive themselves as having higher digital competence (Golz et al., 2021).

The use of digital services has become an integral part of a nurse's profession and it makes digital competence crucial to carrying out daily responsibilities. Research amongst nurses up until now has been more connected with informatics competence or computer literacy. For example, a study carried out in Finland aimed to evaluate the potential impact of national educational initiatives launched in 2015 on the nursing informatics competences of Finnish registered nurses. Nurses' graduation year was associated with their overall nursing informatics competence and the specific competence related to terminology-based documentation. Nurses who graduated after the initiatives had higher informatics competence than nurses who had graduated before that (Kaihlanen et al., 2021).

Research conducted amongst nurses confirm the connection between computer literacy and positive attitude towards computers. Computer-literate nurses displayed positive attitudes towards the use of computers in health care (Gürdaş Topkaya et al., 2015; Malo et al., 2012).

The results of research conducted in Taiwan and South Korea revealed that personal innovativeness in ICT, computer education and age are significant factors that raise computer literacy levels (Hsu et al., 2009).

There are relatively few studies about external factors influencing digital competence amongst healthcare professionals. Biggest part of available research is mainly focused on self-assessment of digital competence and computer literacy. This research, however, mentions various factors influencing digital competence, such as sex, age, work experience, attitudes toward ICT, graduation year and technostress. Considering all of the above, this research will explore opinion of medical students about factors influencing digital competence. This will possibly help to discover some other important factors that contribute towards developing digital competence.

Methodology

This is a focus group study. We aimed to collect qualitative data by engaging groups of medical college students in an informal group discussion focused on their perceptions of factors influencing digital competence.

Focus group study happened in several stages:
- theory and context study;
- choice of appropriate qualitative method;
- drawing up questions for focus group discussion;
- inviting the research participants to attend the discussion;
- focus group organization (data collection);

- data processing (thematic analysis);
- result processing.

The participants were students recruited from one of Latvia's medical colleges. The study was approved by the medical college's Ethics Commission and participation was voluntary, with prior informed consent given of the purpose and its confidentiality.

Participants and recruitment

Information about the opportunity to participate in a focus group discussion was published in the medical college's e-study environment in the news section. The participation in the discussion was voluntary. When registering for the discussion, the students were asked to provide information about their age, sex, education level, study program and year. A total of 26 medical college students (24 females and 2 males) participated in four small group online discussions. The average age was 31.30 ($SD = 10.46$). Ten participants already had higher education, while the remaining 16 had secondary education.

Four online focus groups were formed according to the study programs (Treatment, Nursing, Therapeutic Massage and Pharmaceuticals) involving students of different study years and were organized in December 2021. The composition of each focus group is illustrated in Table 1.

Table 1. Focus groups participants

Focus group	Participants	Study program
Group 1	8 students: 2 men, 6 women	Treatment
Group 2	11 women students	Nursing
Group 3	5 women students	Pharmaceuticals
Group 4	2 women students	Therapeutic Massage

The length of each focus group discussion was from 45 to 60 minutes. In the beginning of the focus group discussion, the participants were introduced to the definition of Digital competence based on the Citizens' digital competence framework (DigComp 2.1: eight learning levels and usage examples).

The interviews were conducted in Latvian. At the end of each interview, the moderator provided a summary and feedback on the answers received from the respondents. Then respondents reflected, confirmed or added to the content of their answers. After each focus group discussion, the moderator prepared a detailed interview transcript.

Focus Group Protocol

The main aim of the focus group was to understand what factors are influencing digital competence from the perspective of medical students. To achieve this goal and promote a more productive discussion, the students were asked the following question:

• Which factors influence digital competence?

Qualitative analysis

This study used the thematic analysis approach outlined by Braun and Clarke (Braun & Clarke, 2006).
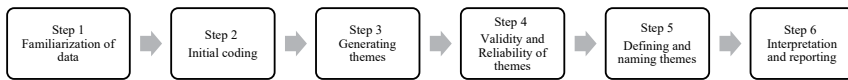
Figure 1. Thematic analysis approach by Braun and Clark (2006)

The qualitative data analysis was done following the six steps shown in Figure 1. After each discussion, researchers read transcripts of all the focus groups to get an overall idea about the answers. The next step was to encode the obtained data, and in this phase, researchers started to organise the data in a meaningful and systematic way. The researchers were concerned with addressing specific research questions and analysed the data with this in mind – so this was a theoretical thematic analysis. The researchers coded each data segment relevant to it or captured something interesting about the research question. Finally, the researchers compared the codes, discussed them and modified them before moving on to the rest of the transcripts. After generating codes, the researchers moved to search for themes. In this process, themes were characterised by their significance. In the next step, the researchers read the data associated with each theme and considered whether the data did support it. The final step involved weaving together the analytic narrative and data extracts.

Results

The thematic analysis was conducted to explore the opinions and experiences of medical college students regarding the factors influencing digital competence. Four main topics were identified with the factors influencing digital competence: "personal factors", "learning structure", "external conditions", and "teacher's digital competence" shown in Table 2.

Table 2. Themes, Codes and Examples of Opinions Expressed in Response to the Discussion Question: Which factors influence digital competence?

Themes	Codes	Examples (transcript text)
personal factors	self-confidence in using Information and Communication Technologies (ICTs);	*"I have never had any contact with digital things or anything like that before. I graduated from high school thirteen years ago and started learning digital skills again"*
		"I started my studies immediately after graduating from high school, and I had no problems adjusting to the study process, including using a variety of digital tools or platforms"
	attitudes towards ICTs;	*"I have been using computers since 1998, so I started learning digital skills pretty quickly, so right now, I'm not afraid to work with something new"*
		"I do not own a PC and I do not like all those digital things, which made coming back to studies after a break difficult, because a lot of things happened remotely"
		"One should know where to find the information, how to use it and show to others, the technology helps me a lot"
	prior training on ICTs;	*"I participated in the RigaTech Girl project, and it was an excellent opportunity to learn and improve ladies programming skills"*
	motivation	*"Motivation is essential; you have to learn to do something because no lecturer will do it for you"*
		"The desire to develop and motivation to continuously educate myself"
		"One needs willpower to learn something new"
learning design	online learning;	*"As I switched to remote learning, I began to take notes online, export files, and use the GoodNotes application"*
		"For me, it was something new that could listen to lectures differently"
		"Remote studies make you learn how to use technologies"
	blended learning	*"The lecturer posted an audio lecture in Loom, and I had to search for information to learn how to open, use, and perform the functions needed to listen to the e-lecture"*

Continued from previous page

Themes	Codes	Examples (transcript text)
external aspects	family support;	*"While I was studying and my husband was very supportive, it was very motivating, really very motivated me"*
		"I have three children who supported me during my studies when I began to use different technologies and platforms, because the beginning of my studies was not easy"
	Covid-19 pandemic	*"Thanks to the Covid19 pandemic, more information was sought and processed, learning new platforms such as Zoom and MS Team"*
		"The pandemic promoted inequality, because not everyone has a high speed Internet access at home, and not everyone can properly connect to classes"
		"You can say that during Covid you are forced to use the Internet more, look for the information and use Zoom, and it was a challenge for me"
lecturers' digital competence	lecturers' attitudes towards ICTs	*"Much depends on the lecturer; if he uses the word, then us too, if Zoom – then we too. We adapt to lecturers"*
		"As for the digital skills of the lecturers, it is interesting when you have to log in to the lecture on Zoom platform, then one puts the link in Moodle system and goes straight in; the other only gives the codes. Therefore you have to log in to Zoom system and enter everything yourself"
	utilising digital technology in teaching	*"It is precious that the lecturers record the lectures and place them in Moodle. We have the opportunity to listen again and learn the teaching materials more thoroughly. At the same time, some lecturers disagree and even admit that they do not know how to do it"*

Within the framework of the thematic analysis, the themes were identified based on the codes, which in turn were made based on the transcripts. During this research, students emphasized the impact of personal factors, such as their personal motivation, attitude towards digital technologies, and previous experience in working with IT technologies. Examples from Table 2 show both positive and negative attitudes of students towards ICTs. Motivation is particularly highlighted as a key factor in developing digital competence. One student admitted it was due to studying in the medical college that they started to learn digital skills again. Another student mentioned that prior training on ICTs helped them to improve digital competence. During the discussion, students also mentioned learning design as

one of the factors influencing digital competence. Transition to online and hybrid study process during Covid-19 pandemic was one of the key factors in developing digital competence. Giving personal experience examples, the participants explained that they had to learn how to use new platforms and adapt to the online study process. Students also mentioned lecturers' digital competence as the factor influencing digital competence of the students. One student stated that the type of a platform or technology used for studies had a direct impact as well, since the students then had to learn those specific tools. During the discussion, the students also said that external factors such as family support or the Covid-19 pandemic could influence the development of digital skills in individuals. Students were happy to share their personal experience in regards to this question and told about their family and children support in mastering digital technologies, which helped them to successfully participate in the studies.

Opinions about the influence of Covid-19 pandemic on developing digital competence, however, were divided. One participant highlighted that Covid-19 pandemic promoted inequality in terms of access to technology. They noted that not everyone, including school pupils, was able to have a quality connection to join the studies. Another participant, in turn, said that it was the pandemic that encouraged them to master new digital tools and platforms.

Discussion

University students are expected to have the appropriate digital competence to face the demands of the changing educational model and to meet the challenges of the future work (Zhao et al., 2021). Healthcare is one of the areas that is rapidly undergoing digital transformation nowadays. Consequently, the development of digital competence of medical students is especially important, as digital technologies change the healthcare services design, communication with patients, diagnostics and treatment tactics. In order to be able to provide the necessary support in development of the digital competence, the opinion of medical college students on the factors influencing digital competence was clarified in the framework of this study. According to the completed thematic analysis, there were 4 main topics identified in relation to the factors influencing digital competence: "personal factors", "learning structure", "external conditions", "teacher's digital competence".

Based on the answers provided by the students in the focus group during the discussion, "personal factors" was identified as the first topic. Students acknowledged that it is self-confidence using information and communication technologies (ICT), attitude towards ICT, prior learning

in the field of ICT and motivation that are the most important personal factors that can influence their digital competence. Studies by other authors have also revealed that attitude towards ICT can affect the level of digital competence (Ryder & Machajewski, 2017; Kim et al., 2018). For example, researcher Kim and his colleagues found in their research that students' positive attitude towards ICT contributed to a higher level of digital competence in the study process at the university (Kim et al., 2018). In turn, a study in Spain has revealed that, although university students had a positive attitude towards ICT, their level of digital competence was just average (Guillen-Gamez et al., 2020). The results of these studies demonstrate that there is no unambiguous opinion that a positive attitude towards ICT contributes to the development of digital competence.

As part of the focus group discussion, medical students stated that prior learning experience could affect the level of digital competence; specifically, self-evaluation of digital competence is increasing. Studies conducted by several authors also confirm this conclusion. (Sánchez-Caballé1 et al., 2020; Romero-Tena et al., 2020).

The learning structure was identified as the second topic for this study. The results of a study conducted by Buluma and colleagues show that the mixed learning approach has improved the level of digital competence in line with navigation in the Internet environment, operating mobile Internet, operating Internet-based search engines, and formal Internet skills among teacher trainees (Buluma & Walimbwa, 2021).

The students stated that Covid-19 pandemic also contributed to the development of their digital competence, thus identifying the third topic as "external conditions". The results of a study conducted by researchers Sari and Yoni also confirm that the Covid-19 pandemic promoted students' digital literacy due to the transformation of the learning environment into the e-environment; as a result, students were forced to learn various online platforms in order to successfully engage in the learning process (Sari & Yoni, 2021).

Discussion participants also stated that family support could encourage development of digital competence. No scientific articles supporting this connection were found, but the influence of family background on the digital competence has been studied. Hatlevik and colleagues found out in their research that family background plays a role when explaining variations in digital competence (Hatlevik et al., 2015).

The teacher's digital competence was identified as the fourth topic for studying the factors influencing digital competence. Researchers conducted by other authors also confirm that teachers' digital competence is one of the keys to success in promoting not only students' own digital literacy, but also academic achievements (Maini et al., 2021; Sillat et al., 2021).

This study is not exhaustive. Probably not all influencing factors were identified in this study, as individuals were not always able to clearly reflect and understand what could specifically affect the digital competence of healthcare students in this case. The majority of the focus group participants were women; there were 24 women only two men. It is hence possible that certain factors influencing digital competence were not discovered due to unequal sex ratio of participants in this research.

This research identified factors influencing digital competence from the perspective of medical students, but deeper research is required in the future to learn the direction of this influence: for example, whether it promotes or slows down the development of digital competence. Another possible direction for future research is analysis that could study differences between various study programs and people with different level of prior (?) digital competence.

Despite these limitations, the results obtained in this study provide important data on the factors influencing the digital competence of medical students.

Conclusions

In order to promote the development of digital competence in the study process in the future, a focus group discussion with medical students was conducted within the framework of this study to find out their opinion on the factors influencing digital competence. The focus group interview questions provided the medical students with an opportunity to express their views on digital competence and the factors that could influence it. The obtained results revealed that digital skills are influenced by the following important factors: 1) personal factors (self-confidence in using information and communication technologies (ICT), attitude towards ICT, prior learning about ICT, motivation); 2) learning structure (online, mixed learning); 3) teachers' digital competence and 4) external conditions (family support, Covid-19 pandemic). More studies are needed in order to find out other potential factors influencing digital competence that were not mentioned in this research. Obtained results of the research cannot be generalized and applied to other groups of students, because it carries some risk stemming from the limitations of the research. Nevertheless, this study presented results that could also be helpful for other universities to promote targeted development and improvement of digital competence of their students.

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THE EFFECT OF STUDENTS' SELF-REPORTED INFORMATION AND INFORMATICS LITERACY ON FINANCIAL LITERACY AND THE USE OF ONLINE PAYMENT

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ABSTRACT

In today's world, where almost everything takes place in the virtual world, information and informatics, as well as financial literacy are becoming increasingly important. Although most of the university students are considered to be sufficiently information and informatics literate, the Covid-19 pandemic has confirmed how necessary it is to possess the skills and knowledge related to these literacies in order to maintain quality of life by using new financial technologies and be effective in various spheres of life. This study investigated whether there is connection between these two literacies and financial literacy of university students. Also, students' demographic data, Internet use, agreement with statements concerning information and informatics literacy as well as the use of payment services before and after the Covid-19 pandemic was explored. In addition, the research aim was also to see if acceptable neural network model could be made for distinguishing students based on their reported financial literacy. Monte Carlo exact test showed that there is statistically significant association at the 0.05 level of significance between the self-reported informatics literacy and information literacy (p = .000, two-sided), age (p = .027, two-sided) and by making payments via digital wallets in 2021 (p = .007, two-sided) and 2020 year (p = .024, two-sided). Also, Monte Carlo exact test showed that there is statistically significant correlation at the 0.05 level of significance between respondents' information literacy and their work experience (p = .005, two-sided) and who covers their life expenses (p=.019, two-sided). The Monte Carlo test also showed that both of these literacies have statistically significant relationship with financial literacy (p = .000, two-sided), but statistically significant relationship was not found between financial literacy and payments via digital wallets. Concerning the neural network approach, the obtained multilayer perceptron (MLP) neural network model gained overall efficiency of 97.5% in distinguishing students based on their level of financial literacy.

Keywords: financial literacy, informatics literacy, information literacy, neural networks, university students

Introduction

21st century competencies can be divided into three categories: conceptual, practical, and human, with practical competencies including media and information literacy (with computer and digital literacy as a key component) and learning literacy (Lee, 2013). In the new teaching, the literacy approach is not monolithic, but literacy is divided into several more specific competencies that feed into the concept of multiliteracy, including information literacy, informatics literacy, media literacy, computer literacy, electronic literacy, financial literacy, etc., with different competencies, goals, and acceptance of new, often digital, tools. (Tao, 2002; Tyner, 2014; Tafazoli et al. 2017). All of these competencies are important to navigate today's dynamic and virtual environment. There is a large body of research that focuses on identifying the achieved level of different competencies and, more specifically, the impact of competencies on people's behaviour and well-being, such as the impact of financial literacy on payment behaviour (Fernandes, Lynch, Netemeyer, 2014, Lusardi, 2015; Allgood, Walstad, 2016). This paper analyses the effect of students' self-reported information and informatics (computer) literacy on their financial literacy and online payment behaviour as they become increasingly important in daily life, especially since the emergence of the COVID-19 pandemic. It is predicted that digital payments will reach US$7,860,739 million in 2022 and will continue to grow at 10.88% annually (Statista, 2021). Apart from the volume of digital payments, the importance of this topic is also reflected in the number of studies dealing with online payments (Heikkinen, Välimäki, 2021) and in the fact that even more specific indices have been developed recently, such as the payment-related literacy index by Trütsch and Nikolaus (2021) and the TIAA Institute-GFLEC Personal Finance Index (P-Fin Index) by Lusardi, Yakoboski and Oggero (Lusardi, Yakoboski, Oggero, 2017). An OECD survey of 117,000 teenage students in 20 countries found that students are very active users of online shopping and payments, with online purchases associated with better financial literacy in most countries. (OECD, 2020a) Yet only minority of students (10%) achieve the best results in a financial literacy (OECD, 2020b) that raises a question of the need of designing contemporary educations in the field of financial literacy related to the use of financial technologies.

On the other hand, the number of papers dealing with the interdependence of information, informatics, financial literacy, and their collective influence on use of online payments is scarce. With this study, the authors aimed to find out whether there is a relationship between self-reported informatics (computer) literacy and information literacy, and a relationship between informatics (computer) literacy and information literacy with financial literacy and digital wallet payments among university students.

The aim is also to gather information about the level and interconnection between analysed literacies in selected categories and to create efficient neural network model for uncovering students based on their perceived financial literacy in order to draw conclusions about the exigency to adapt university educational programmes to the needs of the increasingly important topic of personal financial management in the digital environment. Authors have already used neural networks in researches concerning different financial management topics and confirmed their usability, such as in research conducted by Sood and Bhushan (2017) who "concluded that neural networks have the capability of forecasting financial performance at the least cost" (p. 7), Zacharis (2016) who used multilayer perceptron neural network (MLP) to predict students' learning success on their web-based blended learning courses, Huang, and co-authors (2007) for analysing the financial literacy of youth in the Australian society, Jain (2021) who used MLP neural network to recognize the financial literacy of the women employed in Higher education sector, Leong and co-authors (2020) who used two-staged structural equation modeling neural network for prediction mobile wallets innovation resistance.

The work is structured as follows. The next subchapter is explaining the importance of research and understanding of interconnection between financial, information and informatics (computer) literacy as well as the role of education and different stakeholders in increasing financial literacy. Following chapters are giving presentation of methodology and results of the research. The last chapter is giving concluding remarks with recommendations for improvements in the field of a unified approach to addressing information, informatics and financial literacy, limitations of this research and recommendations for future research.

Interconnection of Financial, Information and Informatics literacy

Remund (2010) notes that understandings of financial literacy are inconsistent and proposes a definition of financial literacy that states that it is "a measure of the degree to which one understands key financial concepts and possesses the ability and confidence to manage personal finances through appropriate, short-term decision-making and sound, long-range financial planning, while mindful of life events and changing economic conditions" (p. 234). There is a positive connection between financial literacy and payment behaviour (Fernandes, Lynch, Netemeyer, 2014) and adoption of online payment services (Akbar et al., 2021) this is even more emphasized with the growth of digital payment methods share in total number of transactions (Heikkinen, Välimäki, 2021) as where the lack of

literacy is an obstacle in adopting new cashless instruments (Wisniewski et al., 2021). More specifically, Trütsch and Nikolaus (2021) found that payment literacy, not financial literacy, influences payment behaviour and adoption of payment instruments.

Education is considered important in the issue of adoption of different cashless and digital payment methods, with researchers suggesting different methods to increase financial literacy, such as: mandatory education programmes and information and education campaigns (Lusardi, 2008), development of online portals for users of financial services (Zaslavskaya, Usova, 2019), timely education programs (Fernandes et al., 2014), different workshops and seminars, the establishment of financial counselling centres on campus, and peer education (Cude et al., 2006). Krizek and Ing (2012) conducted a survey on specific areas of financial education to define a standard and guide for university lectures. They consider its application necessary because students generally do not meet the requirements of the financial literacy standard for university educated people. It is necessary to emphasise that wrong financial decisions of individuals cause costs for the whole society, i.e., costs of support that has to be covered by taxpayers. Therefore, the government should be actively involved in implementing financial literacy programmes (Lusardi, 2008) In addition to the government, the university, colleges, and parents also have a significant impact on students' financial behaviour (Cude et al., 2006). The role of banks is also highlighted as they can, by providing financial literacy advice, influence their customers' decision to become users of digital financial services (Akbar et al., 2021) and actively manage their finances. It is clear, then, that numerous organisations can influence students' adoption of online and other digital payments and improve their digital financial literacy.

At the same time, financial literacy is not only important for individuals, but also for businesses and the economy. Herdinata (2020) found that regulation and collaboration between companies have a significant impact on financial literacy, but on the other hand, employee financial literacy and regulation do not have a significant impact on financial technology adoption. Both financial literacy and digital literacy are associated with higher use of digital payments, especially in countries with higher digital literacy and higher Gross domestic product (GDP) per capita. It was also found that digital literacy does not help in managing personal finances, but only in acceptance of digital payment methods. (Lo Prete, 2021).

Through the literature terms of digital literacy, informatics (computer) literacy, digital capabilities and digital naiveness are interwoven. In the frame of this work, the concept of computer (informatics) literacy was used as described by Horton "as the knowledge and skills necessary to understand information and communication technologies (ICTs), including

the hardware, the software, systems, networks (both local area networks and the Internet), and all of the other components of computer and telecommunications systems" (Horton, 2004 according to Lau, 2006, p. 7).

According to Choi et al. (2021) education and income are positively affecting the level of digital literacy and skills (i. e., techno-capital) where financial independency (income) is not as relevant as education. Only surrounding students with digital devices and Internet connection will not ensure their digital literacy (OECD, 2021) but higher level of its presence in education system could be found beneficiary. Therefore, and taking into consideration other benefits it brings, there is a global trend to include digital literacy (Tekale, 2018), information literacy (Hammons, 2020) and financial literacy (Björklund, Sandahl, 2021) in the curriculum. In observing the problem of financial inclusion among the population, Shen, Hu and Hueng (2018) found that by enhancing the financial literacy and online activities (as a sub-element of computer literacy) the financial inclusion could be advanced through the use of digital financial services. Šorgo and coauthors (2017) found that students' digital nativeness (ICT connected activities as ICT ownership and experiences, as well as number of ICT oriented university courses and internet confidence) do not affect information literacy and that new university courses should be developed to promote information literacy (Šorgo et al., 2017).

Regarding the development of digital literacy, the availability of ICT technology is not sufficient for development of information literacy (OECD, 2021). Although there is a need to include information literacy, as well as digital literacy, education in curriculum programmes (Jackson, 2005), as students are facing difficulties in accessing, evaluating and using information, there is a lack of strategic approach by schools to change this situation (Julien and Barker, 2009, Jackson, 2005), and a general non-understanding of the importance of information literacy (Bušelić and Banek Zorica, 2017). The change in this field is necessary as only half of the students from OECD survey (2020b) claimed to have school training about recognising nonbiased information fact and only 47% of them can recognize fact from opinion. This makes it thus one of the most important elements of reading in a digital environment that needs to be developed. (OECD, 2020b). It is clear that in today's world the information literacy should be recognized as one of the basic skills (Gendina, 2013), along with informatics (computer) and financial literacy.

Methodology

This research was conducted in the academic year 2020/2021 at the Faculty of Education and the Faculty of Economics of the University of Osijek.

An online questionnaire was used to collect data and it consisted of general data (7 variables), data on students' self-reported levels of informatics, information, and financial literacy (3 variables), data about their Internet access (2 variables), 11 statements about their informatics and information literacy, where students had to express their agreement with each statement on a Likert scale from 1 to 5 (1 means they completely disagree and 5 means they completely agree) and the questions about online payment. Participants were offered 9 payment options and they had to indicate how they paid before and during the pandemic. Multiple years were offered as answers for each option (2019 and earlier, 2020 and 2021) and participants could also choose as an answer that they never used that option.

A convenience sampling was used. A total of 409 students participated in this study of which 40.34% ($n = 165$) were enrolled at Faculty of Education and 59.66% ($n = 244$) at the Faculty of Economics. The majority of the participants were female (86.31%), the highest number of the participants were younger than 18 years old (47.68%), more than one-third of them lived in a rented flat or room during their studies (37.41%), the highest number of them never worked during their studies (40.83%), and for slightly more than three fifths of them (60.99%) their parents or other close family members pay for their studies.

Data were analysed with Statistica 13 and SPSS software. Informed consent was obtained from all participants, and they could quit the study at any time without consequence. The study was anonymous, meaning that no unique identifier was collected and individual participants' responses could not be linked to their identity.

Results

Regarding the behaviour of participants in terms of their Internet access, the results revealed that the majority of participants most often use a smartphone to access the Internet (84.84%) and most often access it from home (96.33%). When it comes to their perceived level of informatics literacy, more than half of the participants (52.32%) think that their informatics (computer) literacy is very good, and the same number of students (52.32%) think the same about their information literacy. A little less than two fifths of participants (39.12%) assessed their financial literacy as good (see Figure 1).
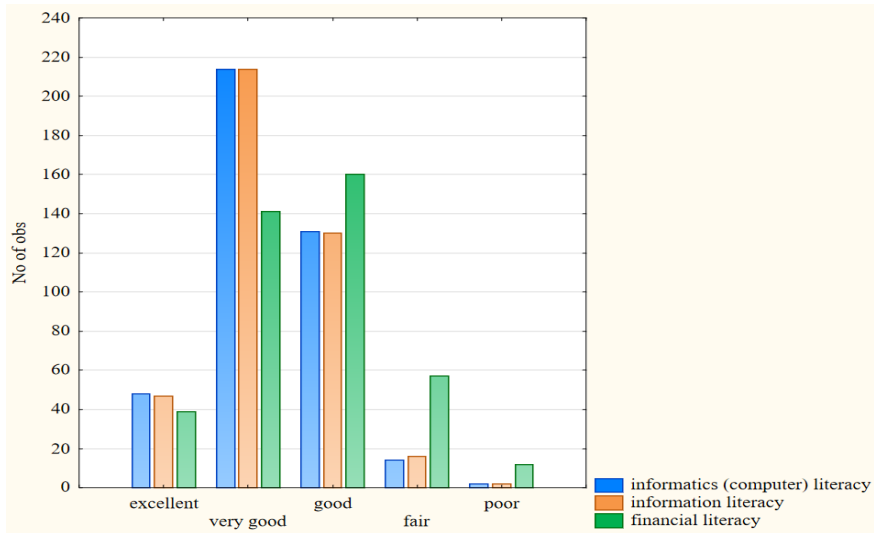
Figure 1. Self-assessment of informatics, information and financial literacy.

The Monte Carlo exact test showed that there is a statistically significant association at the 0.05 significance level between self-reported informatics literacy and information literacy ($p = .000$, two-sided), age ($p = .027$, two-sided), and making payments via digital wallets in 2021 ($p = .007$, two-sided and 2020 ($p = .024$, two-sided). The Monte Carlo exact test also showed that there is a statistically significant association at the same significance level between respondents' information literacy and their work experience ($p = .005$, two-sided) and who pays their living expenses ($p = .019$, two-sided). Also, the Monte Carlo test showed that these two literacies are statistically significantly related to financial literacy ($p = .000$, two-sided).

For the neural networks, the random sampling method was used and the sample was divided into a training sample (70% of the total sample), a test sample (20%), and a validation sample (10%). Statistica 13 software was used for NN modeling. The output variable was a binary variable in which all students who assessed their financial literacy as very good or better were categorized as students with high level of financial literacy and this category was labeled 1 (44.01% of participants). The others are classified in category labeled 0 (55.99% of participants)

Self-reported levels of informatics and information literacy and other variables that showed a statistically significant association at 5% level of significance with the selected output variable of the NN model were removed from the modeling process.

A multilayer perceptron was selected as the neural network type, the minimum number of hidden units was set to 7 and the maximum to 23, sum of squares and cross entropy were used as error functions, 4 functions

were used as activation functions (logistic, tangent hyperbolic, exponential, and sine), and 200 neural networks were trained, tested and validated. The best NN model was obtained with the hyperbolic tangent activation function. This model had an overall accuracy of 97.5% and was able to detect 100% of students who did not have high level of financial literacy and 94.12% of students with high level of financial literacy.

Conclusions

Information, informatics, and financial literacy are becoming increasingly important given the constant changes in all areas of life that are leading to greater digitization of activities, including online financial activities. Therefore, the aim of this research was to gather information about the level and interconnection between the analysed literacies in the student population in order to draw conclusions about the exigency to adapt university educational programmes to the needs of the increasingly important topic of personal financial management in the digital environment.

At 5% level of significance, the Monte Carlo exact test showed that there was a statistically significant relationship between self-reported informatics ($p = .000$) and information literacy ($p = .000$) with financial literacy and informatics literacy and making payments via digital wallets in 2021 ($p = .007$) and 2020 ($p = .024$). On the other hand, no statistically significant relationship was found between financial literacy and making payments via digital wallets, which is consistent with the findings of Herdinata (2020) and Trütsch and Nikolaus (2021).

The MLP model had a high ability to detect students with high financial literacy (94.12%) and detected all students who did not have high financial literacy. This suggests that the model is very effective in uncovering hidden information and may be suitable for educators as another approach to identifying students with low or high financial literacy.

The research findings indicate that financial literacy development alone is not sufficient, but that a multidisciplinary approach to the education system is needed to prepare the young population to understand and actively use financial technology innovations in the future. Therefore, the importance of education in improving information, informatics and financial literacy is highlighted and a comprehensive approach to its development in the younger population is needed to develop their abilities to understand and deal with advances in financial technologies and the digital world. Therefore, it is important to develop educational programmes aimed at introducing students to the digital financial world, developing critical thinking skills while constantly monitoring current trends and digital advances.

The limitations of the research lie in the fact that the results of this study are limited to the youth population only and the study was conducted in a limited geographical area. Therefore, suggestions for future research include increasing the sample size and reviewing and expanding the number of parameters related to digital financial services.

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DIGITALIZATION OF HIGHER EDUCATION AND RESPONSE TO COVID-19 PANDEMIC IN LATVIA

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ABSTRACT

The rapid spread of the Covid-19 coronavirus outbreak compelled many university administrators worldwide to take immediate measures to prevent spreading the disease on their campuses. One key measure was to switch from the face-to-face teaching mode to emergency remote teaching through online learning. Even though the swift and unplanned shift to move all courses online has caused several challenges to most Higher Education Institutions (HEIs) in Latvia, such a challenging situation has also created opportunities and opened new perspectives to the understanding of the digitalization of teaching and learning in Latvian HEIs. This paper, therefore, attempted to explore the digitalization process of Latvian HEIs, the response to the Covid-19 crisis by HEIs in Latvia, and the views of students of the Faculty of Education, Psychology and Art, the University of Latvia on the remote learning process they were exposed to during the academic year of 2020/2021 as well as how formal and informal research classes/modules contributed to the students' knowledge and attitudes toward the research process during the Covid-19 crisis. The conclusions of this paper were (1) digitalization and increasing study in the virtual environments are changing students' attitudes towards studies. Therefore, it is expected that HEIs in Latvia will reach their digitalization goals by 2027, (2) it seems that the students and the faculty adapted the remote learning process and strategies were found to support the achievement of study results, learning remotely during the Covid-19 crisis. Even though the students' responses to their self-assessment of their digital skills were high, they sought to acquire more digital skills during the remote learning mode. (3) Although the students take formal research classes/modules, they require more training and an in-depth understanding of research methodologies.

Keywords: Covid-19, digitalization, higher education, Latvia, research

Introduction

The growth of information technology has impacted the digitalization of Higher Education Institutions (HEIs) in terms of the teaching and learning processes in various aspects, such as the adaption of learning management systems (Telukdarie & Munsamy, 2019), the use of digital technologies and

digital learning tools and materials in the teaching and learning processes such as audiovisual lecture materials, digital tests, and integration of technologies in the study content requires digital corresponding to the respective field of study the availability of technologies and academic staff who are able and motivated to use these technologies. Moreover, academic staff's digital literacy skills and creativity positively influence the digital transformation of teaching and learning processes (Černochová & Selcuk, 2019).

However, a significant number of HEIs have been somewhat resistant to the widespread digitalization process up until the crisis caused by the COVID-19 for three main reasons: (1) a lack of financing for technologies and technological solutions, (2) a lack of continuous technological support and quality further education for educators, and (3) a negative attitude towards technologies caused by a lack of experience or negative experience using technologies. The COVID-19 crisis overshadowed these reasons with an unprecedented and unavoidable need for long-term mass remote learning. This need could not be fully met by any other means than using technologies, therefore considerably accelerating the digital transformation of education by investing a large number of resources in it – not only by buying the technologies and technological solutions needed to carry out remote learning but also by organizing learning events for educators, students and by searching for new approaches to enhance students' remote learning experience. The authors acknowledge that the digital transformation of education in these circumstances is somewhat unusual as it is not strategically initiated or led but instead is a desperate attempt to adjust to the state of current affairs (Daniela, Visvizi, 2021; Azorín, 2020; Iivari, Sharma, Ventä-Olkkonen, 2020; Karalis, 2020; Tria, 2020). Nevertheless, providing continued access to education relied extensively on digital technologies and initiated attempts to manage and deal with various structural and cultural changes and barriers obstructing the successful implementation of digital solutions in education (Reimer & Schleiche, 2020).

Due to the unprecedented COVID-19 crisis, like other HEIs in most countries, Latvian HEIs also faced challenges at various levels. One of the initial challenges was the rapid transition from face-to-face education to remote education. The (un)readiness to provide teaching and learning in such a remote format, in which face-to-face contact is gradually limited and denied, has been and continues to be different in Higher Education (HE). Adaptation is intertwined with technical support and new ways of thinking and acting. Lecturers had to acquire new digital and pedagogical skills in a massively decisive short time, combining them in pedagogically digital competence to choose technologies and technological solutions to achieve pedagogical goals masterfully (Daniela, 2021). Intensive communication in various channels and the development of study materials and tasks in a

considerable amount were necessary to teach study courses in synchronous and asynchronous modes. The students have been significantly challenged by the need to rearrange their time planning and self-organization habits. More emphasis is placed on self-directed learning supported by the lecturers. In general, HEIs have done a great job of strengthening the competence of the whole academic community to work – learn and teach digitally – which is also confirmed by the results of a study by PricewaterhouseCoopers (2020) study, "Evaluation of Digitalization of Higher Education Institutions in Latvia".

This current paper has three overarching aims: (1) to illustrate the digitalization of HEIs in Latvia, (2) to report the response to the COVID-19 pandemic crisis by HEIs in Latvia and (3) to present the key results of two surveys collected from the students of Faculty of Education, Psychology and Art, University of Latvia (UL). The following three research questions are formulated to address the main aims of the study:

RQ1: How do the students relate to the remote learning process they were exposed to during the academic year of 2020/2021?

RQ2: What is the level of digital skills bachelor students report having?

RQ3: How did exposure to formal and informal research classes/ modules contribute to their knowledge and attitudes toward the research process?

Methods

The collected data for this study comprises primary and secondary data sources to illustrate the digitalization of HE in Latvia and present how Latvian HEIs responded to the COVID-19 pandemic crisis with official documents and the findings of two studies (Study I and Study II) collected from the students of the Faculty of Education, Psychology and Art, UL.

Secondary Data

Secondary data gathered from normative documents of Latvia and the UL to present the digitalization of HEIs in Latvia and describe how HEIs in Latvia responded to the Covid-19 crisis.

Study I

For the Study I, the data gathered in Faculty of Education, Psychology and Art (UL) after the fall and spring semesters in study year 2020/21 where a questionnaire was distributed among students to find out their opinion about remote learning process. The questions were the same for the first and for the second round to understand how the situation is changed. All together there were 13 questions where for some questions students had to

give their opinion by using Likert scale. In this report we only analyzed the questions which show students opinion about remote learning process. UL has seven branches in different cities around Latvia where study programs of Faculty of Education, Psychology and Art is provided and therefore the questionnaire was distributed to students whose study place is in faculty and also in branches of the university.

The sample group in the study consisted of 726 students (673 female, 51 male) in the fall semester and 716 students (652 female, 59 male and 3 students did not want to indicate their gender) in the spring semester. Questionnaire was filled by 499 students who represented educational sciences, 131 represented psychology, 64 students of Art programs and 32 of sport programs in fall semester. In spring semester there were 537 students who represented educational sciences, 111 represented psychology, 33 were from arts programs and 33 from sports programs.

Study II

For the Study II, the data gathered from a sample of 125 students enrolled in the Faculty of Education, Psychology and Art, University of Latvia. An online survey was distributed to the students via Google forms in mid-September, and students were asked to fill it in until mid-October 2021. Data were analyzed from mid-October till early November 2021.

The sample group in the study consisted of 125 students studying at the Faculty of Education, Psychology and Art in the University of Latvia. All 125 students' study location was based in Riga. Of the students that responded to the questionnaire, 115 female (92%), 9 male (7.2%), and 1 prefers not to say (0.8%), whose mean age was 28.7 within the range of 19–55. Students' field of study were education ($n = 107$, 85.6%), psychology ($n = 5$, 4%), art ($n = 5$, 4%), and sports ($n = 8$, 6.4%).

Results

Digitalization of Higher Education in Latvia

The strategic goals of HEIs' digitization are defined in two reports (1) **Guidelines for the Development of Education 2021–2027** and (2) **Digital Transformation Guidelines**. The first report states that HEIs actively use digital solutions in studies, research, and internal processes efficiency. The second report, on the other hand, set out by 2027, states that HE needs to improve education and access to education, management, quality of science, development of digital teaching materials and accounting system, and improve the quality and availability of research data and researchers' digital literacy. The Guidelines for the Development of Education for 2021-2027 "Future skills for the society of the future" identifies digitalization

as a significant horizontal change, envisaging the development of digital skills as a cross-cutting competence, increasing the supply of e-learning in vocational, higher and adult education, the development of digital learning management platforms, digital learning resources and support materials and integration in the study process. In The Guidelines for the Development of Education, 2021-2027, digitization is planned as an essential pillar of both curriculum and learning approach: training tools and resources, learning platforms, governance and process management, etc. New knowledge and new technologies must also be transferred directly to the HEIs population, i. e. citizens in the labor market or entrepreneurs who already have one or more HE but no knowledge of recent trends. During the guidelines period, the Ministry of Education and Science plans to develop a new approach and methodology in certain study areas, promoting resource sharing through active use and integration of technologies (technology-enhanced learning) and digital solutions in the study process. It is planned to create virtual joint study programs in specific fields of study at the national and international level, modernization of studies by investing in higher education digitization, university materials in the technical base (infrastructure, equipment), study process and academic staff. The report of PricewaterhouseCoopers (2020),ordered by the Ministry of Education and Science of Latvia, there are identified several strengths of the digitalization of HE:

1) Understanding the importance of digitalization of HE among stake-holders
2) Well-developed infrastructure for management of HE
3) There are good examples of sharing solutions for digital services
4) Students would like to use more digital solutions
5) There are implementations of the use of artificial intelligence in data analyses

In this paper, there were also identified shortcomings for digitalization, and it is suggested that in HE, there should be:

1) Strengthening of digital competence for students and faculty,
2) Financial support for strengthening already existing digital solutions and for improving digital competence for all stakeholders,
3) Development of new digital solutions,
4) Support for a smart learning environment.

It was concluded that for HEIs to be able to provide digitally skilled, technology-motivated academic staff, they must ensure:

1) Digital learning resources appropriate for teaching the course, incl. computer equipment, information availability of resources and software. Both technical infrastructure and information. The availability of resources and software is regularly updated (not just based on project funding);

2) Access to the informational information space facilitates the study
   course facilities the study course preparation;
3) Digital skills and competence in both the use and effective use of the
   systems available to HEIs distance learning methods, use of virtual
   laboratories, etc.;
4) Continuous availability of technical support for digital technologies
   used in the study process (helpdesks, system administrators, etc.);
5) Motivation system to promote the use of digital technologies.

Response to COVID-19 in Higher Education in Latvia

At the national level, the Emergency Situation came into force imme-
diately with the Cabinet Order of March 12 2020 (Order of Cabinet of
Ministers No. 103, 2020). The on-site training process was stopped, pro-
viding remote learning in all educational institutions as far as possible.
Later, the emergency in Latvia was extended to June 11, 2020. The amend-
ment in Education law was accepted where the term "remote learning" is
included. It states that remote learning is a part of the full-time educational
process in which learners learn, using information and communication
technologies without being physically in the same room or place as the
teacher (Education Law, 1998, as amended in 2020, November 20). Higher
education institutions were free to issue their internal documents to organ-
ize internal processes to follow government regulations.

In the fall semester of 2020, the study process began as on-site studies.
However, as the number of Covid-19 cases increased, the decision was
taken to declare an Emergency Situation (from November 9 2020, to April 6
2021). It came into force immediately with the Cabinet Order No 655 of
November 6 2020 (Cabinet of Ministers, 2020). From October 11 2021
to January 11 2022, a new Emergency Situation was declared in Latvia
(Cabinet order No 720), and on October 20, there were amendments made
in this order with Order No 748. It was declared that there would be
a lockdown from October 21 until November 15, and all the educational
institutions turned to complete remote learning.

Key Results from the students of Faculty of Education, Psychology and Art

Students' Remote Learning Processes during COVID-19 – 2020/2021 Semester

The below results are drawn from **Study I** (see Methods). The fall semester
uses code "I", and the spring semester uses code "II" to distinguish between
two rounds of surveying. Students were asked if they believed that they had
achieved all the study results. From the data, it seems that students' study
results were improved from the fall to spring semester; for example, 23% of

students answered, "yes, all the results" in the fall semester, and 34,8% of students in the spring semester. It indicates that students and faculty adapted to the remote learning process, and strategies were found to support the achievement of study results. The situation is not perfect, as students believe that they have not reached all the study results. We need to provide a study process that supports the achievement of all the study results during the remote learning process. It is essential to develop pedagogical strategies and provide technological solutions for remote learning (see Figure 1).
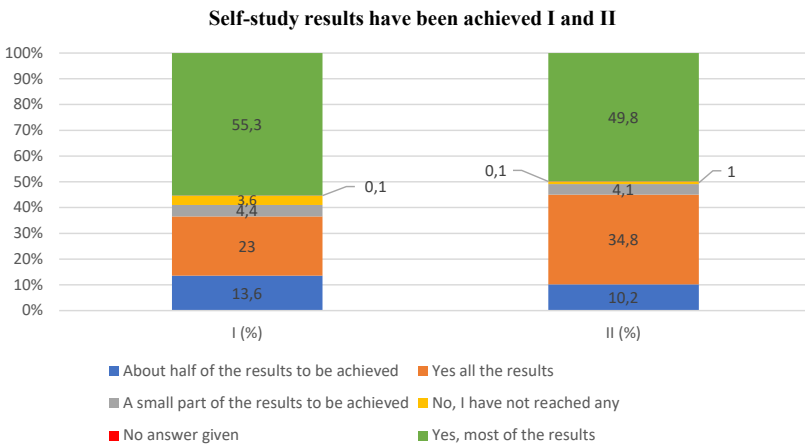
Figure 1. Comparison of self-study results have been achieved – Fall 2020 and Spring 2021 semesters

Students also were asked to express their opinion about the possibility of continuing remote learning after the Covid-19 pandemic. Results indicate that in the fall semester, 49.4% of students and in the spring semester, 65.7% fully agreed that lectures could be organized remotely (see Figure 2).
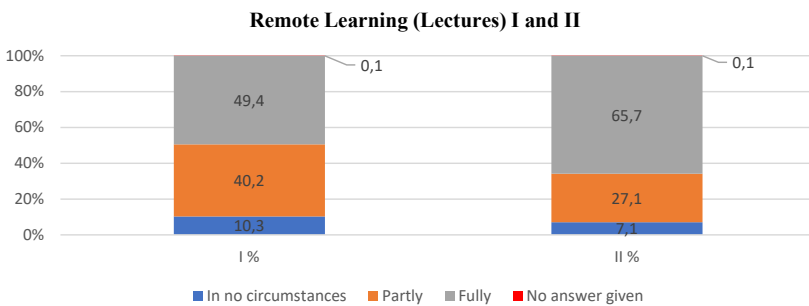
Figure 2. Comparison of remote learning (lectures) – Fall 2020 and Spring 2021 semesters

Also, about seminars, 30.6% of students in the fall semester and 42% of students in the spring semester fully agreed that seminars could be organized remotely. It can be concluded that students have acquired new learning strategies, and faculty have developed better teaching strategies for online learning. It also shows a new direction for organizing the study process in remote mode to allow participants in the study process for those who cannot participate in on-site learning because of their place of living, social situation, or special needs (see Figure 3).

Remote Learning (Seminars) I and II

	I %	II %
Fully	30,6	45
Partly	49,6	42
In no circumstances	19,8	13

■ In no circumstances ■ Partly ■ Fully
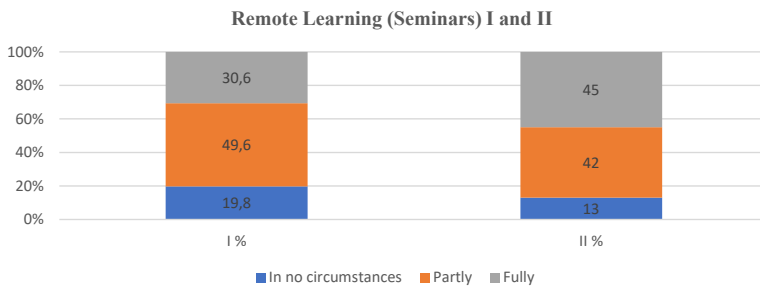
Figure 3. Comparison of remote learning (seminars) – Fall 2020 and Spring 2021 semesters

Another question was about what students were missing during the remote process, and they had to evaluate different aspects of learning. First, they were asked to evaluate if they missed meetings with peers, and results show that in the fall semester, 44.4% of students, and in the spring semester, 30.4% of students missed peers to a considerable extent. In the fall semester answer "do not miss" was given by 11.8% of students, and 19% of students gave such an answer in the spring semester. These results show that students do not miss meetings with other peers, and the number of such students is increasing, which can be quite an alarming signal that students are losing their social contact with their peers, and it can be hard to develop these contacts later (see Figure 4).

Meeting with peers I and II

	I %	II %
To a very large extent	44,4	30,4
Do not miss	11,8	19
There are times when you miss it	32,2	37,4
Hard to evaluate	11,8	13,2

■ Hard to evaluate ■ There are times when you miss it ■ Do not miss ■ To a very large extent
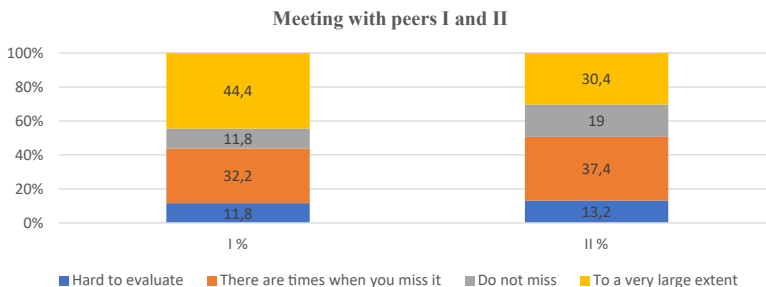
Figure 4. Comparison of meeting with peers – Fall 2020 and Spring 2021 semesters

Students were also asked if they missed meeting with faculty, and in the fall semester, 29.3% of students reported that they missed it, and in the spring semester, 22.4% missed it "to a very large extent". The answer "do not miss" was given by 11% of students in the fall semester and by 18.6%. These results let us think that remote learning strategies are improved, and faculty members have developed better strategies to work with students remotely (see Figure 5).

Meeting with faculty I and II
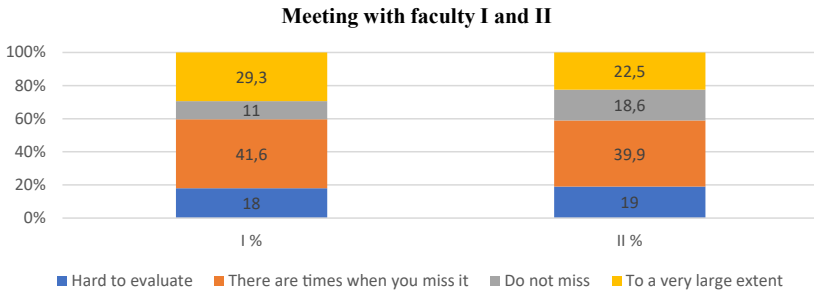
Figure 5. Comparison of meeting with faculty – Fall 2020 and Spring 2021 semesters

For the question, if students miss the possibility to participate in discussions in the fall semester, 37.3% of students missed it "to a very large extent". In the spring semester, 27.7% of students missed this option. It can be explained by changed MS teams possibilities where there was added option to organize discussion groups, and students and faculty learned how to use these options in the study process (see Figure 6).

Possibility to Participate in Discussion I and II
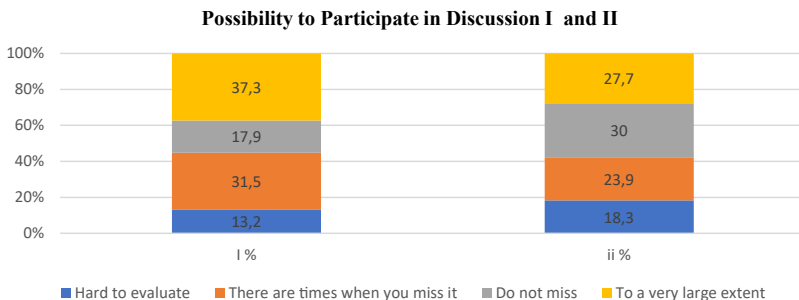
Figure 6. Comparison of possibility to participate in discussion – Fall 2020 and Spring 2021 semesters

Students' self-assessed digital skills

The below results are drawn from **Study II** (see Methods). Students' average responses to all statements in Table 1 is 'agree' (mean = 3.95, *S.D.* = .72).

Table 1. The Distribution of students' self-assessment of their digital skills (*N* = 125)

Item	Strongly disagree	Disagree	Partially agree	Agree	Strongly agree
I know how to manage online files (download, save, upload)	0.8%	3.2%	9.6%	34.4%	52%
I know how to use shortcut keys	3.2%	13.6%	26.4%	31.2%	25%
I know how to open a new tab in my browser	1.6%	2.4%	8%	32.5%	52.8%
I know how to complete online forms	1.6%	2.4%	13.6%	34.4%	48%
I know how to adjust privacy settings	1.6%	10.4%	29.6%	28%	30.4%
I know how to connect to a WIFI network	0	2.4%	5.6%	32%	60%
I know how to connect to an online platform (Zoom, MsTeams, Google classroom etc)	0	4%	11.2%	34.4%	50.4%
I can easily find the information I need on a website	0.8%	4.8%	21.6%	38.4%	34.4%
I can easily navigate through the tools included in different online platforms (Zoom, MsTeams, Google classroom etc)	0.8%	8%	20%	36.8%	34.4%
I know which information I should and shouldn't share online	0	6.4%	14.4%	36.8%	42.4%
I know when I should and shouldn't share information online	1.6%	2.4%	16.8%	35.2%	44%
I am careful about my comments and behaviours while I am online	1.6%	0.8%	13.6%	32%	52%
I know how to create a video	5.6%	10.4%	22.4%	25.6%	36%
I know how to create a infographic	14.4%	19.2%	32%	17.6%	16.8%
I know how to design a website	13.6%	18.4%	32%	20.8%	15.2%
I feel confident putting content I have created online	3.2%	12%	27.2%	34.4%	23.2%

52% of the students responded that they are careful about their comments and behaviours while they are online. Overall, the students' self-assessed digital skills are high (M = 3.95, $S.D.$ = .72). It can be concluded that most students are digitally literate and have higher digital competencies. Students in the 19-28 years old age group self-assessed the highest than the other three age groups (29–37, 38–46, and 47–55).

Students' involvement with research during COVID-19 crisis

The below results are drawn from Study II (see Methods). Students have reported that they took some formal research classes/modules such as research methodology (e. g., methods, research design, literature review etc.). However, as inferred from the students' responses, their engagement with informal research activities, including class/module/lesson, is not conclusive and generalizable. Most students consider their research competencies as neither competent nor weakly competent (mean = 2.93, $S.D.$ = .93). Students who had to conduct and write their diploma theses during the remote learning process seem to have enough self-confidence to undertake independent research study with their supervisors' facilitation and tend to employ qualitative and quantitative methods.

Conclusions

In this study, we attempted to explore what has been done for the digitalization of HEIs in Latvia and how HEIs in Latvia responded to the challenges of the COVID-19 crisis. Furthermore, in the light of the two research studies conducted at the Faculty of Education, Psychology and Art, UL, we aimed to investigate bachelor students' views on the remote learning process they were exposed to during the COVID-19 crisis in the academic year of 2020/2021 as well as examine how formal and informal research classes/modules contributed to the students' knowledge and attitudes toward the research process during the COVID-19 crisis.

The results concerning the digitalization of HEIs in Latvia revealed that HEIs in Latvia are working intensively to reach their digitalization goals which are actively using digital solutions in digital study platforms, technology integration in study content and research and streamlining internal processes, to improve the skills both academics staff and researchers in the use of digital technologies and to transfer new knowledge and new technologies to the population (lifelong learning).

The results associated with the response to the COVID-19 situation indicated some alarming signals about social contact as students miss social contact with their peers less than at the beginning of closures at the start of pandemics. We believe that this phenomenon can influence

future professionals who will have to work in education, psychology, and sport. We have to think about how to support social interaction. It is one of the main goals since the social constructivist approach highlights the importance of social interaction for the best learning to occur (Campbell, 2004). The challenges caused by this crisis have contributed to the availability of digital resources and the improvement of the digital competencies of professionals involved in all levels of education who now have to implement blended and incredibly remote learning in their practice. Education professionals have a growing interest in digital content and opportunities to communicate, collaborate, and create a favorable 'learning ecosystem' online. It is agreed that better technological solutions are needed to achieve the required educational goals. However, it is even more essential to provide professional development and the necessary resources for educators to use existing and new technological solutions appropriately. Therefore, we believe that digital transformation in education needs to be continued to ensure a modern and efficient learning process at all levels of education in the future. The experience gained during the COVID-19 pandemic naturally calls for a debate on the driving forces and obstacles to the development. This emergency can be seen as a revolutionary force in the higher education sector, which came only with an imperative must, without leaving any options or offering alternatives.

As to the results of two research studies conducted at the Faculty of Education, Psychology and Art, UL, it can be concluded that even though students encountered several issues with their study processes due to the cause of the pandemic situation, based on their responses, it seems that the students and the faculty adapted the remote learning process and strategies were found to support the achievement of study results, learning remotely during COVID-19. Even though the students' responses for their self-assessment of their digital skills were high, they sought to acquire more digital skills during the remote learning mode. Also, even though the students take formal research classes/modules, they require more training and an in-depth understanding of research methodologies. The students seemed to dedicate less time to research methodologies outside the formal research training during the COVID-19 situation.

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ON A PATHWAY TOWARDS THE DIGITALISATION OF HIGHER EDUCATION: THE CASE OF LATVIA

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ABSTRACT

The European project POWERHEAD (Empowering Higher Education in Adopting Digital Learning),[1] involving the Latvian Ministry of Education and Science (project partner) and the Flemish Department of Education and Training (project lead partner), aims to analyse the possibilities of digitising higher education. In order to identify the way forward, digitising higher education in Latvia and Belgium (Flemish Region) was mapped according to the methodology developed in the project, taking into account Laurillard's model of drivers and enablers.[2] The project aims to develop policy guidelines for partners at two levels: 1) guidelines for a national policy strategy on digital learning in higher education; and 2) guidelines including recommendations for higher education institutions to develop teaching and learning in this format and environment and to plan the next steps in the digitalisation of higher education. To this end, a multi-stage study was carried out to identify the situation in Latvia. The first phase consisted of a series of focus group discussions with higher education stakeholders (students, lecturers, business representatives and policy-makers). The second phase consisted of a survey of academic staff comprising 40 questions, two of which were designed to elicit demographic information, while the remaining questions were open-ended. The results (and related challenges) were analysed using content analysis principles. The key finding is that stakeholders are generally supportive of the digitalisation of higher education but point to a number of challenges that need to be addressed: support for lecturers in learning digital skills, collaboration between lecturers, and digital solution designers to ensure that digital solutions are of high quality and avoid the risks of knowledge fragmentation. It is also important to think about the principles of inclusive education so that the digital learning environment is accessible to everyone.

Keywords: Digitalisation; higher education; digital support; technology-enhanced learningcontent analyses

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1   Grant Agreement Number 893839 – POWERHEAD- EPLUS2020-EHEA09-2019; project number: 893839

2   "Higher education in the digital area. A thinking exercise in Flanders", KVAB Thinkers in residence program 2015, p.13, https://www.vlor.be/outcomes

Introduction

The digitalisation of higher education has several strands that are evolving and which present different challenges. The first strand is the learning process, where students, lecturers and available digital learning materials can be distinguished. The second is the management process of the university, where it is necessary to think about how to support students and lecturers, how to plan the study process, how to organise the circulation of data, and how to facilitate the internationalisation of the study process. The third is the research process, which is also affected by digitalisation. There may be new directions of research on the impact of digitalisation on technological innovation, and digitalisation also opens up new possibilities for both data mining and data collection. During the Covid-19 pandemic, when all educational institutions were closed and the study process moved to remote environments (Hodges et al., 2020), digital solutions helped to secure the learning process as they allowed synchronous connectivity. This created a situation where the use of digital technologies increased rapidly (Kedraka & Kaltsidis, 2020; Teräs et al., 2020; Jansone-Ratinika et al., 2021; Nuere et al., 2021; Rubene et al., 2021; Hou et al., 2022; Suoranta et al., 2022; Zaimakis & Papadaki, 2022) as did the level of digital skills. Given that this time was largely associated with distance learning, it is worth noting that the literature is sometimes terminologically confused between distance learning and technology-enhanced learning, which have much in common but also much that is different. Both use technology and various software, but the difference is that in a distance learning process, everything is connected on different platforms and can be synchronous or asynchronous, whereas in a technology-enhanced process, there can be both remote studying and face-to-face studying, using different technological solutions to address key issues in higher education.

However, despite the great opportunities of digitalisation and the lobby of technology companies (Mirrlees & Alvi, 2019), it is believed that too little attention is being paid to the human factor in the digitalisation of higher education and the needs of the pedagogical process are forgotten (Murphy, 2020; Suoranta et al., 2022). This often leads to a situation where digital solutions are available but are not designed to meet the needs of the learning process, which creates further challenges, such as educators having to spend a lot of their time adapting the digital solution to the learning process in order to develop digital learning materials that support the learning objectives. The challenge for pedagogy is to ensure that technologies support learning rather than using them just because they are available (Daniela, 2020; Daniela, 2021; Suoranta et al., 2022).

Inadequately designed digital learning tools and freely available information in digital environments can lead to knowledge fragmentation (Reznicek & Smutny, 2020). There can also be 'poisonous public pedagogy' which distorts views, opinions and judgements (Jandrić, 2018), which in turn can have unpredictable outcomes, as it can lead to new innovative ideas as well as to people not having a systematic understanding of certain facts and patterns, thus trusting fake news, data falsification, dupery and deceit, etc. (MacKenzie & Bhatt, 2020; MacKenzie et al., 2021). Higher education is responsible for ensuring that future professionals are equipped with the latest knowledge and are able to analyse information critically and pass on their knowledge or create new knowledge. The aim of this paper is therefore to analyse higher education faculty views on the digitalisation of higher education in order to build a knowledge base that will enable recommendations to be made for policy planners and other stakeholders.

Methodology

The research was carried out in Latvia as part of the POWERHEAD (Empowering Higher Education in Adopting Digital Learning) project as a follow-up to earlier focus group discussions with stakeholders (students, lecturers, business representatives and policy-makers) to identify the views of those involved in higher education on its digitalisation. A questionnaire with 38 open-ended questions based on the documentation prepared for the project and two closed-ended questions was developed for the study, and higher education lecturers were invited to give their opinion.

At the beginning of the survey, respondents were asked about their gender (the question anticipated that they might not want to indicate it) and their status in higher education, where they could indicate whether they were PhD students or elected or non-elected academic staff. The questionnaire did not ask for information about the respondents' place of work and did not require them to reveal their identity. This ensured that respondents could be open in the second part, and this approach makes the results reliable and allows them to be included in further analysis.

The two demographic questions were followed by open-ended questions, where respondents were free to express their opinions. These questions were divided into three blocks. The first block contained 17 questions summarising respondents' views on *current developments in the digitalisation of higher education*. The second block, *course and programme development*, had 13 questions. The third block, *resources*, had eight questions.

The questionnaire was designed using Google Sheets, and a link to it was sent out by e-mail. The questionnaire was anonymous, and respondents could stop participating at any time. In total, the views of 10 people were

obtained, and all ethical standards were respected. Based on the results of the survey, each of the project partners prepared their own national recommendations, and these will be compared with the results obtained by the project partner and will serve as material to help develop the project's joint recommendations to further the digitalisation of higher education at both a policy and an institutional level.

Results

The results were analysed using content analysis principles.[3] In the first block of questions, respondents were asked to answer questions about digital skills and how they are used in the learning process, and whether digitalisation can be seen as contributing to the principles of inclusive education.

All respondents agreed that digital skills are important in their daily work and are used every day, but one respondent could not single out digital skills over other skills because they are all equally important. When asked to describe areas where digital skills are integrated into course learning, the respondents cited e-learning courses where students have access to study materials (3), lecturers producing their own interactive learning materials (4), and the fact that their course teaches students to use digital tools that will be useful to them later in their professional careers (2). Nine respondents pointed out that the ability to study at any time, to access materials from anywhere and to be able to connect to studies remotely are essential parts of inclusive education. One respondent further stated that the ability to diversify materials to suit different people's needs helps to ensure inclusive education.

In response to the question of whether the digital environment can create barriers to inclusive education, two of the respondents felt that there are no barriers, but others indicated that the unavailability of different digital technologies and software can create barriers (3) and that when digital learning materials are developed, often no thought is given to how the information should be pedagogically arranged to guide the student's learning and how the materials should be arranged so as not to create additional barriers for the student in the learning process (2). One example was the screen layout, which can cause eye strain and trigger neurological problems. Another example of a barrier was that the digital environment does not allow full face-to-face communication, which can gradually lead to feelings of isolation (2).

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[3]   When describing the answers of the respondents, the number of people who expressed a given opinion is mentioned in parentheses.

Respondents were also asked to name 2–3 factors that could positively influence their willingness to use digital solutions. The following possibilities were mentioned: making work easier and more efficient (7) and recording lectures, motivating students to go deeper as lecturers feel that students watch the recordings (2). One person pointed out that the lecturer's proficiency in using digital tools also influenced their willingness to use them. Respondents were further asked to mention positive aspects of digital learning environments that can ensure accessibility, and here respondents mentioned the possibilities of studying remotely and accessing the study process and study materials from anywhere, regardless of whether there are any reasons that would prevent one from being face-to-face. One respondent, however, indicated that there are no positive aspects to digitising higher education.

As for the negative factors of the impact of digital solutions on higher education, the respondents mentioned the following: systems not working (3), the illogical architecture of the material (3), the reduction of human contact (2), and students' lax attitudes towards online lectures when they are listened to in parallel with other activities, thus dividing attention, which affects the quality of the perceived information (2). One respondent pointed to the uniform way of perceiving information through the screen as a problem. Another respondent pointed to data security risks, and another mentioned that the instructions for using digital solutions are too long and difficult to understand, which discourages people from consulting them.

Digital solutions help to ensure that everyone can learn at their own pace and sometimes in their own time. This learning mode requires students to have highly developed self-directed learning skills. The respondents were asked whether students could be considered to have well-developed self-directed learning skills and were asked to justify their opinion. Eight believed that students do not have well-developed self-directed learning skills and thought that this problem is rooted in the general education phase, where the idea is cultivated that teachers are responsible for students' learning achievements and must support students in their learning in any way they can. It is believed that this learning process creates a situation where young people do not acquire self-directed learning skills and are not prepared to make the effort to find information and complete tasks on time. These problems are particularly pronounced at the start of higher education, but they diminish from the third year onwards and are less pronounced at the Master's level. One respondent said that if students are motivated then everything will get done, but if they are not motivated then they do not have self-directed learning skills. Another respondent, adding to his opinion on students' weak self-directed learning skills, added that this requires a change in the organisation of the study process, with

more thinking directed towards the various mid-term examinations that are compulsory for students in order to support them and, to some extent, force them to learn. Some respondents pointed out that this lack of or poor development of self-directed learning skills also affects the work of lecturers, who constantly have to think of solutions to get students to learn. It was stressed that this is particularly relevant in the remote learning process, where it is not possible to monitor student activity, which can be used as an indicator for the lecturer to change the course of the lesson.

Respondents were also asked what they would recommend to promote the development of self-directed learning skills, and the following suggestions were made: the development of appropriate tasks that increase the amount of work, thus increasing the workload gradually (2); consistent, timely assessments (1); not accepting or downgrading work if submitted late (1); deadlines being respected by teachers (5); providing training for lecturers on how to foster the development of self-directed learning skills (3); more use of interactive activities that engage students (3); and raising awareness among university management of what self-directed learning means and how it can be implemented qualitatively in courses and study programmes (1). However, one respondent suggested that it is now just a buzzword. It was also stated that students need to see the benefits, as then they will have the strength to overcome obstacles and laziness (1), and that it is a big part of teaching in the first year when students slowly combine learning content by themselves with being provided with learning content by the lecturer (2).

Respondents were further asked to identify recommendations on how the flexible use of digital environments in higher education could be promoted. The recommendations were to be structured at three levels: the study process, the administration of the study process, and scientific research. The following recommendations were made to improve the study process: stick to the 50:50 split between what can be done remotely and what should be done face-to-face (1); develop different templates that lecturers can adapt for their own needs rather than having to redo them each time (1); use the e-shop principle in the learning process so that everything a lecturer needs can be found in one place in a digital environment (1); feedback on learning outcomes should be automated (3); and using artificial intelligence to test knowledge (3). It was also stressed that there is a need to train lecturers in the use of digital solutions (3). In the assessment of studies, the final examinations should be 'de-weighted' and the acquisition of different competencies during studies should be assessed.

The following recommendations were made regarding the administrative level: make the digital environment easier to understand and navigate so that its use does not require extra energy for either lecturers or students (1);

provide data analytics services (3); allocate time for lecturers to learn digital technologies and develop digital learning materials and allow time for the development of the materials themselves (4); support lecturers in the implementation of digital solutions (2); and pay for the extra work required for the development of digital solutions (3). It was further recommended that lecturers should work in a team with digital designers to ensure that the materials are not only correct in terms of content but are also arranged according to the principles of information architecture and digital design (2), and it was underlined that it is the responsibility of the administration to hire such specialists. Furthermore, digitalisation processes should be carried out simultaneously at all levels so that the study process, the research process and the management of higher education are digitised (2), a clear vision of what needs to be done and why it needs to be done should be developed so that these processes are understood by all (2), and it should be ensured that the environment is ergonomic, both in terms of the physical environment (where people spend time on the computer to work) and the digital environment (X).

At a research level, it was recommended that lecturers learn more about different data analytics software and improve skills in using different databases (2). Support is also needed in learning data processing software and data handling (1), and data availability and accessibility of analytical software need to be ensured (2).

Respondents were also asked about their views on how the digital environment can contribute to people's well-being and mental health, and they felt that, given that the use of various digital tools is a daily routine and that their development requires a considerable investment of time, time outside the digital environment is necessary (8) and the work-life balance should not be lost (9). One respondent believed that basic skills in using digital solutions, such as sharing and co-creating documents and using different learning platforms and communication platforms, are still very weak. He believes that only a small minority have developed these skills well and are therefore more digitally active, which masks the fact that basic digital skills are generally very low. Another respondent pointed to communication problems in digital environments, where being remote means that people gradually lose the ability to interact and converse in a real environment, and this can cause both stress and emotional health problems.

The respondents believe that student participation in the digitalisation of higher education should be promoted by encouraging them to participate in the development of different solutions and by providing them with digital communication opportunities and various co-creation opportunities (6). They also recommended greater use of co-creation platforms such as Miro

that allow all students to work on a problem at the same time, which is perhaps less possible in face-to-face studies where students go their separate ways after lectures.

Respondents identified the need for digital tools and for them to be easy to understand as motivators to use more digital solutions. They also pointed to the need for a specific consultant to use digital solutions in the learning process, as even though they have skills in using digital tools, they would still like to learn additional things and understand how to create more digital learning tools themselves. This also highlights the need for additional time (4). The need to find digital solutions to reduce the time spent on routine work (4), the importance of the design of digital solutions in choosing whether to use them for professional duties (3) and the desire for more funding for digital software, as often the software that can be used successfully is costly, were all stressed. Professional development was also recommended so that the same methods are used as in the study process but with more emphasis on hands-on activities.

A relatively small minority of respondents were positive about the internationalisation of the study process and believe that it is the future of higher education, something that they need to be aware of and start adapting to. However, one respondent, while agreeing that it is the future of higher education, was rather dismissive in his attitude and said that he will have to adapt but is not convinced this is necessary.

On the subject of the development of study programmes and courses, the first question was about quality assurance in the study process. The majority of respondents (7) said that quality is definitely something to think about, but it should definitely be taken more seriously. Insufficient resources, both financial and human, were cited as a reason for not monitoring quality at the required level. Process monitoring was also felt to be important to ensure quality (2), and there should also be staff training on quality assurance (1). In order to ensure a technology-enhanced study process, respondents recommend adopting good practices from abroad (2), strengthening cooperation between universities and employers (1), actively using different platforms (Moodle, a learning management system, was mentioned) (1), building cooperation between private and public universities to ensure diversity of programmes (1), investing in technology (2), paying for the extra work of lecturers that is now needed to work in a digital environment (1), and providing training for lecturers and students not only on technology but also on the psychological aspects of using technology (2).

When respondents were asked what characterises a good technology-enhanced learning process, the following answers were received: the inclusion of technology in all courses and the provision of a wide range of digital services (3), the use of automated solutions to reduce the routine

work that lecturers could devote to research activities (3), the involvement of experts in the field (1), and the possibility of providing distance learning and ensuring that academic integrity is respected (1). The skills that the respondents recommended lecturers acquire in order to ensure a technology-enhanced learning process included the use of Moodle, Zoom, and Microsoft Teams. Excel, R language and Word capabilities should also be learnt, as should tools to enhance learning (e. g. small group discussions), basic skills in data visualisation, presentation design, automated test creation, video recording, screen and sound recording/editing, etc. It would also be useful to learn basic programming, text and spreadsheet editing skills, the use of cloud services, how to make daily use of various shared documents, interfacing hardware with projector and speakers, etc. It is also important to pay attention to cybersecurity. One respondent mentioned that learning new technologies, such as blockchain, could also be useful.

Respondents were also asked how they felt about students' preparedness to learn in a digital environment. The participants indicated that students sometimes lack the basic skills to make full use of digital learning environments, and they believe that students need to learn the basics of programming, the basics of computing (how to connect computers and other hardware), and the use of different operating systems (at least Windows and macOS). Cybersecurity was considered important here too. It is also important for students to learn how to use online videoconferencing and the basic principles of electronic record-keeping, as the respondents reported having encountered numerous situations where students were unable to connect to a synchronous study process or manage their problems in a digital environment.

When defining recommendations for policy-makers, the following were received: learn good practices abroad that could be replicated in Latvia; organise studies or internships for lecturers abroad in universities or institutions with high levels of digital development; encourage inter-university communication between lecturers to get to know each other's situation and adopt best practices from each other; and develop a clear support plan for those who want to change and improve. It was also recommended to allocate sufficient funding for investment in digitalisation, academic and administrative staff, set appropriate ambitions in light of global education trends, facilitate the licensing of distance and remote learning software, and develop new solutions that can be easily used by Latvian higher education institutions.

Finally, the respondents were very laconic about the resources needed to digitise higher education, pointing to the need for investment in technology and software. It was highlighted that activities to help develop skills in using different digital tools need to be organised and lecturers'

time needs to be invested in the development of digital learning materials, indicating either that thought needs to be given to how this time can be paid for, recognising that this is work that the lecturer is investing time and resources in, or that outside professionals are brought in to develop the materials.

Conclusions

The aim of this article was to identify the opinions of lecturers from different institutions within the University of Latvia on the digitalisation of higher education, the opportunities created by digitalisation and the current challenges within the framework of the POWERHEAD project.

It can be concluded that many respondents now understand the term "digitalisation" more as a remote learning process than the full spectre of digital technologies use. This implies that there is a need to raise awareness of the possibilities of the digital environment, although the questions were formulated in such a way that the answers were expected to be about the possibilities of the digital environment, which includes more than just the distance education process.

The analysis of the data shows that developers of digital solutions need to think more about the intuitive design of these solutions to reduce barriers to their adoption, which is in line with the technology acceptance model (TAM), according to which the perceived ease of use of the digital solution is important (Venkatesh & Davis, 2000).

The majority of respondents believe that students have poorly developed self-directed learning skills, which affects their willingness to delve into and seek information beyond the material provided in e-learning. Lecturers recommend designing more activities that engage students in active participation and continuously assigning tasks and monitoring their completion within deadlines (López-Meneses et al., 2020; Sánchez-Caballé et al., 2020). Students' skills in using digital technologies and their views on the use of such technologies should also be taken into account (Zogheib & Daniela, 2021).

The respondents very often referred to the lack of time both to learn how to use new technologies and to produce interactive learning materials, which shows the need to be realistic about the resource-intensive process of developing digital learning materials and the need to ensure the quality of the materials produced. Resources need to be invested in this because remote learning and technology-enhanced learning are a reality, but if quality learning materials are not provided (because there is not enough time, knowledge or resources), then this risks fragmenting knowledge and, as a result, stalling national development. This means that at both

the policy planning level and the administrative level, it is necessary to think about how to support lecturers in order to reduce their overload and ensure a quality digital learning environment.

The respondents said they are happy to learn and use new tools as long as they are easy to use and make it easier to perform a function. This is consistent with the findings of the TAM, which states that digital solutions are used when there is a perceived need (Venkatesh & Davis, 2000), and with the idea that lecturers themselves should be the agents of change (Bacq et al., 2020).

The risk of social isolation that comes from fully digitising communication was also raised, and this is in line with other researchers' findings (Zaimakis & Papadaki, 2022). From an administrative point of view, it is important to remember that the study process is not only about acquiring knowledge and planning resources but also about students belonging to a certain educational institution and forming social networks with their fellow students. When thinking about a digitised study process, it is therefore necessary to think about how to preserve these values that can later act as a support network for young professionals and help them to stay in the profession.

Most of the participants in the study have given relatively little thought to aspects of inclusive education in digital environments, although Latvian academics believe this is essential if digital environments are to be accessible to everyone and support everyone's need to learn (Daniela & Lytras, 2018; Thompson & Copeland, 2020; Shopland et al., 2022). If digital environments do not take into account the different needs of individuals, then this can make the digital divide even wider. To mitigate this, it is necessary to pay very close attention to how the learning process is organised, how responsibilities are distributed among all stakeholders, and what the privileges or barriers in the digital environment are (Mehta & Aguilera, 2020).

It is also important to bear in mind that educational propaganda is very strong, and there are various claims about digital citizens and the death of the lecture(r) (Matthews, 2022), but learning processes must also be conducted in digital environments, and learning is not virtual but real (Gourlay, 2021). This means that pedagogical work in digital environments takes on different dimensions (Daniela, 2021). Digital learning tools, without the knowledge of how to use them, are transmitters of knowledge to an even greater extent than the educator, who is able to react to what is happening and change his/her teaching process accordingly. In remote learning, lectures themselves become digital artefacts that people watch and listen to, so there is no reason to claim that lectures are dead.

Higher education should be less driven by the business of educational technology and more about how to use educational technology to enhance

learning, bearing in mind that knowledge about both the use of technology and the specific content that students need to learn is important, but so is technological pedagogical knowledge, which includes understanding how to use technology to pedagogically enhance learning (Mishra & Koehler, 2006). The teaching process needs to learn how to make technology an additional tool to enhance learning. Technology creates the opportunity to transform learning from a one-dimensional process to a multi-dimensional process where learning not only takes place face-to-face using certain learning materials but also uses information found in the digital environment through the offer of virtual environments.

There are authors who point to the risk that higher education is becoming too supervised and controlled, more concerned with the balance between income and expenditure, which calls for making higher education a more accessible environment where everyone can choose what they want (Le Grange, 2020). There are also authors who warn that higher education should not normalise the processes that were put in place to respond to the pandemic when immediate solutions had to be found to ensure the continuity of educational processes. It is suggested that there is a need to think about what lessons can be learnt from this time and how to ensure quality higher education in the future (Murphy, 2020). This resonates to some extent with the views of those involved in this study, who expressed the view that it would be preferable to organise the study process by balancing face-to-face learning with remote learning.

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USAGE OF DIGITAL LEARNING TOOLS TO ENGAGE PRIMARY SCHOOL STUDENTS IN LEARNING

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ABSTRACT

The article focuses on the usage of digital learning tools by primary school teachers in order to enhance student engagement in learning. Based on the data obtained in the focus groups of educators teaching at primary school, ways to identify and enhance student engagement in learning through digital learning tools were identified. The analysis of the research data proved that the use of the said tools enhanced students' cognitive, emotional and behavioural engagement in learning. To this end, teachers reconstructed common educational practices, anticipated the hindrances to engagement caused by digital technologies and the ways to overcome them, exploited the opportunities provided by digital learning tools, and applied effective means to ensure classroom management and interaction between students. To conclude, the enhancement of learners' engagement in learning required effective teaching and learning strategies, innovative methods, and apt and value-based organisation of the educational process.

Keywords: *digital learning tools, engagement in learning, innovative teaching strategies, primary school students, types of engagement*

Introduction

Over the past two decades, researchers and professionals of technologies have advanced considerably in developing educational technologies that enhance student engagement in learning. Elements for engagement have come to the attention of developers for several reasons: engagement is a prerequisite for meaningful learning, and it includes emotional, cognitive, and social abilities which are learning goals in themselves (D'Mello, 2021; Griffiths et al., 2012). Meanwhile, low engagement results not only in lower academic achievement, but also in decreased interest in learning, behavioural problems, increased exhaustion, absenteeism, or even dropout.

Technologies affect student engagement, because digital technologies, content, and methods are intertwined and cannot be considered in isolation

(Cheung & Slavin, 2013). Koehler et al. (2014) present a tripartite knowledge system of technological pedagogical content that outlines the kind of knowledge needed for effective integration of technologies into educational practice. First, the knowledge of technological content covers a system of technologies and the knowledge of an academic subject. Second, the knowledge of pedagogical content is related to the knowledge of how certain topics or problems are organised, represented, and adapted to the interests and abilities of learners. Third, technological pedagogical knowledge implies an understanding of how technologies can limit or, conversely, deepen learning. The knowledge of the technological pedagogical content means the knowledge of the links between technologies, pedagogy, and content that enables teachers to develop appropriate teaching strategies. For the educational process to be effective, teachers need to have a systematic understanding of the content, education, and technology interactions.

Although game-based and attractive experience of working with digital technologies is engaging, it does not guarantee that students will learn anything meaningful (D'Mello, 2021). The usage of technologies should be evaluated from a pedagogical perspective, focusing not on how much and what, but on when and why (Kurvinen et al., 2020). Most digital learning technologies designed to evaluate and enhance sustainable engagement have been tested in research laboratories, however, there is lack of research in real educational situations on the subject of how and under what conditions these technologies are applied (D'Mello, 2021). The aim of the current research is to identify ways in which primary school teachers use digital learning tools to enhance student engagement in learning.

Digital tools as a factor of enhancing engagement in learning

The development and implementation of digital tools is an evolving and promising area of educational technologies. An intelligent use of technologies for teaching and learning purposes can help students address the problems of communication, belonging to a group, and self-confidence (OECD, 2016). Digital learning increases students' motivation to learn, encourages their development of personal learning strategies, enables them to take responsibility and control their own learning, and helps identify what students need to do to achieve learning goals (Dehler et al., 2011; Papamitsiou & Economides, 2015; Davis et al., 2018; Kurvinen et al., 2020). Van Leeuwen et al. (2021) argue that digital learning tools allow for the application of collaborative learning ideas in virtual learning environments and help students and their peers solve relevant problems.

The opportunities offered by digital learning tools provide an effective way to enhance student engagement and to measure it. D'Mello (2021) distinguishes two groups of digital technologies in this regard: proactive and

reactive. Proactive digital learning technologies with their game-based tasks have been designed to encourage engagement and learning. Such systems aim to increase interest, curiosity, and exploration (Gibson et al., 2015; Plass, Homer & Kinzer, 2015). Well-designed educational games turn learning into a game through presenting challenges, encouraging the search for creative solutions, and proposing surprises. Reactive digital learning technologies have been developed to automatically evaluate student engagement and respond when engagement declines, or to give motivational feedback when engagement is high (D'Mello & Graesser, 2015). Reactive methods are more complex than proactive ones, as the level of engagement is constantly monitored, its decline is observed, and ways are chosen to enhance it. More effective digital tools are those that provide feedback and the opportunities of choice as well as create the preconditions for learning in accordance with one's skills and interests (Baziukė et al., 2022).

The concept of student engagement in learning

Enhancing student engagement in learning is one of the most important goals of teaching and learning (Hadzigeorgiou, 2016; Hadzigeorgiou & Schulz, 2014). Engagement is defined as the time and energy that learners invest in educational target practice (Kuh et al., 2008) and a high level of interest expressed in behavioural, cognitive, and emotional categories (Fredricks et al., 2004). Engagement can also be described as a set of elements of concentration, inner interest, interactivity, perceived control and choice, motivation, and functionality (O'Brien & Toms, 2008). According to Harris (2008), engagement is characterised by a) participation in class activities and adherence to school rules, b) interest in school processes and satisfaction with participation in them; c) motivated and confident participation in school activities, d) meaningful learning to achieve one's goals; and (e) acceptance and evaluation of learning.

Researchers present different engagement schemes. Fredricks et al. (2004) identify behavioural, emotional, and cognitive aspects. Behavioural engagement occurs when a learner engages in academic, social, and extracurricular activities. Emotional engagement is observed when a student feels positive emotions about school, teachers, peers, and learning. Cognitive engagement is demonstrated by student's focus on learning on a strategic and self-regulatory basis. Gresalfi & Barab (2011) describe four types of engagement: procedural, conceptual, consequential, and critical. Procedural engagement takes place through participation in activities that require supervision and attention. Conceptual engagement involves the study of the structure of concepts or objects. Consistent engagement is described as a thorough search for a solution and its implementation. Critical engagement is manifested in the analysis and evaluation of objects, phenomena, procedures, and

the results of activities. The nature of the engagement may vary depending on the specifics of the activity or task, its place in the curriculum, and the variables of individual students or their groups. In order to enhance student engagement in learning, it is important to recognise the nature of engagement and to understand which aspects of engagement dominate or should be encouraged. The task of the teacher is to ensure the expression of all levels of engagement and to reduce the impact of factors that minimise it.

Scientific literature features a number of studies on how classroom management, symbolic awards, effective instructions, interactive teaching, and effective planning can influence engagement (Good & Brophy, 2003; Kauchak & Eggen, 2003; DuPaul & Stoner, 2003; City et al., 2009). The key issue of the current research is the kind of teaching practices used to enhance the engagement of primary school students through the usage of digital learning platforms and the ways of their usage.

Methodology

One of the challenges in researching student engagement in learning is a wide variety of approaches to engagement and research tools. Sinatra et al. (2015) present a three-component research model of engagement in learning: *a person-centred perspective,* concentrating on the analysis of the cognitive, emotional, and motivational states of the student and the indicators of student engagement in teaching; *a context-oriented perspective*, focusing not on individual students but on educational situations and the classroom or school contexts; and *an interaction perspective* dealing with the learner-context interactions in order to identify the relationship between classroom processes and learning outcomes as well as between teaching practices and learner engagement. In the current research, a context-oriented perspective has been chosen, with researchers focusing on teacher activities aimed to enhance student engagement through digital tools.

The research was carried out as part of the project "Artificial intelligence in schools: scenarios for the development of learning analytics in the modernization of general education in Lithuania." A total of 43 teachers participated in the project. This study focuses on the experiences of primary school teachers. Twelve teachers from eleven schools with experience in this field were invited to participate in the study. All the respondents were women with more than 10 years of teaching experience.

Data collection and analysis

The focus group has been chosen as the main data collection method, that is, a semi-guided small-group conversation to understand and explain the meanings, beliefs, and experiences that affect individuals' feelings,

attitudes, and behaviours (Morgan & Scannell, 1998; Nyumba et al., 2018). In order to ensure the involvement of all the participants in the discussion, two sessions of meetings with the respondent teachers were held, each with six primary school teachers. The discussion followed a five-step focus group course: the introductory part, the introductory question, transition questions, essential questions, summarisation, and conclusion (Morgan & Scannell, 1998). The teachers were asked: 1) to share their experiences of the usage of digital learning tools; 2) to describe the digital learning tools used; 2) to provide examples of student engagement in learning and teacher actions to enhance their engagement. The teachers were encouraged to talk to each other and comment on each other's experiences. The researchers played the role of moderator.

The focus group discussions took place on the Zoom platform, each lasting for one and a half hours. The meeting was recorded using the Zoom platform tools. After each meeting, the recording was listened to, and the most important research topic-related moments were transcribed. The total volume of the transcripts is 915 words.

To process the research data, qualitative content analysis was used which helped to cover the obtained information, to divide the data into groups and categories, and to draw conclusions on that basis. The sequence of a three-step data analysis was used (Nyumba et al., 2018). In the first stage, the transcripts were read and annotated, and in the second stage, the initial encoding of the data was carried out, involving the generation of categories without limitation of their number. In the final (focused encoding) stage, the encoding categories identified in the second stage were combined, paying attention to recurring ideas and topics emerging in different groups.

Research results

The analysis of the focus group data proved that the teachers perceived all the three types of student engagement in learning. *Behavioural engagement* was revealed through the students' use of digital learning tools over a long period of time. The teachers pointed out that, after the bell had rung, almost all the students continued to work, reluctantly withdrawing from the computers. In quite a few cases, they had discussions among themselves or with the teacher on how and when they will continue completing tasks at home. *Emotional engagement* was observed when the students were motivated and emotionally responsive to the usage of digital learning tools. During the lesson, interjections *yes, hurray, that's a good one* accompanying the successful completion of the task were often heard in the class. *Cognitive engagement* was recorded by the teachers through

observing how the students performed tasks in the classroom. According to the research participants, technologies in the classroom allowed the students to get a deeper understanding of the topics they were interested in and to collaborate. The teachers also acknowledged that the predominance of a certain type of engagement depended on the topic of the lesson, the students' experience in performing such tasks, the specifics of the digital learning tool, and the form in which the task was performed.

According to the research participants, it would be wrong to believe that the usage of digital learning tools left teachers with nothing to do. In the process of learning, a variety of challenges are faced that have to be anticipated and addressed before they become a hindrance to engaging in learning. It is necessary to assess the physical environment of the classroom in advance. Thus, for example, when the classroom is small and the layout of computers is inconvenient and prevents students from concentrating on their tasks, the level of engagement in learning will be low. The teacher's ability to ensure the smooth use of technology is also relevant: each student ought to have a computer or a tablet, a stable Internet connection, and a smooth connection to the tool. The teacher must also be able to plan the lesson time in accordance with the set goals. The research participants argued that students were more involved in learning through the usage of digital technologies. However, there was also more frustration when the lesson failed to achieve the desired goals and there was not enough time to complete the tasks.

Ensuring interaction between students and creating a learning-friendly psychological atmosphere in the classroom is also important. According to the teachers who participated in the research, the relationships between students and the general atmosphere in the classroom influenced both the engagement of individual students and the willingness of the whole class to learn. Students' relationships with their peers in the classroom contributed not only to a positive learning environment in the classroom, but also to student engagement in learning. If teachers do not anticipate how and in what situations their students can share ideas or comment on each other's work, then students' comments or remarks cause some chaos. It is important for the teacher to identify trouble spots as well as to anticipate potential problems and the ways to solve them.

One of the strategies used by teachers to help solve communication problems is to organise work in pairs or groups. The teachers provided examples of how communication and support could effectively enhance engagement in learning through matching learners together in pairs or small groups. The most common way is to pair off more and less experienced pupils. When a student feels competent in relation to a peer in a particular subject area, he or she experiences a sense of self-pride. The teachers noticed that students

themselves were more likely to ask their peers rather than the teacher for help. Therefore, the teachers applied this strategy when assigning tasks that required cooperation.

Student engagement decreases when the learning material is irrelevant or unrelated to them. When tasks are too difficult or too easy, or take a very long time to complete, planning skills are required. In such cases, a student can participate in the lesson without delving into the subject. Not all digital learning tools allow the teacher to develop or supplement teaching materials. The creative nature of the tasks enables students both to choose the level of difficulty of the task completion and also to generate new ideas, to link the existing and newly acquired knowledge, to look at a topic or problem from different perspectives, and to use different ways of presenting information (speaking, writing a text, creating a soundtrack, selecting illustrations). The multimodal and creative nature of learning increases students' activity and their interest in learning.

Conclusions and discussion

The role of teacher in enhancing student engagement in learning through digital learning tools is not fundamentally different from that in traditional teaching. Technologies do not free teachers up; they only change the nature of their work. The focus group discussions revealed that the teacher's communication style, academic or emotional support, expectations regarding students' learning success, enthusiasm for educational innovations, and openness to innovation were important factors for engagement in learning. No less important is the role of the teacher in planning and organising teaching and learning. In supporting engagement, teachers rethink their mainstream educational practices, the hindrances to engagement caused by digital technologies and the ways to overcome them, they exploit the potential of digital learning tools and apply effective ways to manage the classroom and interact with students.

The research participants confirmed that, while working in the classroom, they noticed students' apparent cognitive, emotional, and behavioural engagement in learning. At the same time, however, they found that such engagement was not automatic, driven by the educational or technological solutions of the used digital learning tools. The findings of other researchers suggested that the use of digital learning tools could be either effective means or it could have little effect on student engagement in learning, especially when the focus was on the most obvious indicators of engagement (Fredricks & McColskey, 2012).

Enhancing student engagement in learning requires new teaching and learning strategies, innovative methods, and intelligent and value-based

organisation of the educational process, so that each student could develop self-confidence and succeed in and out of school. Both teachers and students exposed to digital learning tools *a priori* expect the usage of technology to guarantee a high level of engagement (Davis et al., 2018). Our research has proved that technologies can enhance student engagement, however, the engagement can be merely superficial, based on instant interest. In addition, despite the many advantages, the potential side effects of using digital learning tools, such as the ineffectiveness of passive learning strategies and the limitations of communication and collaboration with others, need to be evaluated (Stahl et al., 2006).

To encourage deep and lasting engagement, education theory and practice need to be rethought. This requires research to analyse the factors that enhance the usage of digital learning tools and the engagement of students from a wide range of different perspectives: the application of specific digital technologies, the teaching and learning of students of different age, the engagement of learners with different skills and interests, and the challenges faced and their overcoming. Synergies between interdisciplinary research are needed. The development and use of digital educational technologies, the generation and implementation of innovative teaching strategies, and research into student engagement in learning should be carried out interactively so that we would be able to describe educational processes as an effective and innovative area of human life and creativity responsive to the challenges of the 21st century.

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THE BENEFITS OF LEARNING ANALYTICS FOR EDUCATION: A STUDY OF THE EXPERIENCES OF TEACHERS IN NORWAY AND LITHUANIA

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ABSTRACT

The benefits of learning analytics for education are discussed in the article. First, at the theoretical part authors reveal the concept of learning analytics also discuss how learning analytics technologies help to improve the teaching and learning process. Second, the article emphasizes the increasing use of technology in education what goes hand in hand with the areas of learning analytics and artificial intelligence in education, also the particular focus on how data can be used to improve the teaching-learning process. When teaching/learning takes place in a digitally based learning environment, some learner interaction with the digital learning tool occurs, which leads to a specific learner's learning experience, which results in high digital data flows. These data describe the individual learning activities of learners in learning systems or the interactions of learners in groups. The analysis of such data is an area of learning analytics. The focus of the article oriented to main beneficiaries – teachers. Moreover, in the article authors discuss the benefits of learning analytics on teachers' pedagogical work.

The empirical part of the article presents the results of a qualitative study: semi-structured interviews with 7 teachers from Norwegian and 10 teachers from Lithuanian, who are applying learning analytics (digital platforms that integrate learning analytics tools) tools in teaching/ learning process. The semi-structured interview method allowed to gather the research participants' insights into the use of learning analytics in schools from the perspective of teachers. Content analysis of the informants' answers revealed teachers' opinion on the benefits of learning analytics for teaching and learning, teachers' competencies to work with learning analytics tools, empowering teachers to use learning analytics tools and to make data-based pedagogical decisions. The comparative analysis allowed disclosing some differences in a way how teachers in Norway and Lithuania approach digital technologies and implement them in teaching-learning process.

Keywords: learning _analytics, general education schools, data-based pedagogical decisions, Norway, Lithuania_

Introduction

Digital technologies are changing everything: people's communication, social life, opportunities for cooperation, and are forming new life habits. These changes also affect education. Even in 2014 research predicted that in a decade about two-thirds of general education students will be learning, fully or partly, in a digital-based learning environment (Wang, Decker, 2014). Researchers have hypothesized that portable computing devices and evolving educational technologies (for example: smart classrooms, smart learning environments, etc.) will foster even more rapid digitization of education in the nearest future (Har Carmel, 2016). Therefore, the content, forms, methods, roles of educators and learners and interactions in the teaching/learning process will change over time (Hollman et al., 2019).

In recent years, the issue of digitization of education has become even more relevant. On the one hand, the COVID-19 pandemic situation has greatly accelerated the digitization of education. An unprecedented hasty experiment with school systems took place during the pandemic, with hundreds of millions of learners moving to a digital learning environment (Kalim, 2021). As a result, digital technologies have become part of the teaching/learning process and, according to researchers, their use has been proven to be crucial in ensuring better education for learners during a pandemic (Kurvinen et al., 2020). On the other hand, target groups in education – students, parents, teachers and school leaders – are increasingly using technology for a variety of educational purposes, for instance, informing students about their achievements in an e-diary environment (Howley et al., 2021). Thus, these processes encourages even more rapid digitization of education.

The increasing use of technology in education goes hand in hand with the areas of learning analytics and artificial intelligence in education, with a particular focus on how data can be used to improve the teaching/learning process. Artificial intelligence and learning analytics are becoming the most popular ways to analyze collected data in digital learning environments to support teachers and learners in their learning (Krikun, Kurilovas, 2016). It is important to note, that artificial intelligence and learning analytics aim to improve learning processes by systematically processing teaching-related data and providing guidance to teachers and learners. Researchers in artificial intelligence and learning analytics analyze cognition, motivation, influence, language, social discourse, and other issues based on data derived from digital learning environments. Therefore, the possibilities of integrating artificial intelligence and learning analytics are of particular interest in learning environments such as: adaptive learning systems, intelligent learning systems and open educational resources (Mandinach,

Gummer, 2016). These technologies aim to inform teachers and learners, as well as other stakeholders, as effectively as possible, and to encourage their interaction and collaboration, and contribute to improving of the quality of teaching/learning (Holstein et al., 2019).

The scientific literature (Hollman et al., 2019) increasingly raises questions about how digital technologies change education, how they affect participants in education, how to use the advantages of technology to improve the quality of education, how to overcome technology-related challenges in education, and so on. One of the main factors driving their application in general education is the findings of research showing that teachers and students show a high level of support for intelligent learning systems (the study involved the following learning experience platforms: ALEKS, Cognitive Tutor, Khan Academy, edX and Coursera) (McHugh, 2015). In addition, these systems contribute to the development of the concept of evidence-based education (Khine, 2018) by providing data-based feedback and the opportunity to analyze and improve the teaching/learning process.

In recent years, artificial intelligence and learning analytics have been integrated by an increasing number of digital tools, both commercial, such as MS Teams, Google Classroom, iSpring Learning, and open source, such as Moodle, and other platforms, which have been designed for various educational sectors. Today learning experience platforms based on artificial intelligence and integrative learning analytics tools are seen as one of the most effective tools to make it easier for learners to learn and easier for teachers to teach (Rienties et al., 2018).

The article is focused on the micro level (i.e. the teaching/learning process and the digital learning tools used in it, these tools provide the learning content and are equipped with analytical tools and are able to provide guidance to the participants in the educational process by means of artificial intelligence). Within the framework of the research, such tools have been referred to as Learning Experience Platforms (Vincent-Lancrin, 2021). In global practice, learning experience platforms such as *Eduten Playground, Matific, FastForWord, EduAi, LearnLab, etc.* allow learners to personalize what they are learning, how they are learning and when/where they choose to learn. Through such platforms, participants in the learning process can identify specific skills or knowledge gaps by accessing an analysis of their teaching- learning activities and suggestions for action to improve their achievement.

Taking everything into consideration, current article aims to discuss the possibilities of integrating learning analytics into general education from the perspective of teachers theoretically emphasizing the benefits of learning analytics tools and the data analysis they provide for teachers' pedagogical

work; empirically revealing the experience of Lithuanian general education teachers using learning analytics, their insights on benefits of learning analytics for education and the teaching/ learning process, and about the changes in pedagogical practice caused by learning analytics. Two countries were selected for the study – Norway and Lithuania. Current countries were chosen, since in Lithuania the project "Artificial Intelligence in Schools: Scenarios for the Development of Learning Analytics in Modernizing General Education in Lithuania" (DIMA_LT) was implemented, and Norway was taken as a model country in this project.

Methodology

During the implementation of the mentioned above project an exploratory empirical study was performed. The problematic question of the study was: what benefits of learning analytics for education in Norwegian and Lithuanian school teachers see while using learning analytics tools? This article aims to reveal the experiences of teachers in Norway and Lithuania using learning analytics, their insights into changes in pedagogical practice.

The study sample was formed using convenient target selection (Rupšienė, 2007). Teachers from Norwegian and Lithuanian schools took part in the project. A total of 17 semi-structured interviews were conducted. Participants were the teachers who are using in learning analytics programs (*Eduten Playground, LearnLab, Matific* and *EduAi*) at their classes.

Semi-structured interviews are flexible and versatile, making them a popular choice for collecting qualitative data (Kallio et al. 2016). Semi-structured interviews provide a platform for a collaborative exchange in which information can be elicited quickly and effectively. It serves equally well either as a means of gathering data for research (Magaldi, Berler, 2020).

The interviews were conducted in April-May, 2021. In preparation for the interview, interview questions were prepared, information was provided to the informants about the peculiarities of conducting remote interviews, the objectives of the research, publicity of the obtained research results, guarantees of their anonymity, etc. The Zoom platform was chosen as the most acceptable remote communication platform for all informants. The advantages of this platform are recognized in qualitative research as a high-quality data collection tool: video and audio recording capability, cost-effective, etc. (Archibald et al., 2019). The possible limitations of this platform, the occasional problems of communication interference and the limited ability to capture non-verbal information, have been addressed with informants in the context of video interviews and solutions to the communication problem (Weller, 2017). Up to an hour and a half for each interview. All appointments are recorded. Each study participant consented

to participate in the study and allowed the researchers to make interview recordings that were used only for data analysis purposes and stored on the investigators' media.

Qualitative content analysis was chosen as a method to analyze written, oral, and visual communication messages for the analysis of interview data and presentation of research results (Cole, 1988). Classical content analysis involves the technique of grouping text into groups according to codes generated by variables (presence, intensity, or quantity of significant characteristics) (Creswell, 2009). Data analysis was performed in several stages: 1. reading the text of the interview; 2. separation of categories based on key words; 3. the division of the content of the categories into subcategories; 4. description of categories and subcategories and substantiation with evidence extracted from the text (Žydžiūnaitė, Merkys, Jonušaitė, 2005). To ensure the internal validity of the study, the informants were provided with a study report with feedback. Informants rated the study report positively. The external validity of the study was ensured by providing a detailed description (Rupšienė, 2007).

Results

The results below will be presented separately by country. When analyzing Norwegian teachers the study participants' answers to the open question "What do you think are the benefits of learning analytics for education and training?" the following subcategories were distinguished from their answers (see Table 1).

Norwegian teachers who participated in the study, when speaking about the benefits of learning analytics for education, emphasized that this is primarily an opportunity to obtain more data related to teaching and learning processes. According to informants, it is common practice in schools to collect a variety of data using traditional methods, but this data is fragmented, there is a lack of data collection and consistent and continuous analysis practices in schools, and it is not clear who is the "host" of data, how the data could serve to improve education, and so on. Learning analytics, in the opinion of informants, provides an opportunity to collect more useful data on students' learning and use them more effectively to improve education, curriculum, curricula, and so on. Regarding their experience, participants emphasized that "teachers need to develop curricula, review curricula, and the data collected by learning analytics for these purposes are very helpful". In respondents' words, learning analytics and the data collected through it enable data-based pedagogical decisions. Based on the experience of the study participants, it can be stated that such visual, automatically systematized presentation of data facilitates the work of teachers.

Table 1. Norwegian teachers' views on learning analytics, its benefits and relevance to education and the teaching/learning process

Category	Subcategories
The benefits and importance of learning analytics	• "provides" teachers with relevant data on teaching/learning • the opportunity to monitor student achievement • promotes data-based pedagogical decisions • enables to see shortcomings of teaching process • enables to provide timely feedback
Involvement and empowerment of teachers	• teachers-leaders • the "chain" principle • learning communities • teachers' enthusiasm and leadership • leadership • bottom-up principle
Technology management	• teachers who use technology effectively • teachers who foster technological solutions
Providing schools with technological resources	• the importance of infrastructure • insufficient technological base of schools
Teachers' competence to work with data and make data-based pedagogical decisions	• access to data • optimal data delivery solutions • visualization of data • data-based pedagogical decisions
Opportunity for teachers to reflect on their pedagogical activities	• improvement of teaching/learning process • possibility to design personalized learning pathway • useful data for improvement of pedagogical practice
Decision making and personalization of learning	• formative assessment • the role of the teacher in the assessment process

Visual presentation of the data, in the words of the informants, is useful for both the teacher and the students. The informants also mentioned that the obtained data can be easily exported, thus saving time for reports and other activities. In addition, informants stressed that learning analytics tools need to be very thoughtful, have a scientific basis. In their words, data should be collected in a targeted and targeted manner. Useful and relevant data for pedagogical practice should also be collected so that the teacher "only has to interpret them correctly and make a decision".

All in all, it can be concluded that the learning analytics initiatives were supported and encouraged in the school communities by teacher leaders, for instance, those teachers who were interested and motivated to implement certain innovations in their pedagogical work. According to the informants from Norway, such teachers, through their example and good practice, encouraged colleagues to take an interest in innovation and apply it in their pedagogical work.

Table 2. Lithuanian teachers' views on learning analytics, its benefits and relevance to education and the teaching/learning process

Category	Subcategories
Access to data	• access to useful and important data in one place • allows to collect data on students' and classroom learning • allows to visualize data, make decisions using artificial intelligence
Differentiation and inclusion	• artificial intelligence provides possibility to differentiate education according to different needs of children • makes it easier to differentiate and individualize tasks according to the student's achievements • helps improving improve the processes of assessment
Teachers are researchers	• teachers analyze the teaching/learning process with the help of data • predict which learners are at risk of failing
Analytical assistance	• working with parents and reports • reports to the school administration
The need for training	• need for relevant and continuous trainings • help of a supervisor, mentor, assistant
Teachers-leaders	• more individual teacher initiatives
Teacher skepticism	• lack of motivation • burnt out due to pandemic restrictions and limitations • low energy
School resources and infrastructure	• insufficient technological resources • lack of computers / computerized
Technology management	• fear of technology • opponents of blended learning

Talking about the Lithuanian teachers replays, the analysis of the answers the same question, some different categories were extracted and the subcategories detailing them (see Table 2).

According to the Lithuanian teachers, who were research participants, the most important advantage of learning analytics in relation to the teaching/learning process is the possibility to individualize it and differentiate it according to the needs of the students. Learning analytics tools and reports make it possible to monitor the progress of each student and their groups (classes), individualizing the learning according to the identified progress and differentiating the learning according to the needs of the children. In addition, according to the informants, learning analytics tools based on artificial intelligence help teachers to see the difficulties of teaching and provide students with the necessary support in the learning process. In addition to the above benefits, the informants emphasized the benefits

of learning analytics for students and their parents. Learning analytics, according to informants, enables greater involvement of parents in their children's learning process, with the help of learning analytics reports that the teacher has the opportunity to share with parents. According to teachers, participated in the research, learning analytics is also important for the learners themselves – it allows students to monitor their progress and thus contributes to increasing learning motivation. Study participants mentioned that teachers must first and foremost be 'technology-friendly' – they must be willing to apply technology in the teaching/learning process and manage it effectively. Informants acknowledged that there are doubts among teachers about the benefits of integrating technology into education. Participants in the study also stressed that to successfully use learning analytics, they need to have the ability to interpret data summaries and statistics. It is important to be able to understand the "outcome" of learning analytics – what are the cross-sections of the data analysis that can help in answering various questions related to the teaching/learning process. In addition, according to the informants, it is important to be able to interpret the data and relate it to the possibilities of improving the teaching/learning process. Such skills of teachers would encourage evidence-based pedagogical decisions.

Discussion

Researchers highlight the benefits of learning analytics for the teachers' pedagogical work (Mouri et al., 2018; Pardo et al., 2016). Our study participants also emphasized that it is an opportunity to apply various pedagogical scenarios and methods, to see the shortcomings of the teaching process, and to help the teacher assess students' achievements and personal progress, quickly identify, and respond to teaching gaps and provide timely feedback. According to the current study artificial intelligence that is integrated into learning platforms makes it easier to differentiate and individualize tasks according to the student's achievements, to improve the processes of assessment of learners' knowledge, improving the organization of curricula and their content, to notice possible erroneous thoughts (e. g. guess the correct answers); or reflect on different ways and to encourage students to learn ahead; allows to collect data on students' and classroom learning, visualize them, make decisions using artificial intelligence, thus significantly saving time and planning learning goals. A very important aspect of using mentioned programs is an opportunity to use personalized learning pathway and that assessment materials are selected for the learner through artificial intelligence and learning analytics; interventions where the teacher is provided with information and the teacher can provide

targeted assistance to the learner; improving the schedules of learning activities according to learners' learning styles.

Other research stresses that with the help of programs with artificial intelligence and learning analytics, it is possible to predict which learners are at risk of failing to complete a course also to have the visualization of information by providing an overview of learning data (using various diagrams, graphs, and tables) in the learning dashboard (Ifenthaler et al., 2020). For example, there are various tools that can notify a teacher if many students have chosen incorrect answers to a particular question. As a result, the teacher has the opportunity to point out a less learned topic.

Our study also proved that artificial intelligence and learning analytics help teachers to involve students in the educational process, making it more interactive.

However, research highlights the need to help teachers master data-driven technologies and develop their competencies to use data effectively for pedagogical decisions (Gummer, Mandinach, 2015). Our study found that study participants lacked competence to interpret data correctly. The study has shown that it was difficult for teachers to plan appropriate pedagogical interventions based on the data. The conducted study highlighted the need to develop teachers' competencies in the use of learning analytics. We emphasized the importance of the role of mentor or a supervisor in helping teachers to work successfully with data and to make evidence-based decisions based on learning analytics.

In addition, researchers single out the following factors that may have a negative impact on the integration of learning analytics technologies in schools: the inability of teacher education and training programs to impart the necessary technical knowledge and skills; lack of funding and resources; lack of a strategy for data collection and analysis; limited motivational incentives (Zhu et al., 2018). Our study emphasizes that the COVID-19 pandemic period has highlighted other problems for teachers, such as fear of technology management, skepticism, apathy and lack of motivation etc., which may also have a negative impact on the integration of learning analytics technologies in schools.

Conclusions

Learning analytics and artificial intelligence programs (or platforms) have a great number of benefits for teachers, as a result, such programs might solve many educational problems, improve teaching/learning process, save time and energy. Pandemic years where one of the hardest for education process, however learning analytics and artificial intelligence programs helped to go trough it and ensured it's use in the future.

Countries, which are just starting to use learning analytics and artificial intelligence programs still lacking some digital skills, also analytical competences in order to interpretated and to use programs fully. However, the example of the experienced countries show that such challenges are beatable.

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TEACHER AS A SUBJECT OF LAW IN LEGAL EDUCATION RELATIONSHIP

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ABSTRACT

In Latvia, the essential legal aspects of the teacher's professional activity have been little studied. In short, the relevance of the research and practical nature is not negative. Taking into account several difficult cases in the practice of educational institutions, as well as some legal proceedings in which teachers, educators and parents were involved, it follows from discussions about how the work of teachers, its content, rights, duties, and responsibilities both before and the Covid-19 pandemic are relevant. Although in Latvia, the number of teachers in general education schools has decreased over the past five years, at the same time, these schools form the largest number of teachers, i.e. 21,573 teachers (2020). There were only 2,424 (Official statistics of Latvia, 2021), teachers in vocational education institutions in 2020, and 11,430 teachers in preschool education in the 2019/2020 academic year (Ministry of Education and Science, 2020). That is why general education teachers are the focus of this study. The teacher is both a participant in the pedagogical process and a participant in legal relations. This means that teachers are an important subject of law, who fulfil their rights and obligations. The teacher, together with other subjects of law – the parents of the student, the head of the educational institution, support staff, etc. – are responsible for the result of the educational process. The teacher is involved in professional activities both in the field of children's rights and in the field of labour, in constitutional and administrative law. Therefore, it is important to know the main rights, duties and responsibilities of a teacher and proposals for improving Latvia's regulation of Education law.

Keywords: teacher's rights, duties, responsibility, teacher as a subject of law, legal educational relationship.

Introduction

The professional activity of a teacher today is relatively widely studied. A fundamental study on the identity of the teacher has recently been published in Latvia. This study, for example, indicates the responsibility and independence of the teacher's personality as a sense of professional identity. This, together with the professional and high-quality teaching of their subject, also enables the teacher to apply what is established by legal

acts, as well as demonstrate an understanding of the content and hierarchy of his professional duties (Vidnere, 2019).

The teaching profession and the factors that affect it needs to be studied from different viewpoints. Taking into account the above, the aim of this research is to analyse the most important components of a teacher's professional role in terms of educational legal relations, i. e., a teacher's rights, duties and responsibilities. In addition, the article focuses mainly on education as a set of administrative legal relations, leaving aside other research questions about the teacher as a subject of civil legal relations. Respectively, questions about teachers' employment, salaries, vacations, etc. are not further analysed in this study.

The research is based on scientific literature, national legislation, such as the Latvian (hereinafter – LV) Education Law, the Law on the Protection of the Rights of the Child, case law – practice of the Constitutional Court, the Senate of the Republic of Latvia and other courts. The following methods of interpretation of legal norms are used in the research: grammatical – legal interpretation that is based exclusively on the words themselves, systemic – legal interpretation that is based on analysing legal norm as a system, teleological – legal interpretation that is based on Identification of the objective (goal) of legal norms.

Considering the interdisciplinary nature of the research, the authors want to emphasize that the Education Law of Latvia uses the term "teacher" to refer to all persons employed in educational institutions or certified private practice who implement educational programs (Education law of Latvia, 1998). Thus, taking into account the diversity of teachers' positions (Cabinet of Ministers, 2011, Nr.354) and the specifics of this study, as well as the limitations of the volume of publication, only the professional activity of a general education teacher will be analysed. Consequently, the authors of the study have chosen to use the traditional term "teacher", while acknowledging that this terminological choice suggests that the article will not analyse the management or support staff, such as the social pedagogue, school or education psychologist, speech therapist, or activities of teachers with specific responsibilities, such as form tutors. In the opinion of the authors, the legal aspects of the rights and responsibilities of support staff or the head of a general education institution are topics worthy of separate research.

The legal aspect of the education process

The basic duty of a teacher's daily professional role is to participate in the implementation of the educational program – to organise and implement the teaching and upbringing process in accordance with the

educational standards and guidelines set by the state. Basically, this main obligation necessitates the establishment of a lasting pedagogical and also legal connection with the learners, their parents and legal representatives, as well as the ability to deal with various (problem-solving) situations in their daily activities, the nature of which may even go beyond traditional educational frameworks (e. g. social issues, psychological support for learners, etc.), as well as taking responsibility for learners, their well-being and safety. This implies that a teacher's role is an important subject of legal relations for education, for whom specific rights and obligations, as well as responsibilities are detailed in statutory regulations. This legal relationship is a complex one, as it regulates both human rights (the right to education, the rights of the child and its protection, etc.), as well as administrative rights (the student's education in an educational institution, etc.), civil law (a teacher's employment relationship with employer, etc.). Thus, the activity of a teacher is regulated by the determination of rights and obligations, a number of regulatory enactments, including the Education Law of Latvia, the Law on the Protection of the Rights of the Child of the Republic of Latvia, the regulations of the educational institution and the rules of procedure, etc. Pedagogical scientists point out that teaching, especially in primary and secondary education, is nationally defined in terms of both content and organisation, i. e., educational standards and guidelines, and the educational institution as the institution where the teaching takes place determines the teacher's professional activity and defines the basic structure of teaching and student relationships (Namsone, Lāce, Volkinšteine, 2018). The Latvian standard of the teaching profession also states: "[..] A teacher carries out pedagogical activity in one of the levels and types of education in accordance with the state education standards or the state pre-school education guidelines. The teacher purposefully directs the development of the learner's competencies in accordance with the needs of the learner's individual development, learning, personality and social development…" (Teacher profession standard, 2018). This means that the teacher must be competent not only in didactics or child psychology and in his/her subject, but also in matters of children's rights, as well as in the legal framework related to the work of a teacher. At the same time, the State Inspectorate for the Protection of the Rights of the Child points out that, in its inspections in 2020, it had found reference to insufficient cooperation from teachers with parents, emotional and physical abuse between peers, as well as inappropriate use of disciplinary and non-pedagogical methods of communication with students by teachers and teaching assistants. That is, of the total number of examinations, the majority of (23.78%) cases were related to emotional abuse by teachers (Public Report of the National Inspectorate for the Protection of Children's Rights, 2020). In this context,

the judgment of the Supreme Court of 2015 should be mentioned, which states: "The actions of a teacher when stepping on a child's feet are unjustifiable and incompatible with the status of a teacher, as such do not correspond to pedagogical methods, as the physical intervention on a child is a violation of the child's rights and is incompatible with continuing any employment at school…" (Judgment in Case No. C33261514, 2015). While in 2021, the Regional Administrative Court heard a case for the dismissal of a director of a general education institution in Riga, including a state education standard that is mandatory for anyone who develops and implements general education programs. The head of an educational institution has a duty to ensure that teachers implement the curriculum set by the state (Judgment in Case No. A420198420, 2021). So, the teacher must not only know and teach study subject, but also his/her rights and obligations in the teaching and upbringing process.

Teachers' rights, duties and responsibilities

The United Nations Educational, Scientific and Cultural Organization (UNESCO) states that today, when information is readily available, the role of teachers is changing significantly. Namely, teachers are still key members of society in facilitating learners' transition to a sustainable lifestyle. This means that teachers help learners understand difficult choices. This is necessary to ensure sustainable development to motivate them to transform themselves as well as society. Teachers themselves need certain opportunities, knowledge and skills; they must adhere to certain values and they must act in such a way as to pass them on (UNICEF, 2021). This is possible if teachers execute their responsibilities in their daily activities and exercise their rights, acting in the best interests of the learners and children as much as possible. Although Section 51 of the Latvian Education Law sets out the general responsibilities of a teacher, the details of the teacher's activities are up to each educational institution, specifying the teacher's tasks and responsibilities accordingly, (taking into account the specifics of the educational institution, the learning environment and learners' needs internally and externally). It should be noted that the teacher's participation in extra-curricular activities must not lead to an excessive burden and interfere with the performance of the teacher's main duties (International Labour Organisation United Nations Educational, Scientific and Cultural Organization, 1984).

The Constitutional Court of Latvia also points out: "[..] Communication between the teacher and the learner takes place mainly within the framework of the implementation of a certain educational program. However, the personal example is also important in the educational process, because

the learner can also be influenced by the actions of the teacher and the head of the educational institution outside the implementation of acertain educational program or even outside the educational institution. For example, a wide range of people, including students, their parents, friends and relatives, can follow the teacher's activities outside working hours, if they are covered on social networks or are otherwise made public (participation in events or associations). Thereby, the teacher has a significant influence on the learner, not only in the process of acquiring a certain educational program, but also in everyday communication… " (Constitutional Court of Latvia, Case No. 2017-03-01, 2017).

This finding is also in line with the science of pedagogy. Respectively, a teacher's professional competence involves more than just knowledge. Skills, attitudes and motivation also contribute to teaching and learning. Teacher proficiency is characterised by good problem-solving strategies, extensive knowledge of pedagogy and the subject matter, good adaptability in relationships with different students, good decision-making skills, greater sensitivity to the context and greater respect for the student (Guerriero, 2021). In the pedagogy, the teacher's activities are considered to affect the activities of pupils, which is the basis of their future competences (Margeviča-Grinberga, Šūmane, 2020).

Historically in Latvia, for example, the 1920 legislation stated: "[..] The school must respect the rights, interests and amenities of the pupils, but the teachers must demand the same from the pupils…" (Melnalksnis, 1923). Thus, a teacher has long been subject to high professional and personal requirements, which, among other things, include law-abiding behaviour, compliance with regulatory enactments. As well as observing the relatively recent amendments to the Education Law – loyalty to the Republic of Latvia and its Constitution (1998), because the teacher must ensure the learning process, observing the content of the state education standards and guidelines and achieve the state goals. It is also necessary to raise considerate, honest, responsible people – Latvian patriots, strengthening the students' belonging to the Republic of Latvia. Each pupil in accordance with Section 3, Paragraph one of the Education Law, shall be entitled to qualitative and inclusive education (Education law of Latvia, 1998). Upholding such rights is also one of the basic duties of the educator. In addition, the age, development and needs of pupils, as well as the specific content of the educational relationship often also determine the hierarchical nature of the teacher-learner relationship. Namely, the student must follow the procedures adopted by the educational institution and obey the teacher's requirements, while the teacher has a creative and responsible duty to participate in the implementation of the educational program, to ensure and implement a modern and high-quality teaching and upbringing process; to create and

ensure a physically and psycho-emotionally favourable, inclusive and safe educational environment, as well as to create and ensure a physically and psycho-emotionally favourable, inclusive, safe educational environment. For example, in one of the judgments of the LV Senate in 2017, it is specified: "[..] An environment suitable for acquiring education means such circumstances in which a student can acquire the respective educational program without hindrance and to the fullest extent. This includes both the right of every pupil to trust that other schoolmates will be respected in the learning process and the right of every teacher to perform his or her duties in a dignified environment…" (Judgement No. A420225114 SKA-115/2017, 2017).

An environment suitable for education is one in which the student feels physically and psycho-emotionally safe, in which mutual communication is respectful, but in the centre there is the learner and his or her needs. The implementation of the teaching and upbringing process is not possible without appropriate modern technologies, other material and technical means or textbooks. Therefore, one of the preconditions for a teacher's professional activity is an appropriate learning environment with provision so that it is physically possible to lead a modern lesson (Margeviča-Grinberga, Šūmane, 2020).

As already stated, in the performance of his or her duties, the teacher must give priority to the rights and interests of the child or learner, (Law on the Protection of the Rights of the Child of the Republic of Latvia, 1998), the rights, needs and development of pupils must be respected, including the individualisation, differentiation and personalization of the teaching and learning process without any discrimination, in coordination with the staff of the educational institution developing interdisciplinary links and other initiatives of a pedagogical nature. As previously specified, in addition to the obligations and rights detailed in the Education Law, the duty of cooperation and exchange of information with other staff of the educational institution, as well as with pupils, parents and legal representatives, as well as regular systematic follow-up of pedagogy and in all subject areas for improvement.

Management of teaching and upbringing is related to the obligation to evaluate/assess the student's performance and participation in the educational process. This evaluation/assessment can take the form of a descriptive account that can be submitted to the educational institution, other teachers, the pupil (at a level he or she understands), the pupil's parents, and an assessment on a given grading scale (e. g. scores). Evaluation in itself requires compliance with the evaluation principles and procedures established by the state and the educational institution. It raises the issue of the teacher's obligation to be able to explain and substantiate his or her evaluation/assessment, as well as the learner's right to challenge or correct

the assessment (which is a current issue for pedagogy, education law and education management). In addition, the teacher should be involved in the decision-making and documentation of a number of student-related issues (for example, enrolment, promotion to the next class, deduction, recommendation for another curriculum, support measures) where the teacher's assessment and opinion can be decisive. When cooperating with the learner on a daily basis, one of the basic principles is not only the exchange of information, but also respectful communication and clear, reasonable requirements. As recognised by the Supreme Court of Latvia, a teacher must be an example to students in the learning process. This means that the teacher must meet both professional and high moral and ethical requirements, and observe professional ethics (Judgement No. A420225114 SKA-115/2017, 2017).

In addition to the above, the teacher's set of responsibilities requires the ability to find a solution to any conflict or problem situation that arises within the educational relationship (involving institutions outside the educational institution if necessary). Namely, the LV Senate points out: "[..] Schools, whose competence is to provide a suitable environment for education, must be able to deal effectively with situations of non-compliance by the learner..." (Judgement No. A420225114 SKA-115/2017, 2017). In order for a teacher's work to be fully fledged and meet the highest quality standards, the teacher must receive the necessary information about the student's health and development, previous education, and any other issues that may affect the teaching and upbringing process. Thus, both in the educational institution and in cooperation with a particular teacher, a clear exchange of information with other teachers, students and their parents must be established. Moreover, the teacher must be available so that such collaboration is possible and can be implemented in a variety of ways. No less important is the teacher's right to work in a favourable and dignified environment, which raises the issue of the duties and responsibilities of learners. LV The Senate emphasises: "The implementation of the right to education is inextricably linked with the responsibilities of learners or students themselves in the process of obtaining education. The responsibilities of learners are aimed at enabling students to study the curriculum as effectively as possible and at ensuring that their behaviour does not infringe on the right of others to a fully fledged process of education and growth. These responsibilities are based on socially accepted values, including a polite and dignified relationship. [..] ... The fact that a pupil confronted a teacher with a coarse word is to be regarded as a particularly serious breach of the learner's obligations..." (Judgement No. A420225114 SKA-115/2017, 2017). This raises the issue of the teacher's ability to resolve conflicts and problem situations, as well as being able to find solutions to protect the rights of

oneself and others, i. e. to work for students to fulfil their responsibilities in the educational institution, to respect the rights of teachers and others.

One of the most important principles that determines the professional activity of each teacher is the principle of responsibility. Section 51, Paragraph Two of the Education Law stipulates that "teachers are responsible for their work, the methods, techniques and results" (Education law of Latvia, 1998). Taking responsibility means the teacher's ability to implement a modern, systematic, high-quality, continuous and inclusive teaching and upbringing process, to choose the solution that best suits the needs and interests of learners, including the most appropriate teaching aid, method, approach, also – if necessary – readiness and the ability to justify and explain one's actions, to acknowledge the consequences of one's actions, to be able to analyse and reflect on one's actions. No less important is the teacher's responsibility for the student's safety – both in the lesson, in the educational institution and its events, as well as the responsibility that the teacher's teaching and upbringing process is meaningful, promoting the student's growth and development, ensuring successful continuation and inclusion in society. In addition to the above, education is essentially one of the administrative functions provided by an educational institution on the basis of a state decision (state registration, licensing of educational programs). (It should be noted that state and municipal educational institutions are public administration institutions.) Consequently, the teacher is also bound by the principles of public administration, including respect for human rights, the rule of law, openness, accessibility, good governance, efficiency, continuous improvement, the public interest, etc. (Briede, Danovskis, Kovaļevska, 2016). These principles must be implemented in the daily activities of a teacher – in the performance of duties, implementation of rights, as well as responsibility, because as the Constitutional Court of Latvia has acknowledged "[..] Learners, their family members and society as a whole would benefit …"(Constitutional Court of Latvia, Case No. No. 2017-07-01).

Conclusions

In accordance with the above, it is possible to establish that the set of rights and obligations manifested in the everyday professional activity of a teacher, is considerably wider than the general duties and rights of a teacher specified in the education law. The definition of a teacher's professional responsibility also needs to be supplemented. It must be concluded that:

1. The basic duty of a teacher is to implement the teaching and upbringing process in accordance with the state educational standards and guidelines, proving himself or herself as a law-abiding, ethical and loyal professional in his or her daily activities. However, no single piece of

legislation is able to provide guidance on all possible solutions, leaving each teacher with a relatively wide field of interpretation or a so-called "grey area". At the same time, the teacher must act in the interests of his students (the principle of the rights of the child and the priority of interests), justifying his activities with the goals of educational standards and programs.

2. The precondition for the performance of the duties of a teacher and the exercise of rights is dignified communication, cooperation and exchange of information with colleagues, the learner and his or her parents, and the child or learner being at the centre of the educational process, at the same time being able to identify the needs of all learners in the class/group and to balance them in the interests by implementing the principles of inclusive and high-quality education.

3. Consequently, the guiding principle of a teacher's professional activity is the priority of the child's/learner's rights, the needs of the learner (child-centered educational process). Alongside this, the pedagogue is bound by a number of basic principles of public administration, which are basically aimed at the maximum protection of the rights and interests of the learner and his or her parents, as well as the most efficient and high-quality activities possible.

4. Among the duties of a teacher, the list of which is currently missing in the Education Law, is the obligation to create a favourable and safe educational environment, to ensure and take care of learners 'safety', to follow current issues in pedagogy and the subject, to get involved and solve problems, if learners' safety and well-being are under threat.

This makes it possible to make a proposal on the need to start a wider public and professional discussion on the improvement of the regulation of the rights and obligations of teachers.

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SYLLABUS AND LEARNING OUTCOMES: A CASE STUDY OF MEDICAL COLLEGE STUDENTS' AND LECTURES' EXPERIENCE

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ABSTRACT

Syllabus is an important document for higher education institutions. It is a normative requirement for the assessment of the quality and facilitates understanding between teachers and students on the course and requirements. An important section of syllabi is the learning outcomes that characterise what students need to be able to demonstrate after completing the course. The aim of this research is to find out to what extent students read syllabi, to find out students' opinions about the learning outcomes to be achieved specified in the syllabus, as well as to analyse how lecturers introduce students to the content of the syllabus. The research consists of three stages: 1) compilation of statistics and analysis on the number of readings of syllabi; 2) analysis of students' self-assessment of the learning outcomes to be achieved; 3) survey of lecturers on the process of the introduction of syllabi. In the results, it was concluded that in the 2nd academic year there are more students who have read the syllabi than in the 1st and 3rd academic year. It was discovered that 64% of students agree with the statement that the lecturer introduces the requirements of the study course and 56.5% of students agree that at the end of the study course they have achieved the learning outcomes specified in the syllabus. The results of lecturers' surveys indicate that the vast majority 78.8.5% are convinced that only a few read the syllabi, 41.2% use the presentation, 5.9% create a separate report to introduce students to the syllabus and learning outcomes and 60.6% devote around 10 minutes to it. According to the obtained results, it would be necessary to encourage lecturers to devote more time when introducing students to the syllabus and to inform the lecturers about the feedback on the reading statistics of their syllabi.

Keywords: information methods, learning outcomes, reading statistics, self-assesment, syllabus

Introduction

In each study course in higher education, lecturers should provide asyllabus, also sometimes called a study course description, which provides the necessary information regarding the organisation and requirements of a study course. Lecturers should invest a lot of time and be patient

in writing qualitative syllabi. The syllabi for each study year should be realised by lecturers. There is an assumption that students do not read syllabi, and lecturers complain that they develop them in vain. Therefore, the research has a set goal – to find out to what extent students read syllabi. There are relatively few topics in research where authors have studied whether students read syllabi. Many authors have looked at syllabi in theory from the point of view of design, development and its informative sections (Caganova, 2008; Eng et al., 2017; Sabbah, 2018). DiClementi and Handelsman (2005) are among the few researchers to investigate students' perceptions of the class and the lecturer based on their reactions to the syllabus.

It is assumed that students are not interested in reading syllabi. This is exacerbated by the fact that statistics on reading are not always easy to record.

However, research available for statistics on the number of views has focused on the results by analysing which sections of syllabi are viewed more, rather than whether students read syllabi in general. Meuschke et al. (2002) found that the most important sections that students read were the grading system, namely how the final grade is formed. Similar observations to Meuschke et al. (2002) were also obtained by the author Zucker (1992), who saw that students' interests were the dates of mid-term tests, the number of examinations and course topics (Zucker, 1992). The authors Marcis and Carr (2003) concluded that the least important sections for students were the academic integrity system, information on additional literature, basic information about the course such as the number of contact hours, and the amount of credit in the course. Previous studies had indicated that the two syllabus elements most important to students were in the area of "student assignments-explanation" and "instructor information" (Farrow & Leathem, 2021).

In turn, the authors Calhoon and Becker (2008) conducted a study to deduce the time at which students read syllabi. They concluded that almost half of the students in the first administration looked at their syllabus less than two hours before class. Six weeks later, nearly half of the students looked at the syllabus the day prior.

Research problem – the assumption that students do not read syllabi and lecturers are therefore not interested in updating and carefully developing them. Lecturers insist that the demands for elaborated syllabi are only satisfied by study field evaluation experts and not by students. The contribution of the research would reveal the real situation as to how students read syllabi and whether the lecturers' assumptions are true. The innovation in the field of research is that this type of study has not been carried out until now, because it is difficult to obtain statistics on the

number of readings without a relevant internal system that records each student's step in the system (for instance – Moodle).

In the following chapters, the authors will define what the syllabi is and describe its categories, will analyse the most successful methods and techniques for drawing students' attention to the syllabus, and analyse the importance of learning outcomes.

Syllabi

Over the years, the authors have agreed on 4 categories for how a syllabus could be categorised according to its application. In the first case – the syllabus serves as a contract. As the first document is often distributed to a class, the course syllabus has long been the standard communication tool in higher education to introduce students to courses (Bowers-Campbell, 2015; Farrow & Leathem, 2021). In the second case – serves as a permanent record, in the third case – serves as an aid to student learning and in the fourth case – cooperation with the course lecturer (Calhoon & Becker, 2008), Fornaciari & Dean, 2014).

In the first case, the syllabus is also sometimes called a "course handbook", course guide, and description. Instructors have sometimes referred to syllabi as being a "contract", using it to serve as an official university document to set expectations and requirements for the class (Bowers-Campbell, 2015; Farrow & Leathem, 2021; Fornaciari & Dean, 2014; Katsampoxaki-Hodgetts, 2022; Parkes & Harris, 2002).

In the second case, the syllabus can be explained as a tool for formal requirements. A power tool to reflect the content of the study course, as well as to determine and measure learning outcomes. With this approach, the syllabus is understood as a tool that is likely to be useful for accreditations, and when students wish to transfer credits from one institution to another, the syllabus may be used to help determine whether or not the request is appropriate (Fornaciari & Dean, 2014; Parkes & Harris, 2002).

The literature has been explored in addressing what to include or exclude in the document (DiClementi & Handelsman, 2005; Parkes & Harris, 2002). The syllabus should delineate the responsibilities of students and of the instructor for various tasks, including attendance, assignments, examinations and other requirements (Parkes & Harris, 2002). With such an agreement, the student can get acquainted with the planned course and its requirements and decide whether to choose to take the course or not (Parkes & Harris, 2002). This is especially convenient for students choosing elective courses.

In the third case, the syllabus is a useful tool for the student during the study process. For example, a guideline that the student could use during independent study outside the classroom. It is useful to include various

instructions, for example, on the observance of academic integrity, the development of scientific language, the need to get to the lecture on time. A tool that develops a student's self-management skills, introduces study strategies, as well as allows them to be aware of errors typically made by students and sources of where to look for help (Habanek, 2005; Parkes & Harris, 2002). The syllabus should be "not only an effective map of your course's nuts-and-bolts logistics, but also an invitation to actively engage in the learning process" (Gannon, n. d.). Perlman and McCann (1999) reported that the majority of students (72%) they surveyed desired a detailed syllabus.

In the fourth case several authors define a newer approach to interpreting the syllabus and it is a collaboration (Fornaciari & Dean, 2014; Hess, 2008; Kaplan & Renard, 2015; Weimer, 2002).

The direction of the present and the future is that the syllabus is seen both as a communication and collaboration tool. The learning process becomes a partnership between the lecturers and the student, and thus student responses to the learning process become an integral, and not incidental, part of the entire system (Fornaciari & Dean, 2014). Some lecturers feel that it is their right and responsibility to make all decisions about course content and procedures, and others believe that students should always provide input into such matters (Parkes & Harris, 2002). Hess (2008) supports student collaboration; he only does so with upper-level students and does not allow first-year students' input into the syllabus design, believing that first year students are simply not ready to participate effectively in this way. The author Diamond (1998) has suggested preparing a student manual to supplement a syllabus rather than trying to incorporate too much information in the syllabus alone (Diamond, 1998).

One of the proposed methods for influencing student learning through a course description is to create a learning-centred document. A learning-centred document diverts attention from presenting content (student teaching) to student learning (Cullen & Harris, 2009).

The authors agree that when a student opens a file, they will often evaluate it visually in the first place, and if it exceeds the time allotted for reading or the intended effort, it will not be read. Therefore, the amount of information and the way it is presented should be optimally balanced. The authors support the notion that nowadays it is not sufficient to have a syllabus as a formal agreement for self-directed learning, mutual evaluation and a study-centred approach for students. It needs to be made more attractive to students; students need to be involved in the development process, as discussed by the authors of the fourth case.

Presentation of syllabi

Despite its importance, the presentation of the syllabus has been virtually ignored in research (Thompson, 2007). However, student development literature and in particular, Generation Y age cohort literature, indicates that information processing norms may increasingly degrade students' ability to use course syllabi for their intended purpose (Fornaciari & Dean, 2014).

Lecturers often strive to create a hospitable environment to make students feel welcome on the first day of class; they must also establish rules and procedures that illustrate their authority. Sometimes, teachers who look gentle, polite and concerned at first glance can appear tyrannical when presenting the syllabus (Singham, 2005). For the area of "student assignments-explanation", instructors should illustrate all major assignments in the syllabus with course grade weighting, due dates, and have the assignments made available to students for accessing at any time (outside of tests) (Farrow & Leathem, 2021).

The author Thompson (2007) emphasises that the first piece of advice for lecturers is to take the time to get to know each other and encourage students. A good method is to emphasise how useful and interesting the study course will be and then move on to the syllabus. One teacher explained, "I try to use 'our' and 'we' a lot ... I use 'we' instead of 'you'" in the presentation. When it comes to the requirements that will be mandatory during the course, it is recommended to put such in bold font, as well as to manipulate with the tone of voice. After the presentation of the requirements, it is definitely desirable to emphasise that the requirements will be in place for everyone, so that students do not have doubts regarding their abilities. Tone of voice was critical in striking a balance between being a strict authoritarian and someone students look forward to working with during the semester. Of course, students' reactions must also be monitored in order to adapt to the situation. The presentation itself is important. Teachers should highlight key aspects in the syllabus rather than read the entire thing. The average length of the presentation of the syllabus was 26.6 minutes. Students clearly paid more attention during the presentation if teachers used classroom presentation technology. At the same time, the teacher delivers the information orally by emphasising key points in the document (Thompson, 2007).

Student-teacher relationships have been shown to have a strong impact on academic success. In syllabi, the lecturer must express enthusiasm for the field of content to be acquired (Young-Jones et al., 2021).

The authors conclude that whatever method the teacher chooses, it is based on pedagogical explanatory work in order to emphasise what is more important to students, justify its necessity and encourage it.

Learning outcomes

As it is known, the learning outcomes occupy an important place in the syllabus. In this chapter, it is important to explore students' perceptions and use of learning outcomes.

By explicitly building a curriculum based on what students should be able to do with their knowledge, the learning outcomes approach helps ensure that students and the faculty can see what the point of the course is (Battersby, 1999).

The use of learning outcomes to define courses and programmes has resulted in the loss of the student-centred idea, because for a student to act student-centred, they would need to be able to choose their own learning opportunities, resources and time required to achieve their learning outcomes. Once students realise that only the learning described by learning outcomes is to be assessed, they only focus on demonstrating this learning (although not necessarily achieving this learning (Ian, 2011).

In the research of Brooks et al. (2014), 81% of students agreed (either agreed or strongly agreed) that learning outcomes are useful learning aids, with only approximately 7% disagreeing. Regarding the students' answer to the question 'when are learning outcomes most useful', nearly half of the sample, 46% of students, said 'when revising'. Almost half of the students, 49%, agreed that learning outcomes could only be fully understood at the end of a module when the total course or module content was known. Students want learning outcomes to help guide their learning; they do not want to be restricted by them, nor do they want to be confused by poorly written or ambiguously worded outcomes (Brooks et al., 2014).

Singham (2005) argues that lecturers have professional responsibilities to create courses where learning outcomes have been defined and well considered.

The authors agree that the majority of students' learning outcomes can still only be fully understood and assessed when the study course has been completed. This suggests that learning outcomes should be written in a way that students can understand and explain as pedagogically desirable methods at the beginning of the course.

Method

The study was carried out among The Red Cross Medical College of Riga Stradiņš University (hereinafter – College) in Riga, Latvia. The College implements the 1st level professional higher education field of study (European Qualifications Framework level 5) – "Health Care", which includes five study programmes 1) Treatment (with the qualification – physician assistant), 2) Treatment (with the qualification – emergency medical physician assistant),

3) Therapeutic massage (with the qualification – massage therapist), Nursing (with the qualification – nurse) and Pharmaceuticals (with the qualification – pharmacist assistant). 698 students studied in 2018–2019 in total in the College, 645 studied in 2019–2020, 613 studied in 2020–2021, and 533 studied in 2021–2022.

The empirical study was developed through a descriptive analysis. The study at the College was conducted in 3 phases from November 2021 to January 2022. The quantitative data analysis software *MsExcel* 2016 was applied for data processing.

In the first stage, the research question envisages determining the students' activity in reading syllabi. Statistical data from the College's internal e-learning platform *Moodle* were collected. The number of students that read the syllabi was counted manually. The compilation of statistics was performed for the academic year 2021-2022 autumn semester (1st semester, 3rd semester and 5th semester) in five 1st professional higher study programmes of the College. The e-learning platform *Moodle* offers to obtain such statistics by manually opening each study course separately, selecting the section *more,* selecting the section *reports,* and selecting the *Course participation* option. In the query *activity,* the *Module* specifying the *syllabus,* in the *show* menu specifying the *student* and in the menu, *all actions* specifying the *view.* A total of 142 study courses were evaluated. The results were obtained: 1) on how many students read the syllabi. The results were expressed as a percentage of the number of all students in the programme; 2) it was analysed whether there are differences in the syllabi read by first, second and third year students; 3) the reading of the syllabi was analysed according to the conformity of the study course to the branch of science. It should be noted that all the syllabi, regardless of the start date of the study course, were posted on the e-platform *Moodle* in the last week of August 2021, which provided students with access to the content of the study courses. The results of the number of readings were compiled in November of the academic year 2021 for the period from August 2021.

In the second stage, the results of the student survey over four years were analysed from 2018 to 2022. The purpose of the survey was to find out students' thoughts about how lecturers introduce students to syllabi and the learning outcomes. Students had to give an opinion on the following statements: 1) 'at the beginning of the course the lecturer introduced the required acquisition of knowledge, skills, competencies (clear learning outcomes)' and 2) 'during the study course I achieved the learning outcomes (knowledge, skills, competences)'. At the end of each semester, students filled in study course questionnaires, in which the competencies of the teaching staff were assessed. 76 lecturers have been evaluated on average in four years (both academically elected and guest lecturers), but

the average number of students who have evaluated lecturers in four years has been 54%. In the autumn semester of the academic year 2018–2019 and 2019–2020, the surveys were distributed in person in the auditoriums at the end of the study courses, which provided a larger number of respondents. Since the spring semester of the academic year 2019–2020, the surveys have been distributed electronically using the *Google Forms* survey tool. The results were summarised within one month of each survey.

In the third stage, a survey of lecturers was conducted in order to find out the opinion of lecturers about the methods they use in their practice by introducing students to the syllabus. The survey was distributed in December 2021. The response rate was 51%.

The chosen research instruments are suitable because the best tool for obtaining syllabi reading statistics is the internal system Moodle. The survey tool has been chosen because it covers a wide audience and it was possible to analyse results in 3 years.

Results and discussion

The analysis of the first phase of the study included a compilation of statistics to find out how many students read syllabi. The results are available in Table 1. The aim of data analysis is not to analyse results per study programme, but the total statistics of syllabi reading. To evaluate the statistics, reading statistics are further divided into 10 categories (0–10%, 10–20% ... 80–90%, 90–100%).

Table 1. Statistics on the number of syllabi readings (as a percentage of the total number of students in the course, programme)

Number of syllabi	Study courses evaluated	Category
13	142	00.00% - 10.00%.
41	142	**10.01% -20.00%**
23	142	**20.01% - 30.00%**
26	142	**30.01% - 40.00%**
17	142	40.01% - 50.00%
10	142	50.01% - 60.00%
8	142	60.01% - 70.00%
2	142	70.01% - 80.00%.
2	142	80.01% - 100.00%.

The categories with the highest reading activity stand out at 10–40%. According to the research question, it must be concluded that the statistics on the number of readings are relatively low. The results are in line with the research of other authors on the low activity of students reading the syllabi.

Table 2 shows whether there are differences in syllabi read by students of the first, second and third academic year. As there are different numbers of study courses in each academic year, for comparative analysis between academic years, study courses are expressed in equal parts of 100%. For a better visual view, a grey colour has been used for table No. 2. Most students read syllabi in the category 10–20% in both the 1st, 2nd and 3rd academic year. There is no difference. The only difference worth emphasising is that students studying in the 2nd academic year read syllabi more, as evidenced by the categories of 80–100% compared to 1st and 3rd year students. In general, it cannot be said that students are more responsible in the first year of study, because everything is new to them, nor can it be said that students in the 3rd year are more experienced and therefore read syllabi more.

Table 2. Statistics on the number of readings of syllabi by academic year (in categories from 0–100%)

Academic year	0-10	10–20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Courses expressed in %	Number of courses
1st academic year	2.33%	30.23%	13.95%	20.93%	18.60%	9.30%	4.65%	0.00%	0.00%	0.00%	100.00%	43
2nd academic year	13.11%	29.51%	13.11%	14.75%	8.20%	8.20%	8.20%	1.64%	1.64%	1.64%	100.00%	61
3rd academic year	10.53%	26.32%	23.68%	21.05%	10.53%	2.63%	2.63%	2.63%	0.00%	0.00%	100.00%	38

The authors wanted to find out whether syllabi are read more or less depending on the course's affiliation with the field of science. The results are available in Table 3.

Table 3. Statistics on the number of readings of syllabi by fields of science (in categories from 0–100%)

Branch of science	0-10	10–20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Number of courses
Social science courses	3.33%	40.00%	13.33%	13.33%	6.67%	13.33%	10.00%	0.00%	0.00%	0.00%	30
Natural science courses	0.00%	12.50%	12.50%	37.50%	12.50%	0.00%	12.50%	0.00%	0.00%	12.50%	8
Humanities courses	0.00%	40.00%	0.00%	20.00%	20.00%	20.00%	0.00%	0.00%	0.00%	0.00%	5
Medical and health science courses	19.19%	26.26%	16.16%	16.16%	11.11%	5.05%	4.04%	2.02%	1.01%	0.00%	99

Syllabi belonging to medical and health sciences are most read in the category 0–50%, while syllabi of social science courses are most often read in the category 10–40%, but for other branches of sciences, there is no logical explanation. There are no differences regarding which branch of science the study course belongs, in order to claim that syllabi are therefore read more.

In the second stage of the research, students' self-evaluation was analysed; the results of surveys at the four-year interval is available in table No. 4. The aim was to find out how students evaluate the learning outcomes. See table 4.

Table 4. Students' self-assessment of the learning outcomes

Academic year	Completely agree (%)	Rrather agree (%)	Neither agree nor disagree (%)	Rather disagree (%)	Completely disagree (%)	Can't answer, the course is recognized in previous education (%)	Number of lecturers evaluated (number) *	Number of students who have assessed (% of all students)
Statement: During the study course I achieved the learning outcomes (knowledge, skills, competencies) specified in the syllabus								
2021./2022.fall semester	55	21	8	2	2	12	78	42.1
2020./2021.	58	20	7	2	2	11	82	55.1
Statement: At the beginning of the course the lecturer introduced with the information and learning outcomes indicated in the syllabus								
2019./2020.	69	19	6	3	1	2	65	54.8
2018./2019.	59	24	9	3	1	4	78	64.7

* Lecturers and guest lecturers

It must be concluded that in each of the study years the overwhelming majority of respondents – students, have indicated that they fully agree with the given statements. The second popular answer is 'rather agree', which positively reflects both the students' self-esteem about their knowledge and the contribution of the lecturers. It can be concluded that these results also show that students are confident in their opinion, because if this were not the case, they would be able to state 'I can't answer'. It makes us think that despite the fact that the reading statistic is relatively low, students are somehow acquainted with the content and learning outcomes. From this it can be concluded that lecturers play an important role.

In the third stage of the research, a questionnaire for lecturers was developed with the aim to summarise the lecturers' practice in providing information to students about the organisation of the study course, introduction to the syllabus and the learning outcomes. The survey was distributed electronically using the survey tool *Visidati.lv.*

78.8% of lecturers are convinced that only a few students read syllabi, which substantiates the problem raised in the study. Regarding the results on whether the lecturers show students where the syllabus is available on

the e-platform *Moodle*, it should be concluded that the lecturers' practice is shared (location is the same from both the lecturer's and student's profile). 36.4% of lecturers indicate that they always show it, 36.4% of lecturers indicate that they do not show it because the syllabus is available in *Moodle*, 15.2% of lecturers sometimes show it, but 12.1% of lecturers indicate that they do not show it because they are not sure where the syllabus is available on the e-platform *Moodle*. The anonymity of the survey does not allow one to determine whether lecturers who indicate that they do not know where the syllabus is on the e-platform *Moodle* are in an academic position or guest lecturers. The overwhelming majority, 41.2%, indicate that in the first lecture students are introduced to the main sections of the syllabus with the help of a presentation. The next most popular method is oral presentation (without presentation), indicated by 21.6%. 5.9% indicate that a separate *MS Word* or similar format report is prepared for students, which is easier to understand and more concise. 60.6% of respondents indicate that they spend 10 minutes, 27.3% indicate that they spend 10–20 minutes, and only 6.1% spend about 20–30 minutes introducing syllabi and learning outcomes.

Table 5 provides an overview of the sections of syllabi that lecturers introduce to students in particular. As can be seen, five sections are most important in the opinion of the lecturers. This explains the results of Table 4, where students mostly indicate that lecturers introduce learning outcomes at the beginning of the study course.

Table 5. Most popular sections of syllabus lecturers are introducing to students (%)

Sections of syllabi	very important	rather important	neutral	rather irrelevant	very insignificant
amount of CP	15.6	21.9	37.5	18.8	6.3
the number of contact hours	43.8	28.1	21.9	6.3	0
for organizing the course in semesters (if the course is implemented in several semesters)	50	12.5	28.1	3.1	6.3
on the field of course science	25	31.3	34.4	6.3	3.1
for all academic staff involved in the implementation of the course (if there are several)	21.9	34.4	28.1	9.4	6.3
on the necessary prior knowledge	25	31.3	34.4	6.3	3.1
about the **aim and tasks** of the study course	78.1	18.8	3.1	0	0
about **learning outcomes**	71.9	18.8.	6.3	3.1	0
on the **tasks of independent work**	81.3	18.8	0	0	0
for **current tests** and **final examination**	81.3	18.8	0	0	0
on the **topic**s that will be covered in the study course	71.9	18.89	3.1.	6.3	0
about additional methods you will use in the study course	31.3	28.1	28.1	9.4	3.1
for mandatory, additional and recommended literature	40.6	43.8	9.4	6.3	0

Conclusions

Responding to the stated aim and research question it must be concluded that the statistics on the number of those reading syllabi are relatively low (categories with the highest reading activity stand out at 10–40%.). Neither the academic year nor the affiliation to a certain branch of science indicates any logical explanation for how students read syllabi. Despite the fact that the reading statistic is relatively low for students, thanks to the lecturer's effort (a majority of 41.2% lecturers indicate that in the first lecture students are introduced to the main sections of the syllabi with the help of a presentation), students are acquainted with the content of syllabi and learning outcomes (on average over four years, 60.25% of students completely agreed that they achieved the learning outcomes during the study course).

Lecturers play a key role in this process. Lecturers have to be informed about the feedback on their syllabi reading statistics, otherwise lecturers get the impression that students are not interested in reading syllabi at all (78.8% lecturers believe so), although results show it is not the case. Lecturers have to be informed of where syllabi are available for students and lecturers to read in the internal system *Moodle*. Lecturers have to be encouraged to spend more time introducing the syllabus and be supported in preparing separate *MS Word* or similar format reports for students that are easier to understand, and more focused. Further research should analyse whether there is any relationship between students who responsibly read syllabi and those who achieve a higher assessment in the final examination.

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WHAT DETERMINES SUCCESS IN WORLD UNIVERSITY RANKINGS? ANALYSIS OF INTERNAL GOVERNANCE AND STATE CHARACTERISTICS OF TOP 800 UNIVERSITIES IN EUROPE

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ABSTRACT

Higher education governance reforms are the subject of discussion in many countries, including Latvia, due to globalization, implementation of new public management (NPM) practices, and increasing demand for quality from a broad spectrum of stakeholders. One of the critical changes in university internal governance is introducing executive boards, which support decision-making effectiveness and transparency. Competition between institutions has also driven a rise in the importance of World University Rankings (WUR), which, although criticized, provide a basis for comparison. This research aims to explore top European universities' internal governance and residence countries' characteristics to determine factors that contribute to success in WUR. This paper reveals the importance of introducing executive boards in the governance model through an in-depth analysis of internal governance and country-specific indicators of 97 universities from 17 European countries. The paper also argues that universities from countries with smaller GDP may engage more external stakeholders. The analysis shows that internal governance, residence country-specific indicators, and university characteristics as a whole have a long-term impact on universities' success.

Keywords: *university governance, university rankings, higher education reforms.*

Introduction

Increasing demands from a wide range of stakeholders have driven education reforms in many European countries, internal governance being (one of) the fundamental instrument for rising performance and attracting scholars and students. This research aims to understand the impact of internal governance on the international standing of universities.

Many previous studies recognize different country-specific and internal factors that can influence the university's competitiveness – Gross Domestic

Product (GDP), GDP per capita, political stability, population, expenditure per student, size of the institution, etc. (Pietrucha, 2017, Marconi & Ritzen, 2015, Clifford, 2014). The relationship between country-specific indicators and university success is not clear (Clifford, 2014). However, it is recognized that good university internal governance can significantly impact the quality of education and the ability to get recognition from a wide range of stakeholders (van Vught & de Boer, 2015). This new approach recognizes that academic personnel is primarily liable for knowledge creation; however, governance is driven by implementing autonomous internal governance structures, competition for stakeholders' resources, and stakeholders' voting rights (Leisyte & Kizniene, 2006). One of the practical consequences of this trend has been the shift from democratic councils to executive boards in university governance, which has provided ground for making more informed and efficient decisions partly thanks to external representatives' engagement (de Boer, Maassen, & Gornitzka, 2017).

While economies of scale achieved by universities, which are located in larger countries, might provide ground for success, it can be noticed that universities from small economies achieve high results. Although there are many elements, both country-specific and related to internal practices, affect success; university governance inarguably is one of the building blocks. This research will compare internal university governance practices in European universities with country-specific indicators and scores in world university rankings as governance. The authors have been mainly motivated to run this research due to the ongoing Higher Education reform in their country, Latvia, which focuses on internal governance.

The paper aims to answer the research question – **"What are the country and internal governance characteristics of European universities listed as top 800 in the world university rankings?"**. Paper argues that executive boards are a fundamental part of successful higher education governance, and top universities from countries with smaller GDP are expected to include more external members in the boards. Authors also have found a correlation between internal governance bodies' composition, country-specific factors, and university characteristics, suggesting that these factors as a whole have an impact on universities' success in the long term.

Paper first discusses previous findings on university governance and world university rankings, which provides a specific benchmark for measuring a university's success. Then the paper discusses the results of in-depth research of 97 European universities from 17 countries' internal governance structures and their residence countries' characteristics. Finally, the recommendations for the composition of internal governance structures for universities located in economies of different sizes are provided.

Factors that influence universities position in World university rankings

The economy based on knowledge and skills has created a world where higher education institutions are expected to build a country's competitiveness. In this sense, world university rankings are perceived as a measure to analyze an institution's deficiencies and qualities. They reflect the institutions' capacity to recognize academics, potential students, industry, public (Marope et al., 2013). Hazelkorn (2015) shows that position in the ranking influences a wide range of stakeholders (both from governmental and private sectors) towards the corresponding higher education institution. A survey between university heads (Hazelkorn, 2015) also reveals that they perceive rankings' influence on attracting partners for research and funding, recruiting personnel, students' employability, and relationship with the government. Also, they suggest that high positions in rankings can lead to the attraction of excellent students. Consequently, world university rankings set higher education institutions' benchmarks and allow stakeholders to compare them globally (Hou & Jacob, 2017).

Previous research suggests various factors that might affect the results of a university in the World University Rankings. Pietrucha (2017) study reveals that the size of the economy (total GDP) is more important than the relative wealth of the population (GDP per capita). However, the same study argues that universities' position in the rankings cannot be predetermined solely by GDP and GDP per capita metrics as other factors have significant predictive value. For example, the countries' growth (whether countries economy is based on knowledge and innovation), stability of political situation allows a smooth accumulation of human and social capital (Pietrucha, 2017), etc. A study by Clifford (2014) shows a significant positive relationship between the number of universities in the country that are recognized in WUR and GDP per capita, although the causation of the correlation is not clear (Clifford, 2014). Regarding internal specifications of universities, Marconi and Ritzen (2015) indicate that economies of scale and high expenditure per student predict success in the WUR. (Marconi & Ritzen, 2015).

This research project aims to understand the factors that impact the position of the universities in WUR. Both authors are affiliated with one of the leading universities in Latvia, where the government decided in 2020 to undertake a major reform to enhance the position of the universities in WUR. Given the abovementioned research, the authors have chosen to analyze universities' success in rankings based on country indicators as GDP, GDP per capita, and population. We have also analyzed key factors pertaining to the universities' internal composition as internal governance structures and overall university metrics (proportion of external, academic,

and research staff, student, technical, and administrative staff members on the board and the Senate, international students, students per staff).

The authors have concentrated the research in three rankings: QS World University Ranking, THE World University Ranking, and Academic Ranking of World Universities. These three are recognized as the most influential by a range of stakeholders (Adina-Petruta, 2015). The methodologies of Times Higher Education (THE), Quacquarelli Symonds (QS), and Academic ranking of world universities (ARWU) define the position of each university by deducting rankings from the sum of weighted indicators of crucial importance (Moed, 2017). It is important to note that although all three rankings which are used in this research measure indicators that can be categorized in 5 fields (teaching, research, mission, reputation, and internationalization), the weights are given to each differ, for example, ARWU system focuses more on research performance. Simultaneously, QS results are dependent more on reputation scores (Hou & Jacob, 2017). The methodology has split research, teaching, and citation outputs uniformly by assigning 30% weight to each (Adina-Petruta, 2015). Rankings have been criticized for using a narrow list of metrics to measure quality. EUA (European University Association) analysis indicates that a major proportion of rankings base the scores largely on research quality (including the ones who claim students – for whom research quality might not be a primary concern – as a primary target group) and reputation surveys (results of which are criticized for validity) (Loukkola et al., 2020). Recognizing the concerns described above but admitting that there is not a better option of a standardized benchmark, this research will use WUR as a point of reference for universities' overall success.

What is the role of university governance?
Trends in university internal governance

Competition between institutions becoming international, the emergence of new public management (NPM) practices, and neo-liberalism has led universities to become tools for economic development, being governed as privately owned entities, focusing on performance (Hazelkorn, 2015). The higher education ecosystem is one of the key pillars for tackling emerging economic and social challenges as the increasing globalization of education and job market, an extension of retirement age, and fast development of technology (OECD, Benchmarking Higher Education System Performance, 2019). Good governance is perceived as a crucial key element for higher education systems to become more effective, able to compete, achieve goals and attract students and scholars (van Vught & de Boer, 2015). Higher education institutions should have both long-term (related to governance) and short-term (processes for daily management) systems in place.

Otherwise, universities will lack strategic governance, which adjusts to new opportunities and helps to operate efficiently (Bratianu & Pinzaru, 2015).

Latvia, one of the last countries in Europe to undergo a substantial reform in universities' governance, has defined internal governance's main challenges. They are as follows: creating executive boards to ensure implementation of good governance principles, clear definition of governance bodies functions (including allowing external representatives to guarantee independence), and promotion of collaboration between academic and research staff with governance bodies to ensure relevance and quality of scientific and academic work.

Although universities in Europe have been mainly led by academics, which state governments have protected from external parties' involvement until the late 20th century, nowadays, reforms are reshaping governance by enhancing institutional autonomy and introducing corporate management strategies (Veiga, Magalnaes, & Amaral, 2015). The transformation of universities becoming corporate-like organizations (corporate universities), which are led by internal and external stakeholders, has given empowerment to boards, which are responsible for the design and implementation of the internal strategy (Veiga, Magalnaes, & Amaral, 2015). This change provides a shift from democratic councils to executive boards – reducing the time needed to make decisions and allowing to make more informed and efficient decisions (de Boer, Maassen, & Gornitzka, 2017).

University internal governance structures and stakeholder's involvement

As the complexity of higher education institution governance increases, the term "networked governance" is introduced, which explains the model where universities combine both – state supervision and active involvement of internal and external stakeholders. As a result, there is a compromise in the level of institutional autonomy (Jongbloed et al., 2018). The most important stakeholders in this context are students, academic and research staff of the university, and external stakeholders' representatives; however, their involvement in processes varies in different systems (Henard & Mitterle, 2018).

Researchers identify two governance models of European universities – unitary and dual governance models, with the latter being divided into two subcategories (traditional and asymmetric) (Pruvot & Estermann, 2018). The division between unitary and binary models can also be defined (Shattock, 2014). Pruvot & Estermann (2018) states that unitary model is observed in structures with only one governing body: either senate type (mainly responsible for academic decisions, a large number of members and with primarily academic personnel representation) or board type (being involved

in strategic and financial decision making, fewer members than senate type bodies). The dual governance model instead is characterized by division of responsibilities between governing bodies (senate body – academic affairs, board – strategy and finance); however, the dual asymmetric model tends to be controlled by the board-type body while also decision-making power is given for the senate-type body (Pruvot & Estermann, 2018).

Shattock (2014) states that, depending on the region, there are different understandings of the notion of terms "external stakeholder" and "collegiality." In Southern European countries, a shared governance approach is viewed negatively as an unwillingness to include external members in the governance. Their involvement is perceived as mere "emulation of business practices." However, in the United States and the United Kingdom, external parties are fundamental governance elements, while collegiality is understood as a collaboration between academic and external stakeholders. In continental Europe, countries prefer governance by dual structure – focusing on the collaboration of academic and non-academic parts involved in governance (Shattock, 2014)

Methodology and study framework (design)

Research method and design

This paper aims to answer the research question – **"What are the country and internal governance characteristics of European universities listed as top 800 in the world university rankings?".** The authors have run a quantitative study based on the application of descriptive research methods. In order to gather needed information, secondary data was collected from publicly available resources during the period February to April 2020. Results of THE World University Rankings 2020, QS World University Rankings 2020, and ARWU 2019 were used to identify a list of European countries with top 800 universities and the number of universities per country. For each country, data on total population, GDP per capita (current international dollars), and GDP (adjusted to purchasing power parity, international dollars) were collected from the World Bank Open Data database for the latest available year – 2018.

Research by the OECD (2013) provides evidence that macro-economic indicators impact climate in higher education, suggesting that although higher education is becoming increasingly global, the country's size might provide economies of scale and scope (OECD, 2017). To classify countries, United Nations (2019) report World Economic Situation Prospects uses the gross domestic product (GDP) adjusted for purchasing power parity (PPP) (United Nations, 2019). Pietrucha (2017) and Clifford (2014), in their university governance studies, also use GDP and GDP per capita

indicators (Pietrucha, 2017; Clifford, 2014). By combining methods applied in previously named studies, as the country-specific determinants, measures of gross domestic product (GDP) per capita or GDP adjusted for PPP and location of the country are used to provide the basis for selection of the countries to be analyzed in multiple sections of the research. To select criteria that define university internal governance and other general characteristics of the institution, two types of resources were adapted – previous studies on university governance and methodologies of world university rankings:

a) In the report, University Autonomy in Europe III, Pruvot and Estermann (2017) are using compositions of senate-type and board or council type bodies to analyze further the governance (Pruvot & Estermann, 2018). Pruvot and Esterman's research framework includes identifying governance bodies, their composition, and several different types of stakeholders (academic and research staff, students, external experts, and technical and administrative staff) with voting rights in each institution.

b) The methodologies of Times Higher Education Rankings 2020, QS World University Rankings 2020, and Academic Rankings of World Universities 2019 were reviewed, identifying three measures that are quantifiable and available for all universities – number of full-time students, percentage of international students, and students per faculty ratio.

Position in the world university rankings in our research framework is used as a dependent variable, which is perceived as a consequence of university internal governance structure and macro-economic environment (GDP). For further research, the authors suggest a wider range of independent variables that characterize higher education institutions and residence countries, such as political situation, funding, country-wide legislation, and university internal policies.

In order to define the overall position in the rankings, we have consolidated the position of each university in the three rankings – THE, QS and ARWU – by implementing *a university ranking indicator*. As Pietrucha (2017) suggested, to evaluate each universities' performance in the rankings, an indicator is to be created that assigns an overall value for each university, which is a sum of performance in all three rankings (Pietrucha, 2017). For example, universities, which were ranked from 1 to 100 in the rankings were assigned the value of 800, while universities being ranked from 501 to 600 were assigned a value of 300[1]. The values assigned by each ranking

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[1] As Times Higher Education WUR for universities being in the range from 600 to 800 in the ranking does not provide data with a precision of 100 places, the universities ranked in any of the rankings from 600th to 800th place were assigned with value 200.

to university were summed to make a university ranking indicator. A higher score means that the university is listed higher in the rankings.

When Pearson's correlation was performed, a portion of the variables was recognized as statistically significant; however, most showed relatively weak correlation (lower than $r = +/-0.5$). Other studies suggest that although correlations are weak, they can be analyzed due to the effects of time – in the long term, the effect of one variable on another can become more influential (Pietrucha, 2017).

Data sampling criteria

In order to define the sample of the research, we have followed two steps:

a) We have selected universities with residence in European countries with GDP or GDP per capita in the range of being two times higher or lower when compared with Latvia. We chose Latvia as a reference point as it is the country of residence of the authors' university and one of the last in European countries to undertake significant governance reforms. There were 138 universities listed in the WUR as top 800, which complied with this sampling criteria.

b) As data were collected from publicly available websites and documents, some universities were excluded from the final sample due to the unavailable data. Therefore, the final sample consisted of 97 universities. Ninety-seven universities from 17 countries were in the sample for in-depth analysis of university governance structure. The list included Croatia, Cyprus, Czech Republic, Estonia, Greece, Hungary, Iceland, Italy, Latvia, Lithuania, Luxembourg, Malta, Poland, Portugal, Slovenia, Spain, and Turkey.

Data analysis and clustering principles

In the first part of the research, we determined the university *ranking indicator,* which is described in the research methodology section. Further, this indicator was measured against country indicators (GDP and GDP per capita). Then correlation analysis was performed to test correlations between university performance in WUR (measured by *ranking indicator*), country-specific indicators (GDP, GDP per capita, and population), and internal governance structures (composition of the senate and board type bodies).

The second part of the research analyses the composition of the internal university governance structure in detail. In total, there were 97 universities from 17 countries selected by the criteria described in the sampling section. We have used K-means clustering to classify data in four groups by a total number of members in the board-type body (Cleophas & Zwinderman, 2015).

It has been proposed by Cleophas and Zwinderman (2015), and this method is valid if groups are expected to be in similar sizes. Four clusters were arranged (#1 – number of board members from 5 to 10; #2 – from 11 to 21, #3 – from 23 to 42, #4 – from 44 to 66). The same approach was used for clustering data regarding Senate type body composition.

To test the dispersion of data within each cluster, the variation (CV) coefficient or standard deviation divided by mean was calculated for each group. Also, measures of central tendency were compared in order to evaluate data distribution (see Appendix 1).

Results

Countries' success in the World University rankings vis-a-vis GDP indicators

The ranking indicator of each country was compared with residence countries' GDP and GDP per capita. As indicated above, the ranking indicator measures the residence countries' universities' success in the WUR by assigning higher scores to universities with higher positions in the WUR and *vice-versa*.

The comparison of GDP per capita ($) and GDP ($) to ranking indicator per universities located in the country is showed in Figure 1. It indicates that countries with higher GDP or GDP per capita do not necessarily have better rankings.
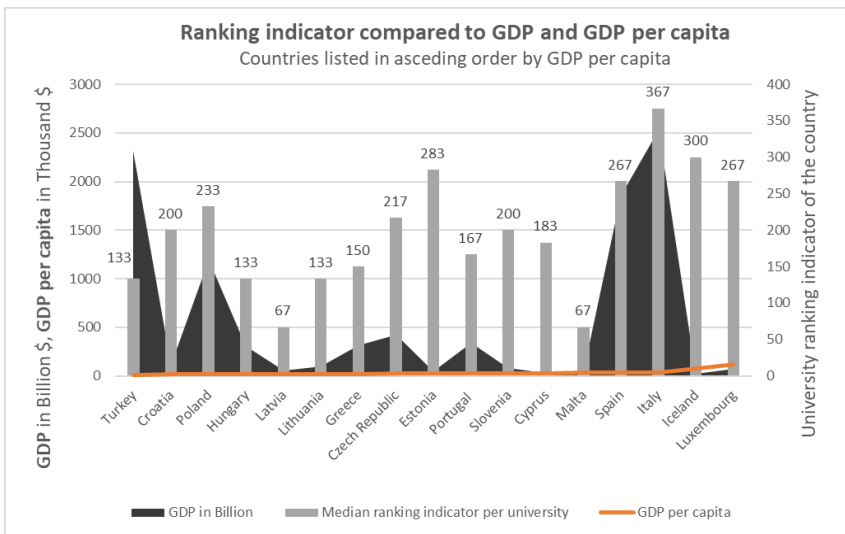
Figure 1. Median university ranking indicator per country compared to GDP (adjusted to PPP, $) and GDP per capita ($).

Neither GDP nor GDP per capita level predicts positions of countries' universities in the rankings. For example, Estonia, which is positioned in the middle of the list by GDP per capita, is ranked better than all eight countries having smaller GDP per capita; however, Estonia has a better average ranking per university than six countries with higher GDP per capita. Similar results were discovered when comparing ranking indicators with countries' GDP. For example, Iceland, which has the lowest GDP of all countries in the list ($20 billion), shows the ranking indicator of 300[2]. However, with a considerably higher GDP ($2310 billion), Turkey has a university indicator of 133 as most of its universities are positioned between 500 and 800, and universities are not included in more than two rankings. Latvia and Malta have the lowest ranking indicators as each country has only one university ranked in one ranking, plus their position is lower than 600. For further research, the authors suggest exploring a larger sample as in this research, only data from 17 countries were compared.

How university internal governance structures and success in rankings are correlated with residence country GDP indicators and population?

To test the linear relationship between country indicators (GDP, GDP per capita, population) and university internal governance structures and performance, Pearson's correlation test was performed. Results indicate that there is a moderate **positive relationship between GDP per capita and university ranking indicator of the country ($r = 0.440$, $p < 0.1$)**; therefore, it can be predicted that countries with higher GDP per capita might take higher positions and be ranked in more WUR. No significant correlation is found between GDP and ranking indicators.

Total GDP is negatively correlated with proportion of external members in the board ($r = -0.794$, $p < 0.01$) and has positive relationship with academic and research staff proportion on the board ($r = 0.617$, $p < 0.05$) and technical and administrative staff proportion in the senate ($r = 0.538$, $p < 0.05$). **Therefore, universities located in countries with higher GDP might include a fewer proportion of external members in the Senate and a higher proportion of academic and research staff in the boards and technical and administrative staff in the senates.** Also, **countries with larger populations have less proportion of external members in the board ($r = -0.669$, $p < 0.01$)**. However, it should be noted that

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[2] However, only the University of Iceland is included in the sample, and the total score is high as the institution is ranked top 500 in THE and ARWU rankings without any other local university.

the sample of universities included 27 universities from Spain, which has large GDP and a small proportion of external members on the board when compared to other countries in the sample. Full results of correlation analysis are compiled in *Table 1*.

Table 1. Pearson's correlation coefficient between country GDP indicators, population, and university indicators. Symbols "*" indicate statistical significance levels: *** (0.10), ** (0.05) and * (0.01).

	Median ranking indicator per university incountry	GDP adjusted to PPP in dollars	GDP per capita ($)	Population
GDP per capita	0.440***	–	–	–
External members on board%	–0.287	–0.704*	0.334	–0.669*
Academic & Research staff on board%	0.245	0.617**	–0.501***	0.604**
Technical & Administrative stadd on Senate%	0.583**	0.538**	0.496***	0.543**
Academic & Research staff on Senate%	–0.439***	0.041	–0.374	0.01

Characteristics of University Internal Governance Structures

Data about board-type body composition in 97 European universities reveal the number of total members ranging from 5 to 66. For senate-type bodies, the number of total members was in the range from 9 to 303. To analyze the data, universities were divided into clusters as described in detail in Appendix 1.

Results indicate that only ten universities of the sample do not have boards, and they are located in Latvia, Turkey, and Greece. 53% of the universities which have boards do not have more than 21 total members. Board-type bodies with 5 to 10 members have the biggest external members representation (41%) and are located in Slovenia, Hungary, Poland, and Italy. The proportion of external members in the board declines as the body's size increases. Full information is provided in Table 2. However, the proportion of academic and research staff representatives in the board increases as the body size becomes larger. Students are represented at a minimum of 9% and a maximum of 16% of the total board members. Technical and administrative staff in all clusters are the least represented members.

External members hold the majority of the mandates on boards of 11 universities, which are located in the following countries: Hungary, Poland,

Italy, Estonia, Luxembourg, Malta. For example, both Estonian universities (University of Tartu and Tallinn University of Technology) analyzed in this research had six external members of a total of 11. Twelve universities have included external members in the governance body in proportion from 40% to 50%. The majority of universities in the sample tend to include less than 40% of seats in the board for external members; however, a major part of the dataset is composed of universities in Spain, which have only 6% of external representatives on average board-type bodies.
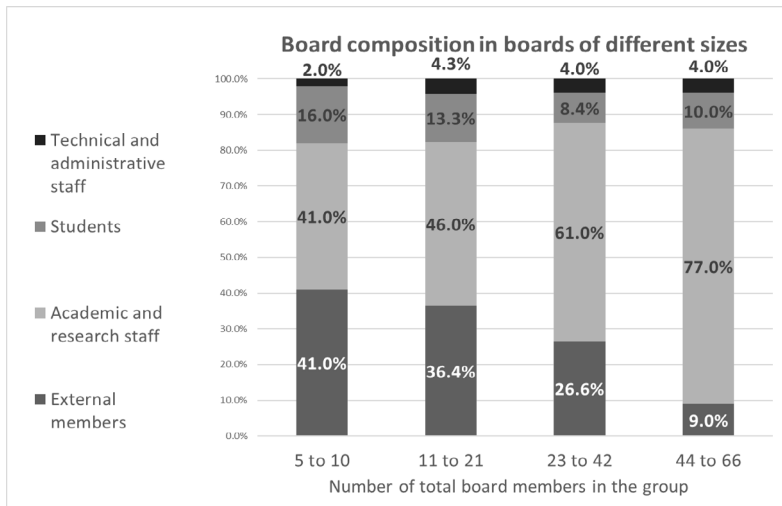
Figure 2. Board composition in boards of different sizes

Senate composition in universities analyzed in all three clusters is similar – academic and research staff in all cases holding majority mandates and technical and administrative staff – least. A full list of countries and their board and senate type bodies' composition can be found in Appendix 2.

Correlations between a number of different types of members represented in the board-type internal governance bodies

To test whether there are linear relationships between variables of internal governance bodies, Pearson's correlation is used. Bermig and Frick (2010) use the same method to test the correlation. Between boards' sizes and effectiveness (Bermig & Frick, 2010). In this research, correlations are tested between:

a) Measures of effectiveness: datasets of number of full-time students, number of international students, students per staff ratio, ranking indicator.

b) Boards' sizes: total board members, total senate members, board and Senate compositions in percentages (proportion of external,

academic, and research staff, technical and administrative staff, and student representatives).

Akoglu (2018) suggests that the level of correlation (strong, moderate, or weak) varies by research field; however, by reviewing multiple sources, correlation of 0.31 to 0.6 is accepted as moderate, higher being strong and lower weak (Akoglu, 2018).

The correlation model shows no two variables with a strong significant linear relationship; however, some of the indicators have moderate. Appendix 3 includes a full correlation analysis. Number of international students have moderate positive relationship with students per staff ($r = 0.314$, $p < 0.05$) and also ranking indicator ($r = 0.304$, $p < 0.01$). External members on the board have a positive relationship with many international students ($r = 0.304$, $p < 0.05$). It is also expected that universities with more international students will have a higher representation percentage of students in the Senate ($r = 0.404$, $p < 0.01$). A negative relationship is detected between the percentage of students on the board-type body and senate-type body ($r = -0.396$, $p < 0.01$), showing that universities that include a higher proportion of students in the Senate are expected to involve less proportion in the board and vice versa.

Conclusions

The research's main goal was to analyze the impact of internal governance and characteristics of the country of residence on universities' performance in world university rankings. We have studied European-based universities ranked top 800 in three of the most popular world university rankings (THE, QS, and ARWU). Ninety-seven universities were analyzed in-depth; they were located in 17 countries. As factors that might characterize universities, the following were chosen – GDP, GDP per capita and population of the residence country, number of students, the proportion of international students and students per staff, university internal governance characteristics – board and senate size and composition. We offer the following concluding research highlights:

· Previous studies have opposing views on GDP indicators' influence on universities' ability in the country to succeed in WUR. Some argue that higher total GDP contributes to creating economies of scale and providing more financial resources, while others argue that these indicators leave more impact on research-intensive universities. This study found that GDP per capita might have a positive relationship with countries' ability to score higher in world university rankings. However, the sample studied of universities in Europe reveals that countries with lower GDP per capita exceed others. For example, Estonia was found to

have better median results on rankings than six countries with higher and eight lower GDP per capita.

- The literature reviewed advises that decision-making in universities must be shifted from academic staff to executive boards that are responsible for the university's strategy and reassure that external members are involved. Findings indicate that university internal governance characteristics vary across institutions; however, some similarities can be found regarding governance bodies and the proportion of members included. A shared characteristic is found regarding the governance board's existence – only 10% or ten universities from the sample do not have board-type bodies; they are in Latvia, Turkey, and Greece.

- This research indicates the importance of the implementation of board-type bodies with external members representation in university internal governance structures as 90% of the universities in this study is governed by boards. Research also found a negative relationship between the proportion of external members on the residence country's board and GDP, indicating that countries with larger GDP might include fewer external members in the board-type bodies. This finding can be interpreted as a signal for countries with smaller GDP (as our residence country – Latvia) to include a larger proportion of external members in the university boards. Estonian universities analyzed in this research are an example of this approach – having majority external members representation in the board and achieving a high score in the World university rankings.

- Linear solid relationships are not recognized between variables representing internal governance and general university characteristics; however, there are significant moderately strong relationships, which can have a greater impact in the long term. These results indicate that there are no factors of internal governance of universities that influence the institution's success significantly more than others; however, as moderate relationships between variables exist, it is concluded that these factors have influence as a whole over a long period of time.

Limitations

For further developments of the research, the authors suggest widening the scope of the governance indicators chosen for the analysis as there are other factors characterizing university governance apart from governance body structures. This research was performed for the sample, which consisted of 97 universities located in Europe and countries with similar GDP indicators as for Latvia; therefore, larger sample size is needed to make conclusions about all the top 800 universities governance. Also, the authors suggest that in further research, a wider spectrum of indicators

characterizing countries might be used to choose the universities by residence countries to be included in the sample.

University internal governance is investigated from an institutional structure perspective, not considering other issues related to effective governance, for example, transparency, voting rights of the executive, state regulations, etc. As country-describing indicators, GDP per capita, total GDP, population, and location are selected, while these are not the only measures that characterize the country and might influence the position in WUR. The study also includes three university rankings – THE, QS, and ARWU – reflecting universities' success in these WUR, although there are more rankings. Data has been collected from multiple websites and documents that are either in English or automatically translated into English from another language; therefore, there is the possibility of human error in entering or reading data.

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The coefficient of variation is a measure of the dispersion of the dataset; a lower ratio is interpreted as a measure of smaller variance in the dataset (Wong & Wu, 2002). Brown (1996) explains that the coefficient of variation is expected not to exceed value 0.3 to indicate the normal dispersion of data (Brown, 1996). As for all four clusters, coefficients of variation were small – data is not overdispersed in any of the samples. Also, there are no significant differences between the mode, median, and mean of each cluster. Therefore, four clusters, selected by k-means clustering, are analyzed separately.

Clusters of board-type bodies

	Group 1 (5–10 members)	Group 2 (11–21 members)	Group 3 (23–42 members)	Group 4 (44–66 members)
mean	8	12	34	54
median	9	11	33	53
mode	9	11	31	53
standard deviation	1.89	2.65	6.25	6
Coefficient of variation (CV)	0.24	0.21	0.18	0.11

Clusters of senate-type bodies

	Group A (9–35 members)	Group B (40–150 members)	Group C (199–303 members)
mean	25	63	276
median	25	50	296
mode	29	50	300
standard deviation	7.5	29.13	33.06
Coefficient of variation (CV)	0.31	0.46	0.12

Appendix 2

	Nr. of board members in the cluster	Nr. of universities in the cluster	Countries represented in the cluster
Cluster 1	5–10	21	Slovenia, Hungary, Poland, Italy
Cluster 2	11–21	25	Iceland, Cyprus, Estonia, Luxembourg, Lithuania, Croatia, Portugal
Cluster 3	23–42	14	Malta, Portugal, Czech Republic, Spain
Cluster 4	44–66	27	Czech Republic, Spain
No board	–	10	Latvia, Turkey, Greece

	Nr. of senate members in the cluster	Nr. of universities in the cluster	Countries represented in the cluster
Cluster A	9–35	37	Estonia, Luxembourg, Czech Republic, Turkey, Luxembourg, Italy, Cyprus, Slovenia.
Cluster B	40–150	28	Latvia, Malta, Slovenia, Lithuania, Croatia, Hungary, Poland, Czech Republic, Turkey, Greece, Spain, Italy.
Cluster C	199–303	24	Spain
No Senate		9	Iceland, Portugal

Appendix 3

	Full_time_students	Students per_staff	Intern-ational_stud	Ranking_indicator	Total_board	Exter-nal_B%	Acad res_B%	Students_B%	Tech_admin_B%	Total_senate	Acad_res_S%	Students_S%
Full_time_students	1											
Students_per_staff	0.402***	1										
International_stud	-0.245*	-0.296*	1									
Ranking_indicator	0.292*	-0.052	0.122	1								
Total_board	0.071	-0.278**	0.070	-0.053	1							
External_B%	-0.189	-0.092	0.304**	-0.150	-0.709	1						
Acad_res_B%	0.199**	-0.064	-0.138	0.038	0.805	-0.854	1					
Students_B%	0.112	0.314**	-0.313**	0.304*	-0.260**	-0.228***	-0.183***	1				
Tech_admin_B%	-0.108	0.081	-0.154	-0.133	0.195	-0.325*	0.042	0.191***	1			
Total_senate	0.123	-0.322*	-0.025	-0.033	0.801	-0.733	0.765	-0.079	0.269***	1		
Acad-res_S%	0.155	0.510	-0.329*	-0.218***	-0.585	0.449	-0.574	0.102	-0.004	-0.494	1	
Students_S%	-0.238	-0.588	0.404*	0.122	0.476	-0.079	0.308*	-0.396*	-0.076	0.328*	-0.885	1
Tech_admin_S%	0.091	-0.064	-0.008	0.295*	0.315*	-0.635	0.505	0.389*	0.144	0.530	-0.606	0.196

CONDITIONS FOR EFFECTIVE TEACHERS' PROFESSIONAL DEVELOPMENT IN A SCHOOL AS A LEARNING ORGANIZATION

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ABSTRACT

Changes in the structure of the labor market determine new needs for further education and actualizes lifelong learning as a precondition for sustainable development of the whole society. This means that in general education in Latvia, new learning outcomes are defined, which refer not only to the curriculum, which students have to learn at school, and learning approach which is used for educational purposes, but also for the objectives of teachers' professional development. The context of societal changes also determine different models for school governance, transforming schools into learning organizations, where effective teachers' professional development is one of the most important characteristics of that kind of organization.

The aim of the qualitative research conducted by the author is to find out what are the preconditions for effective professional development of teachers, transforming a school into an effective learning organization. Within the framework of the research, an analysis of the scientific literature has been performed, defining criteria, the implementation of which can increase the efficiency of teachers' professional development and promote the development of the school into an effective learning organization. Within the framework of the research, 2 focus group discussions have been conducted with 8 teachers' professional development experts in Latvia in order to find out the opinion of which professional development criteria mentioned in the scientific literature could have the greatest impact on teachers' performance in working with students. The *Delphi* method has been used to obtain qualitative data, the method of qualitative content analysis has been used for data analysis, and the collection of expert opinions has been performed using the method of interpretive phenomenological analysis.

The data obtained in the research show that the effectiveness of teachers' professional development is increased by the autonomy of teachers to choose what learning content they want to acquire and what kind of learning activities they want to attend; linking the study content with the specifics of a particular subject; availability of feedback and opportunities for reflection during professional development; learning from outside expertise and good practice; regularity of learning and long-term learning, as well as the opportunity to learn inside the school through formalized system of professional development and methodological support.

Keywords: *efficiency, learning organization; professional development; teachers*

Introduction

Since 2016 the development of a new national curriculum has begun in Latvia, the implementation of which has started in 2020, envisaging a gradual transition to the implementation of the competence based approach in the learning process. "The goal of the improved curriculum and approach is a skilled student who wants and is able to learn throughout life, is able to solve real life problems, create innovations, develop various personality traits that help to develop happy and responsible personalities" (Skola2030, 2017). Along with the change in the content and approach of teaching, the question of how to organize the professional development of teachers has become topical so that the changes initiated at the national level are successfully implemented and students and teachers can reach the results set by the national standard.

Another important aspect of educational change in Latvia is related to how school management is organized and what role should be given to the professional development of teachers. The competences based teaching and learning approach expects schools to be managed according to the principles of effective learning organizations, providing the necessary conditions and resources for teachers to learn from each other, to plan curriculum and to analyze their own and colleagues' teaching and learning practices. In addition, teachers are expected to be provided with individual support in defining their professional development needs based on a variety of lesson performance data (Namsone et al., 2018).

The aim of the research conducted by the author is to find out what are the preconditions for effective teachers' professional development, transforming the school into an effective learning organization. The research question is also defined – the implementation of which professional development preconditions can increase the efficiency of teachers' professional development at school as a learning organization. The focus of the study has been chosen so that the results of the study can be used both by school leadership teams, organizing a system of methodological support and professional development in schools, and by teachers more purposefully defining their professional development needs.

School as a learning organization

The school as an effective learning organization is characterized by a clear mission, vision and values that focus on students' learning outcomes and educational experiences; continuous professional development of teachers and the school leadership team; expanded school influence in the local community; formation of cooperation teams and their effective operation inside and outside the school; creating a culture of innovation

at school; implementation of learning leadership and effective systems for the acquisition of collective knowledge and experience between teachers (OECD, 2016).

The learning organization is a practice that provides schools with a structure and internal culture that is open to change and fosters innovation through lifelong learning (Santa, 2015). As a learning organization, the school defines common goals and creates a collaborative learning environment; individual and collective initiatives and risk-taking for change are encouraged; all aspects related to the operation of the school are regularly reviewed and evaluated; examples of good practice are recognized and strengthened and opportunities for further professional development of teachers are provided (Silins et al., 2002).

Schools that are organized by the principles of a learning organization better adapt and cope with external changes, foster a culture of change and innovation in the school, improve professional performance and job satisfaction of teachers and school leaders, and promote student learning (Kools, George & Steijn, 2020).

In the context of the transformation of the school governance model, the concept of learning community is used alongside the learning organization, which is similar in content but emphasizes the role of community and interrelationships in the successful functioning of the school (Stoll & Kools, 2017). The learning community has a clear vision for its students; collective action in the form of community efforts to question the status quo in an organization, to try out new practices and reflect on the results achieved; collaborative teams that aim to increase the professionalism of each teacher by learning from good practice; action orientation in the form of learning through active participation and social interaction between stakeholders; continuous professional development, in which teachers evaluate their current practice and work to improve their professional performance; orientation on outcomes, which means clearly defined learning goals and quality criteria according to which progress will be measured (DuFour & Eaker, 1998; DuFour, 2006).

Criteria for effective teachers' professional development

The success of educational reforms is influenced by the professionalism and openness of teachers to change, because without motivation and proactive involvement in shaping and managing the content of change, reforms in education and school sector will not be possible and will fail (Borko, 2004; Clark & Gokmenoglu, 2015). Teachers' individual competence, professionalism and personal motivation determine how effectively reforms in the education sector are ensured and how high the students' learning achievements in this reform will be (Boeskens, Nusche & Yurita, 2020).

Therefore, effective in-service teacher training aimed to improve teachers' professional performance is a prerequisite for making school an effective learning organization.

The author of the study, by analyzing the sources of scientific literature, has summarized the criteria, the implementation of which can directly or indirectly increase the effectiveness of teacher professional development, meaning the impact of in-service teacher training on student performance (see Table No. 1 for a list of criteria). The criteria for effective in-service teacher training cover a wide range of aspects related to the content of in-service teacher training, the learning approach chosen, as well as the planning of in-service teacher training and the development of a methodological support system at school.

Table 1. Criteria for effective teachers' professional development in a school as a learning organization

Criterion	Annotation of criterion
1. Linking the study content with the content of the subject	Teachers acquire knowledge and skills that directly contribute to improving the performance of a particular subject, such as teaching methods and strategies for better content delivery, rather than general knowledge of teaching principles (Desimone, 2009, 2011; Wei et al., 2009; Darling-Hammond, Hyler & Gardner, 2017)
2. Active participation of teachers in the learning process	Teachers have the opportunity to learn from the previous experiences of themselves and other colleagues. They have the opportunity to systematically reflect on their experiences and discuss with colleagues to form a new collective experience (Darling-Hammond & McLaughlin, 1995; Desimone, 2009, 2011; Darling-Hammond, Hyler & Gardner, 2017).
3. Collaborative learning	Teachers are learning with other colleagues by engaging in conversations and discussions about their previous experiences and performance in the classroom. The school has a system for identifying examples of good practice and sharing knowledge within the organization. Professional knowledge and collective understanding are constructed as a result of teacher collaboration and interaction (Desimone, 2009, 2011; Darling-Hammond, Hyler & Gardner, 2017; Namsone et al., 2018).
4. Learning from the good practice	Teachers learn from examples of good practice by observing lessons led by other colleagues and then discussing what they have seen. It is therefore important for teachers to know the criteria for professional performance according to which they can evaluate their performance in lessons (OECD, 2009; Darling-Hammond, Hyler & Gardner, 2017).

Criterion	Annotation of criterion
5. Reflection on previous professional activities	The school has a system for teachers to reflect on their professional performance, learning content, methods and teaching approach, for example, through self-assessment of their activities, creating a portfolio, etc. The school organizes individual and collective reflection on teachers' professional performance (Desimone, 2009, 2011; Darling-Hammond, Hyler & Gardner, 2017; Namsone et al., 2018; Weston & Clay, 2018; Roessger, 2020).
6. Methodical support system in school	Teachers are provided with mentoring and coaching and the opportunity to participate in communities of practice, where teachers work together to find solutions to identified problems and discuss the results in order to learn from their own and other colleagues' experiences (Darling-Hammond & McLaughin, 1995; Walter & Briggs, 2012; Namsone et al., 2018).
7. Availability of feedback for teachers	Teachers receive constructive feedback on their performance according to previously defined performance criteria. Teachers identify weaknesses in their performance and set goals for improvement to support student learning (Darling-Hammond, Hyler & Gardner, 2017; Namsone et al., 2018).
8. Long-term learning	Teachers acquire similar curricula over a longer period of time in order to strengthen their knowledge and skills, to delve into the content issues addressed, to receive the necessary methodological support and to put them into practice (Darling-Hammond, Hyler & Gardner, 2017; Namsone et al., 2018).
9. Availability of resources for teacher learning	The school devotes time and financial resources to provide opportunities for teachers to learn, for example by providing paid working hours during which teachers can participate in in-service training outside the lesson planning and classroom management (Walter & Briggs, 2012; Cleaver et al., 2019).
10. Regularity of learning	Teachers learn regularly so that they have the opportunity to learn new content – teaching methods, strategies, etc. – to test them in practice and to evaluate their impact on the teachers' performance and learning outcomes for students (Namsone et al., 2018).
11. Transfer of the acquired content to professional practice	Teachers systematically use and practice the acquired learning content in their work with students. The school has a system for organizing and ensuring the transfer from teacher learning to everyday practice (Weston & Clay, 2018; Brion, 2020).

Continued from previous page

Criterion	Annotation of criterion
12. Teacher participation and autonomy in the choice of curriculum and learning format	Teachers have the opportunity to choose for themselves what content they need and how they will learn it. Teachers exercise "ownership" and autonomy in their professional development (Walter & Briggs, 2012; Patton, Parker & Tannehill, 2015).
13. Collection of data on teachers' professional performance	The school collects a wide range of data on teacher performance, such as observing and analyzing lessons, conducting individual growth interviews with teachers, surveying parents and students, etc., to define teachers' actual professional development needs (DuFour & Marzano, 2011; Fullan & Hargreaves, 2012; Lazdiņa et al., 2021).
14. Planning of professional development in school	The school has a clear, data-driven goal to improve teacher performance in the classroom. This is reflected in school planning documents, such as development plans, self-assessment reports, etc. The professional development activities in which teachers participate directly support the achievement of the set goals (Walter & Briggs, 2012; Lazdiņa et al., 2021).
15. Coherence of teacher professional development with other aspects of change in the school	Teachers learn the content, which also helps to achieve other goals defined by the school. The school has a rationale for how teacher-acquired learning content helps the school to become a more effective learning organization (Darling-Hammond & McLaughin, 1995; Wei et al., 2009).
16. Elements of functional and attitude improvement in the professional development	Teachers not only learn functional content (new teaching methods, strategies and approaches) but also experience an increase in attitudes and beliefs (teachers learn content that broadens their horizons in education, improves personal effectiveness, motivation, and changes or strengthens professional beliefs) (Evans, 2008).
17. Assessing the impact on students' learning results	The school assesses and verifies whether and how the content of learning in professional development activities improves the quality of students' learning and helps them to achieve learning outcomes (Weston & Clay, 2018).
18. Use of outside expertise and good practice	Teachers have the opportunity to learn from professionals outside the school, not only from the teachers in other schools, but also from experts in other fields. In this way, teachers identify current issues and needs in the education sector to make appropriate changes in their practice (Korthagen, 2004; Walter & Briggs, 2012).
19. In-service learning	The context of each school is unique, so teachers learn in the real working environment, analyze real learning situations and look for solutions to everyday school-related problems (Marsick & Watkins, 1990; Billett, 2004; Eraut, 2007; Cleaver et al., 2020).

Continued from previous page

Criterion	Annotation of criterion
20. An example of school leadership in a process of continuous professional development	The school leadership team participates in the training sessions, initiates in-service training activities for teachers and demonstrates the practical application of learning. School management engages in setting professional development goals in relation to broader organizational development goals and demonstrate leadership (Cheng, 2017; Bilbokaite et al., 2020; Lazdiņa et al., 2021).
21. The use of formal and informal learning	Formal or traditional teacher learning – participation in conferences, seminars, lectures, workshops, etc. – is supplemented by informal learning, for example, participation in teacher cooperation groups, observation of lessons, mentoring, acquaintance with the latest pedagogical literature, etc. (Fraser et al., 2007; Vaessen, van den Beemt & de Laat, 2014; Wohlfahrt, 2018).

Methodology

The *Delphi* method was used to obtain qualitative data for the study. It is used in the form of structured discussions with experts in the field to find out their views and to reach a possible consensus on issues related to the research problem (Grime & Wright, 2016). Experts in the negotiations are selected on the basis of their previous professional experience and in-depth knowledge of the subject, and usually between 5 and 20 experts in the field (Rowe & Wright, 2001).

Within the framework of the qualitative research carried out by the author of the research, 2 focus group discussions were conducted with 8 teachers' professional development experts in Latvia. Their aim was to find out the opinion of experts, which of the criteria for effective teachers' professional development mentioned in the sources of scientific literature could have the greatest impact on the performance of teachers in lessons and, consequently, on the formation of the school into an effective learning organization. The focus group discussions took place on 1 April and 6 April 2021 online on the Zoom platform.

For the data analysis experts were coded to the following logic – notation F1 was used for experts from the first focus group discussion, notation F2 was used for experts from the second focus group discussion. Notation E and the number from 1 to 8 was used to recognize concrete expert. In the focus group discussions participated Edīte Sarva, educational methodologist of Limbaži State Gymnasium (expert F1E1); Inese Vilciņa, "Skola2030" expert in curriculum development (expert F1E2); Laima Geikina, professor at the

University of Latvia (expert F1E3); Inga Pāvula, senior expert of "Skola2030" (expert F1E4); Edīte Kanaviņa, head of the Education Department of Gulbene Region (expert F2E1); Dana Narvaiša, head of the Competence Center of the educational company "Lielvārds" (expert F2E2); Anda Priedīte, principal of Mežciems Primary School (expert F2E3); Evija Slokenberga, Jelgava State Gymnasium education methodologist (expert F2E4).

Experts for participation in the focus group discussions were selected, taking into account the direct relevance of their job responsibilities to the planning and implementation of in-service teacher training, not only within their own organization but also at a wider regional or national level. Thus, for example, several of the discussion participants work in State Gymnasiums, which, in accordance with the regulations of the Cabinet of Ministers, are responsible for implementing the functions of the regional methodological center and providing professional development opportunities for teachers on a wider regional scale (Cabinet of Ministers, 2020). The choice of experts was also related to their current or previous participation in the implementation of the project "School2030", which emphasizes the need to implement a personalized and in-service training system for teachers in Latvia.

Prior to participating in the focus group discussion, the experts were sent the material prepared by the author on each of the criteria for the effective teachers' professional development (see Table No. 1), about which the experts will be invited to comment during the discussion. Due to the wide range of content discussed in the expert discussion, 2 separate discussions were organized instead of 1, thus providing an opportunity for each expert to express his or her views on the role of these criteria in improving the effectiveness of teacher professional development.

The opinions of the experts were summarized using the principles of qualitative content analysis. It is a method of data analysis that involves the systematic and objective selection of qualitative data according to defined research categories. The aim of qualitative content analysis is to reduce the amount of qualitative data obtained in the research, so that it can then be described and interpreted in accordance with the research questions (Schreier, 2014). The author of the study has compiled the opinions of experts using interpretive phenomenological analysis. It is a method that accepts the personal perceptions and experiences of the individuals involved, including the researcher, in relation to the chosen social phenomenon being studied. Thus, the research emphasis is on an in-depth understanding of individuals' personal experiences rather than on finding out objective, all-encompassing truth (Dunworth, 2011).

Results

Although opinions of experts differ on which criteria for effective teacher professional development have the greatest impact on teacher performance in the classroom, there are a number of criteria on which the impact is unanimous.

Teacher participation and autonomy

Experts agree that there is a balance needed between the principle of compulsory and voluntary teachers' professional development. On the one hand, it is necessary to allow teachers to choose for themselves what and how they are going to learn in professional development activities, as this promotes motivation and makes learning more important personally. On the other hand, the school has an important common goal for all the teachers to pursue in the professional development.

> F1E1: *"In our school, we have set a goal for the professional development of teachers that is binding on all teachers, but we have let them to choose themselves the way how they are going to achieve that goal."*

In this way, the principle of compulsory and voluntary learning is balanced, as teachers are given the opportunity to study with other teachers in school-organized training activities. At the same time, however, the choice of teachers to pursue the goal set by the school in a different way is accepted, demonstrating the example that the goal can be achieved in a variety of professional development formats.

With regard to the idea of autonomy in the context of in-service teacher training, experts point out that teachers must be able to define their own learning needs while taking responsibility for their implementation. This attitude is due to the fact that within the school as a learning organization, it provides an opportunity to create an individual development plan tailored to each teacher, according to current performance and the results of continuous professional development.

> F2E2: *"Every teacher needs to answer a number of questions before participating in the process of professional development, such as what I want to achieve and learn as a professional; where I am currently facing the goal; how do I know that I am right there; how do I get from where I am to where I want to be."*

Link with the content of the subject

Experts of focus group discussions point out that an important precondition for effective professional development of teachers at school is the direct link between the curriculum acquired in in-service training activities and the content of the subject taught by the teacher. This means

that teachers need to acquire knowledge and skills that they will be able to use immediately in teaching their subject in order to reduce the cognitive load that may arise when they are planning how to transfer the acquired learning content to everyday practice.

> F1E1: *"Professional development certainly has content that should be learned by all teachers in the same school, for example about in-depth learning or lesson structure, but teachers' ability to transfer the content they have learned to the context of their subject is limited. Teachers can learn more and are more willing to use the knowledge they have learned during professional development activities if the content is related to the specific subject the teacher is teaching."*

The implementation of this criterion increases the speed with which the acquired learning content is implemented in practice in order to achieve improvements in the teacher's performance working with students. In addition, it reduces teachers' skepticism and internal resistance to change, as well as the belief that the content to be learned is important and practicable.

In relation to this criterion, experts agree that in situations where teachers are learning content related to their subject, the transfer is already taking place during the learning process, so teachers may not spend extra time thinking about how they could use the content they have learned during the professional development activities.

> F2E4: *"The teacher must be primarily a professional in the field and must know the content of the subject. However, he must also be aware of the teaching methods and techniques that are most effective in teaching a particular subject."*

Providing access to such knowledge and skills in the context of professional development strengthens teachers' confidence that the content they acquire can improve students' learning outcomes and achieve teachers' learning goals for the students.

The role of feedback and reflection

Teacher professional development experts emphasize that a prerequisite for teacher growth is the opportunity to receive a quality, immediate and practical feedback on their performance in lessons.

> F2E2: *"Teacher learning is about giving, receiving, analyzing and talking about feedback on a regular basis."*

It is the feedback on a teacher's professional performance that can help to improve the teacher's performance in class, as it strengthens understanding and the confidence in the desired practice and provides specific, experiential recommendations for improving professional performance. In the context of teacher professional development at school as an learning organization, it is important to implement alternative learning practices, such as lesson

observation between teachers, lesson observation by school administration, teacher learning groups, etc., as this provides more reflection and feedback for teachers.

Experts also emphasize that teachers learn from their personal and other professionals' previous experience, so reflection is an important criterion for the effectiveness of professional development. At the same time, however, it is pointed out that this is difficult to do, as *"teachers often feel anxious when offered various reflection questions"* (F1E2). This means that teachers' ability to reflect on their professional performance and past experience is a skill that needs to be strengthened in particular to enhance teachers' ability to assess and justify *"why I do it, how do I get it and how I know I get it"* (F2E4).

The use of external expertise and good practice

The experts of the focus group discussions point out that both learning from good practice at school and using external experience and expertise are important preconditions to rise the effectiveness of teachers' professional development, thus expanding teachers' access to new knowledge and experience that can change their attitudes and beliefs about the changes inside the school.

> F1E4: *"In situations where teachers learn from other types of experience available, such as in private companies, NGOs, schools and elsewhere, there is changes happening in teachers' values and beliefs."*

This is important to transform the school into an effective learning organization, where the exchange of information between teachers and other stakeholders in the education process, such as researchers, entrepreneurs, etc. provide teachers with access to the knowledge gained in these organizations and use it to improve their professional practice. Given that not all the necessary experience and expertise is always available to teachers in the school, there is a need to learn from good practice outside the school, for example through exchange visits to other schools and organizations already at the next level of growth, especially in cases where learning from good practice is difficult on the ground, for example due to the small size of the school.

Regularity of learning and long-term learning

Experts point out that teachers need time as a part of their professional development activities to update their previous experience and plan the use of the learning content in working with students. Therefore, regularity and duration of the learning are important criteria for effective teacher learning. This means that for teachers it is necessary, individually or together with other teachers, to learn similar content over a longer period of time, for example throughout the school year. Teacher learning cannot be

a campaign activity, usually in the form of a one-off attendance at courses or seminars. Effective teacher learning is when it takes place on a regular and systematic basis and time and financial resources are allocated to its implementation.

> F2E4: *"It's better to learn to do one professional thing thoroughly than to break it down, and as a result you can't say exactly what you have learned as a teacher."*

Regularity of learning and implementation of professional development over a longer period of time provides an opportunity for teachers to practice the acquired knowledge and skills, as well as to effectively implement the transfer of the acquired learning content to the professional practice in working with students.

> F1E3: *"If a teacher does not apply the acquired knowledge and skills in practice, there is no learning cycle and new motivation to continuously improve the professional performance."*

In a school as a learning organization, it is important to think about the system for transferring learning content from in-service training to real work situations in order to improve the teacher's long-term performance in teaching and to strengthen motivation and confidence in the practical usefulness of in-service training.

Conclusions

The discussions of experts allow to conclude that all the criteria for the effectiveness of teachers' professional development mentioned in the scientific literature are important and can have a positive impact on the teacher's performance in working with students. This means that the effectiveness of teachers' learning can be increased by combining all the above mentioned criteria into a unified further education system at the school. However, in the conditions of limited intellectual and financial resources in which schools operate in Latvia, it is important to think about which criteria within the system of teachers' professional development could create greater impact, as the development goals of the school, the role of the school in the local community and teachers' previous learning experience differs.

The professional development of teachers is a fundamental precondition for the successful transformation of a school into an effective learning organization. What kind of teacher professional development activities are implemented in the school, what professional support the school leadership provides to its staff, what diverse data is collected to evaluate the school's performance and define future development needs directly determine the school's mission, vision and values. The mechanisms for teacher

co-operation in the school will be implemented and the degree to which the school will be open to change will create an innovative organizational culture aimed at improving students' learning outcomes and experiences. Therefore, at the national and local level in Latvia, it is necessary to develop the support system for schools, how to promote efficient, high-quality and goal-oriented professional development of teachers.

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ATTITUDES OF ENGLISH STUDENTS WHOSE SKILLS ARE PEER-ASSESSED

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ABSTRACT

Peer-assessment (PA) has been used in all study cycles for over three decades. In foreign language classes, for example, it has mostly been applied to assess writing rather than other skills. However, this study focused on PA of oral skills and aimed to learn about university students' attitudes towards their experience of being peer-assessed in their English classes online during the pandemic when PA was used as a way of formative assessment (the grades suggested by peers were not a part of final course grades).

The study involved 49 Vytautas Magnus University (VMU) students (Lithuanians) studying general English at upper-intermediate level online in 2021. They were first and second year (first cycle) students aged 19 to 20. The research was both qualitative and quantitative. It used online PA forms, which the students who were assessors filled in anonymously to evaluate their peers' oral production, and an online questionnaire with open and closed questions that the assessees filled in after they had received anonymous feedback from their peers.

The study showed that over 70% of the students liked it when their oral production was assessed by their peers. It seemed to be an interesting activity for them. Yet, they raised many concerns about PA. Some of them believed PA was not accurate and their peers did not put much effort into it. They also thought their peers lacked experience in PA. They emphasised that their teacher was more experienced and objective and thus should assess their skills rather than peers.

Keywords: *being peer-assessed, English as a Foreign Language, oral skills, peer assessment, university students*

Introduction

Peer assessment (PA) has been used in education for quite some time. However, different terms have been invented to refer to it, as it is also known as "peer feedback, peer evaluation, and peer grading" (Double et al., 2020, p. 482). The way it has been and currently is perceived in different cultures and even by individual teachers might also differ greatly. Some educators employ exclusively summative assessment, because they

believe that only a teacher can and/ or should assess student performance, while some others, and, in fact, more and more, see PA as an alternative form of assessment (e. g. Meletiadou, 2012), "an innovative method" (Meletiadou, 2012, p. 240) or a "complementary way of testing in foreign language assessment" (Carrió-Pastor, 2016, p. 61) that is useful in their classes for a variety of reasons (assessment of particular skills is only one of them). Thus, there is a need to look at what PA is and how it is described. Musfirah has defined PA as follows: "Peer assessment is an evaluation done by a peer [assessor] to their classmates [assessees] in an activity [in order to evaluate its quality]. After getting feedback given by their own peers, students are expected to improve their linguistic performance" if it is a language class (2019, p. 68). However, it may be that the students who are assessors rather than assessees gain more from PA, as they can learn from the mistakes made by others (Cheng and Warren, 2005, Jung, 2016). For instance, they may improve their own oral presentations or get ideas of what not to do during their presentations that await them eventually after the presentations done by their peers. On the other hand, the role of assessors is quite challenging, as it is more difficult to assess spoken rather than written production, as students cannot return to what has been said. Thus, assessees may have concerns considering the assessment and feedback given by their peers. Friendships may play a role as well, as students whose peers attend the same class may be assessed better in terms of the skills they demonstrate in a particular task. Yet, learning from peers can be seen as useful for both assessors and assessees (Phuong Quynh, 2021), as among various advantages PA also promotes student collaborative learning (Ubaque Casallas and Pinilla Castellanos, 2016).

PA has widely been advocated to use in different educational contexts (Double et al., 2020, p. 481). The reason for this is the fact that PA can be seen as one of the ways to implement "educational assessment and learner-centred education" (Birjandi and Siyyari, 2010, p. 23). PA can be "used more in the teaching environment to help both teachers and learners achieve their outcomes sufficiently" (Phuong Quynh, 2021, p. 297), since PA "provides learners with the opportunity to take responsibility for analysing, monitoring and evaluating" their skills and learning (Cheng and Warren, 2005, p. 94). In terms of the English as a Foreign Language context, which is the focus of this article, PA has been frequently used to assess written production (Double et al. 2020, Phuong Quynh, 2021). Nevertheless, the study to be discussed in further sections of this paper focused on spoken production that was peer-assessed in an EFL classroom online. As PA involves students who are assessors and students who are assessees, it is pertinent to point out that the study to be discussed focused only on assessee experience of being peer-assessed, as it aimed to learn

their attitude towards PA in terms of their oral presentation skills that were assessed by peers of the same EFL class. All the assessees (as well as assessors) were Lithuanian students of English at upper-intermediate level at Vytautas Magnus University (VMU) in Kaunas, Lithuania, but their classes were delivered online due to the coronavirus pandemic that was continuing at that time.

Even though PA has many benefits, the study to be discussed had some concerns that had been addressed in earlier research on PA of other skills. For example, in the study by Musfirah it is pointed out that students may not look at the assessment procedure seriously and see PA as a form of entertainment or even evaluate their friends better than they should (2019, p. 71). In addition, based on students' previous experience they may think that only their teacher should assess other students' performance (Musfirah, 2019, p. 71), thus the students may have a negative attitude towards PA. Moreover, some students may feel it is not fair that their peers are their assessors, especially if the grades they give have effect on the overall course or assignment grade(s) (Phuong Quynh, 2021, p. 299) or, from their point of view, the level of assessors' English proficiency is low (Cheng and Warren, 2005). Nevertheless, PA in the study to be discussed was used as a means of formative, not summative assessment, so students were not given actual grades that would have effect on the overall final grade of the course. The students had been informed about this in advance.

Methodology

Studies on PA usually focus on the experience of students who assess their peers' performance and certain skills, especially writing skills in various foreign languages. However, little is known how students whose skills are peer-assessed feel about such assessment. Thus, this study attempts to fill in the existing research gap. It focuses on assessees' attitudes towards PA of speaking skills in an EFL classroom online in 2021. It was a class of Lithuanian students of general English at upper-intermediate level (B2) at VMU. In it, English levels are obligatory to all students to study until they reach level C1/C2 proficiency.

49 students took part in the research. Most of them were female students (75%), while others (25%) were male students. Most of them were first (35.4%) and second (60.4%) year students in bachelor's degree study programmes, while others were third and fourth year students. They were mostly 19 (33.3%) to 20 (39.6%) years old, but 18.8% were 22 or older, while the rest of the sample were either 18 or 21.

PA was implemented during one week of presentations (on Monday, Tuesday, Thursday and Friday). Each student was an assessee once that

week. The students had been familiarised with presentation requirements and evaluation criteria in class at the beginning of the semester and given around seven weeks for preparation. They knew their pronunciation, grammar, vocabulary, speaking rather than reading from notes and ways of engaging their audience during their presentation would be assessed.

The study employed the following tools:

- *Anonymous PA forms online* (criteria set by the Institute of Foreign Languages for all upper-intermediate level of English presentations). Students who listened to presentations filled in the forms on their mobile phones or computers during their peers' presentations. Both assessors and assessees were familiarised with the forms at the beginning of the semester and assessees were able to prepare based on the indicated criteria.

- *Anonymous post-presentation questionnaire online* that the students who were assessees filled in in order to reflect on their experience of being peer-assessed and the feedback they received from their peers based on the evaluation forms online. The collected feedback was sent as MS Excel documents to each presenter (assessee) by their teacher at the end of the presentation week after everyone had presented.

The post-presentation questionnaire that the assessees filled in consisted of two parts: one focused on the students' demographic information, while the second part included five questions on their experience and attitude towards being peer-assessed in their EFL class in terms on speaking during the week of presentations. The main questions were the following:

- Did you like it when you were assessed by other students? Yes/ No. Explain your answer in the box below.
- Would you want your peers rather than the teacher to evaluate your presentation? Yes / No. Explain your answer in the box below.
- Based on PA, would you do anything differently in your presentation in the future? Yes / No / Maybe. Explain your answer in the box below.
- Do you think you assessed your peers fairly? Yes / No / I don't know. Explain your answer in the box below. (assessees became assessors after their presentation and assessed their peers' speaking skills as well)
- How do you feel about the grades your colleagues gave you? Explain your answer in the box.
- Should students assess their peers? Yes / No / I don't know. Explain your answer in the box below.

As the study was both quantitative and qualitative, it received a variety of data that needed to be generalised. Therefore, thematic analysis was used in order to discuss open-ended answers received through the questionnaire.

Results and Discussion

71.4% of the participants liked being assessed by their peers. As demon-strated in Figure 1, only 28.6% of them were not happy about such an experience.
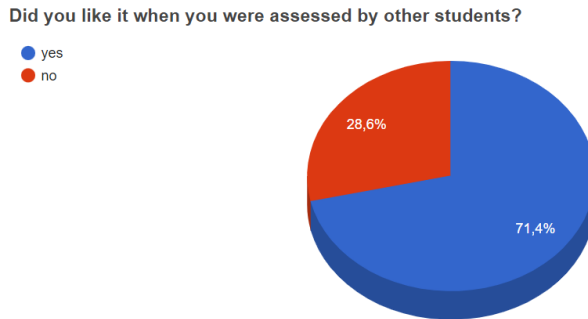
Figure 1. Students liked being peer-assessed

Their reasons could be put into the following categories that dominated in student responses:
1. They thought their peers had not put much thought/ effort while assessing their performance.
2. PA may not be accurate.
3. Peers do not have as much experience in assessment as the teacher does.
4. PA made the students feel uncomfortable because they knew they were being peer-assessed.

Therefore, these concerns should be discussed before PA is implemented in any activity or a class (not necessarily related to a foreign language), for example, while providing training on PA. However, as indicated above, the majority was happy to be peer-assessed. The main reasons they indicated in the provided box in the questionnaire were these:
1. It was a new experience.
2. It was interesting to see how others saw their performance and get many opinions.
3. Students could learn about their mistakes and know what was not clear to their peers.
4. Students could learn about their strengths and weaknesses from their peers.

On the other hand, even though over 70% of the students liked being peer-assessed, they would not like their peers to give them real grades (77.1%). This time they knew that PA would not have effect on their grades,

even though assessors were able to provide such grades in the evaluation forms, which they filled in, but it seems that assessees would not like their peers to suggest or give such grades in general. The assessees were asked to explain why they thought so. Their answers (the language of open-ended student answers here and elsewhere in the paper has not been corrected) were to some extent similar to those that they provided while explaining why they did not like PA: "the teacher is the more qualified expert in assessing students" R. 1 (research participant no. 1), "Because students don't have a right to do that" (R. 3) or "because other students would not be assessed as accurately as by the teacher" (R. 9). The reasons, which were provided by the assessees, why they would not like to get grades from their peers could be grouped like this:

1. The teacher is more competent than peers.
2. The teacher is a specialist/ professional and should assess.
3. The teacher is objective, while students may evaluate their friends better than they should.
4. Students may give lower grades to their peers out of jealousy.

In other words, most of the reasons (3 out of 4) for wanting the teacher to assess students' skills rather than peers were related to the role of the teacher in an EFL classroom. EFL teachers are seen as competent specialists who are objective, can spot mistakes better because of their proficiency in English and thus should carry out assessment rather than students who lack experience in PA and English skills. This is in line with the results of Musfirah's study (2019) and consistent with further findings of this study. Even though this study was about students' experience of being assessees, they were asked to indicate if they believed they had been fair assessors themselves when they performed that role (see Figure 2 below), which had been thought to explain possible results while constructing the questionnaire for the study.

Do you think you assessed your peers fairly?

- yes
- no
- I don't know

35,4%

12,5%

52,1%
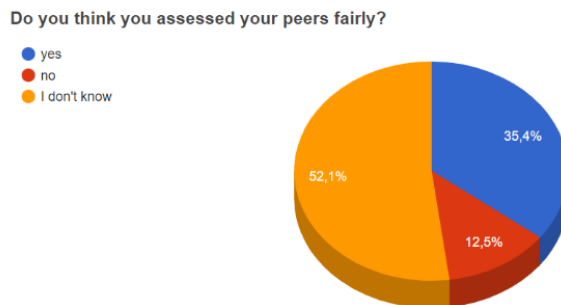
Figure 2. Students who were assessees thought they had been fair assessors

In fact, more than a half of the students (52.1%) indicated they did not know if they had assessed their peers' oral skills fairly earlier and 12.5% said they had not. Consequently, it is not surprising that they felt they should not be given grades by their peers, since they felt they probably had not given accurate grades either when they had assessed the skills of their peers. Yet, peers were able to suggest grades even if they were not taken into account by the teacher. The assessees were usually happy about them, because the grades were good or very good, but the assessees agreed that the grades given by their peers were better than they should have been, so they had not expected to see such grades and thus did not look at them seriously. Despite the high grades suggested by peers, it is possible to say that the assessees liked being peer assessed as long as peer grades were not included in the overall course grades.

Even though the assessees would not like to get grades from their peers (even if they are good), they would probably take into account their comments, as they appreciated them. 54.2% of the assessees said that based on PA they would do some things differently in their presentations in the future. They indicated that they would spend more time on their presentation in the future, put less text in their slides and focus more on the correctness of language in their speech (grammar in particular). Open-ended answers show that quite many assessors indicated in their feedback that their peers should improve their speaking skills, thus assessee comments in the questionnaire included such phrases as "I have to improve my speaking skills" (R. 13), "I would improve my speaking and try to involve the audience more" (R. 16), and "I saw that I have some problems with speaking, so I will try to improve it" (R. 27). In other words, peer comments are seen as helpful in terms of improvement in presentations or similar activities in the future.

33.7% of the students indicated that they "might" do some things differently. As they had studied modals of low possibility earlier in the course, they probably chose this answer intentionally to reflect on the fact that either they were not sure they would do something based on the PA and feedback they had received or to indicate there was a low chance they would take PA into account. Only 12.5% of the participants were straightforward about not being interested in the feedback received from their peers in any way. Here are some explanations why: "Because I do not believe in peer evaluation" (R. 1); or "I rely on the teacher's assessment" (R. 2). In other words, once again the role of the teacher as an assessor is pointed out.

In relation to the previously discussed study findings, it is probably not surprising that not all students who were assessees believed oral production (or language skills in general) should be assessed by their peers. The number of those who said they should was 47.9%. However, 35.4% of

the assessees did not have an opinion, and 16.7% said students should not assess their peers in any way. Thus, as noted above, even though over 70% of the assessees liked being peer-assessed, only 47.9% thought students should do PA, which is rather strange. Those who said "yes" mostly provided comments similar to the following one made by R. 4: "because it's interesting and important to know other people's opinion about your presentation." However, those who expressed an opposing view once again focused on the role of the teacher as a specialist in the field who is the only one to assess. Therefore, students' opinions, insights and feedback did not matter to them.

The study was limited in the sense that it involved quite few students and only the experience of assessees, not both assessee and assessor experience. Nevertheless, as a case study, it provides valuable insight that could be taken into account by EFL and other foreign language teachers while implementing PA in their classes for formative assessment or other purposes.

Conclusion

After being peer-assessed, not many students thought their peers should assess their skills even though a lot more of them liked being peer-assessed as long as PA did not affect their overall course grades. Consequently, more information and training should be provided to students before employing PA in order to address not only various formal requirements related to PA of particular skill(s) but also student concerns related to objectivity, fairness, purposes of PA in an EFL or other classroom, and benefits of PA.

It is also pertinent to address the issue of the role of a teacher in the twenty-first century EFL classroom. Students still see their teacher as asole provider of knowledge and evaluation, but students should become aware that they could contribute in their EFL classes in many ways as well. Therefore, the value of student opinions and feedback should be given more attention and appreciation in an EFL classroom in general, not only when PA is implemented. This would be beneficial for independent student learning and at the same time reduce stress while learning from their own and their peers' mistakes.

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FOREIGN LANGUAGE TEACHERS' ACTIVITIES TO DEVELOP STUDENTS' DIGITAL CITIZENSHIP COMPETENCES: FINDINGS OF THE DICE. LANG PROJECT

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ABSTRACT

The extreme situation connected with the outbreak of the pandemic coronavirus has forced foreign language teachers worldwide to challenge their teaching competences and approaches when teaching remotely. Now, more than ever, foreign language teachers are forced or encouraged to implement digital materials, learning objects and environments. Meanwhile, foreign language teachers' knowledge, skills and attitudes related to Digital Citizenship Education (DCE) are tested and challenged, too.

The aim of this paper is to explore how confident and knowledgeable about DCE foreign language teachers are in order to offer activities that can enhance the development of language learners' digital citizenship competences. This study presents the survey findings of the ERASMUS+ project: "Digital Citizenship Education and Foreign Language Learning" (Dice.Lang), which brings together five European partner universities: University of Munich, University of Aveiro, University of Latvia, University of Limerick, and Siena Italian Studies. There were 627 foreign language teachers (312 pre-service teachers and 315 in-service teachers) in total who participated in the online survey representing Germany, Ireland, Italy, Latvia, and Portugal. The findings highlighted the needs foreign language teachers have to develop and apply their expertise on DCE in their language lessons.

The authors of the paper present their vision to address the teachers' needs, providing and analysing samples of a comprehensive set of open educational resources (OER) available in English and additional European languages. These OER, which have been designed by the Dice.Lang consortium and confirmed by the questionnaire results, aim at developing langua-ge learners' digital citizenship competences. The resources intertwine the five DCE strands created by the consortium (Critical Digital Literacies; Intercultural and Transcultural Perspec-tive on Digital Exchanges; Identity-oriented Component; Content-oriented Perspective and Critical and Meta-reflective Component) with the existing European theoretical frameworks.

Keywords: *Digital Citizenship Education, digital competences, digital literacies, foreign language teachers, language education, open educational resources.*

Introduction

The world is in continual change influenced by different events that are happening globally and are having an impact on the different spheres of individual lives. In 2020 the world suffered a devastating health crisis originated by the Covid-19 pandemic, together with an energy crisis that has been reaching unsustainable levels especially since the start of war conflicts in the East of Europe. The rise of populism in Europe and elsewhere, issues related to the global North and South divide, and the ideal of a fairer world are also examples of the realities people are experiencing in this current time. In the education domain, things have also been impacted by what is happening globally. A clear example of this is how the pandemic forced educators worldwide to test their teaching competences and approaches when teaching remotely.

Thinking about the role of education within this global situation, Sjur Bergan (2021), the former director of the Education Department in the Council of Europe, refers to the role of schools and the extension to the role of education stating that "more than prepare somebody for the future, schools must empower learners to shape the future". It is in this context that Digital Citizenship Education (DCE) has emerged as a supranational priority, as strongly affirmed through recommendations issued by the Council of Europe. DCE, as it can be interpreted, seeks to empower younger citizens to participate actively and responsibly in a digital society and to foster their digital skills effectively and critically. Clearly, all of these are closely related to the four digital citizenship (DC) dimensions that Choi (2016, p. 584) references in carrying out a concept analysis of DC, covering *inter alia*: digital ethics, media and information literacy, critical resistance and participation and engagement.

In order to facilitate the implementation of DCE in curricula across Europe, subject-specific solutions are required which, at the moment, are still severely lacking. Teaching digital citizenship helps ensure that students are successfully practising both respect and responsibility for themselves and others in a digital environment. Digital citizenship supports users to participate safely, critically, effectively, and responsibly in the world of digital technologies (Ollivier, 2022) while developing a set of capabilities and behaviours that exploit the opportunities the digital world affords and create resilience to potential disadvantages. It is essential to develop the competencies and skills needed to exercise one's democratic rights in a digital society, since "digital citizenship is seen as an indicator of political participation, and social media promotes citizens' digital civic participation and engagement in several communities" (MINDtheGaps, 2019, p. 7). Equally, there is still a "lack of awareness among educators

of the importance of digital citizenship competence development for the well-being of young people growing up in today's highly digitalized world" (Frau-Meigs et al., 2017, p. 9).

Dice.Lang – Digital Citizenship Education and Foreign Language Learning – is a three-year transnational European Erasmus+ Strategic Partnership (KA203) project aiming at strengthening the profile of Digital Citizenship Education within the foreign language context by providing pathways into educational resources, professional development, and policy updates. The project entails a consortium of experts from five European universities and research centres. The aims of the project consortium are to support (pre-service and in-service) language teachers in the process of acquiring those skills necessary to engage critically in the multilingual digital society while learning to implement them into their classes.

The Dice.Lang project aligns with other European projects such as the Linguanum project (https://www.linguanum.eu/projet) and the Pensa project (https://pensa.univ-amu.fr/en). The Linguanum project provides pedagogical training for language teachers who want or need to teach with digital technology and a guide for students showing how informal participation in participatory sites in the target language can help develop language skills and digital literacy/citizenship. The Pensa project focuses on the need for training and infrastructure to deliver blended, distant and/or co-modal teaching during the pandemic and on the need to educate young people on the implications in the use of social networking websites at psychological, sociological, economical, and ideological levels. Based on the number of projects that currently are dealing with DCE, it could be argued that digital citizenship has become a fundamental concept of many teaching and learning processes in the current world (Choi, 2016; Jæger, 2021). Therefore, the Dice.Lang project is interested in how pre-service and in-service foreign language teachers are dealing with their understanding and awareness of digital citizenship, and how they are including it in their teaching practices. Drawing from this, the authors of this paper address and discuss the following research questions:

1) how confident and knowledgeable foreign language teachers are in offering activities that can enhance the development of language learners' digital citizenship competences;
2) what the teachers' needs are when it comes to Digital Citizenship Education and how this is addressed in the project working framework and open educational resources.

Firstly, the discussion is tackled by presenting the methodology and the results of a survey conducted among foreign language teachers to assess their knowledge and confidence when it comes to DCE. The findings from the survey highlighted the needs foreign language teachers have to develop

and apply their expertise on DCE in their language lessons. To address these needs, a set of educational resources has been developed by the Dice. Lang consortium, offering pedagogical materials for teachers to use in their language classes. In the later sections of the paper, the authors contend how the Dice.Lang framework takes into account the aforementioned needs, provides and analyses samples of a comprehensive set of open educational resources (OERs) available in English and additional European languages. Both the survey needs analysis and the resources intertwine the five DCE strands of the framework created by the consortium (Critical Digital Literacies; Intercultural and Transcultural Perspective on Digital Exchanges; Identity-oriented Component; Content-oriented Perspective and Critical and Meta-reflective Component) and the existing European theoretical frameworks issued by the Council of Europe: "Digital Citizenship Education. 10 Domains" (2018), "Reference Framework of Competences for Democratic Culture" (Barrett et al., 2018) and "DigComp 2.2: The Digital Competence Framework for Citizens" (Vuorikari, Kluzer, & Punie, 2022).

The Dice.Lang Framework

The Dice.Lang project is working on developing a framework that provides competence descriptors to implement DCE in the context of Foreign Language Education. The working framework entails 5 key strands: Critical Digital Literacy; Critical and Metareflective Components; Content Oriented Perspectives; Identity Oriented Component and Inter and Transcultural Perspectives on Digital Exchanges (see Figure 1).
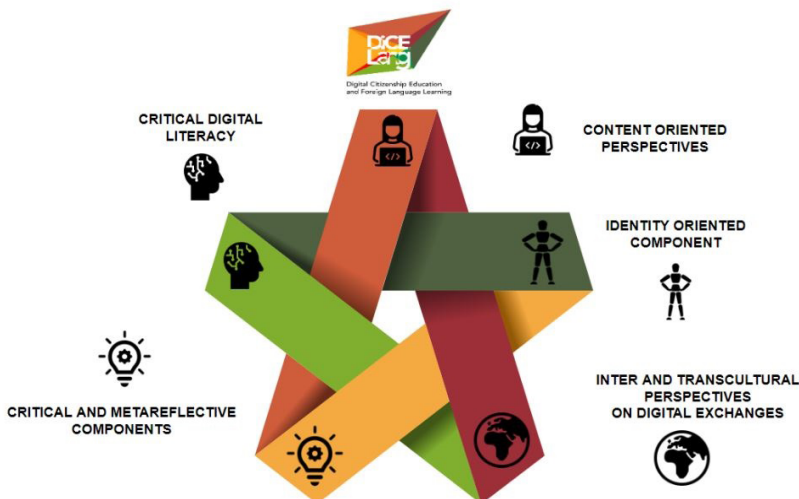
Figure 1. The Dice.Lang Working Framework

The first strand focuses on Critical Digital Literacy (CDL) which refers to a set of capabilities and analytical viewpoints that empower learners to participate fully in the digital world while understanding, interpreting, managing, sharing and creating digital content. The second strand, Critical and Metareflective Components, refers to critical thinking skills and reflecting attitudes that allow learners to become competent in the digital world through an understanding of its complexities, how people relate to digital media and how the constant immersion into the digital world shapes its users. The Content Oriented Perspectives addresses the learners' ability to engage effectively and critically with current topics and issues presented on digital media while finding their own presence and position. The Identity Oriented Component focuses on the learners' awareness of both their real and digital identities with respect to their near-constant online presence. Finally, the last strand entitled Inter and Transcultural Perspectives on Digital Exchanges refers to the need of raising awareness on the importance of cultural encounters in the digital world in order to understand and support inter and cross-cultural differences/similarities as well as promote relationships across cultures to negotiate and exchange worldviews as global-digital citizens.

Methodology

Conducting a survey was a part of the chosen research method exploring how confident and knowledgeable foreign language teachers are to offer activities that can enhance the development of language learners' digital citizenship competences. The authors also aimed to find out the fundamental needs of in-service and pre-service foreign language teachers in order to introduce DCE related topics in their language lessons, thus identifying the underlying reality of the teachers' needs for DCE related thematic lesson plans as OER. The online questionnaire was designed in LimeSurvey. com and made by Likert-type and multiple-choice questions. This paper analyses questions about foreign language teachers' online activities in hours per week and per 40-hour work week; sources of information foreign language teachers explore and foreign language teachers' opinion on their confidence to teach and develop particular skills in foreign language lessons. Following Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data (Official Journal of the European Union, 2016) and the approval of the Research Ethics Committees of the Dice.Lang project partner universities, the validated questionnaire was distributed by the project consortium.

The research sample consisted of 627 foreign language teachers in total (312 pre-service teachers and 315 in-service teachers) from Germany, Ireland, Italy, Latvia and Portugal who completed the online questionnaire. Respondents were chosen randomly from foreign language in-service and pre-service teachers. Figure 2 gives a detailed overview on the participants in the survey. 244 respondents were from Germany, 146 were from Portugal, 121 were from Latvia, 76 were from Italy and 40 were from Ireland. The largest group of respondents were from Germany, 39% of all.
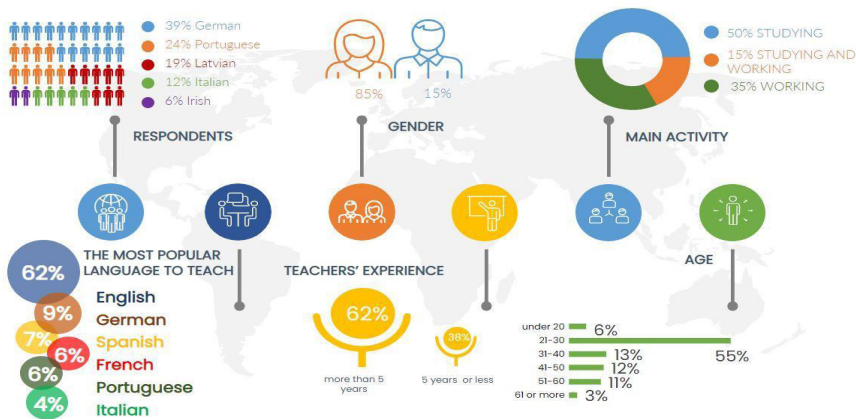
Figure 2. Profile of the Dice.Lang Survey Participants ($N = 627$)

Among the respondents there were mostly English in-service teachers ($N = 235$), followed by German teachers ($N = 37$) and Spanish teachers ($N = 33$). Other in-service teachers indicated other languages that they taught: French, Italian, Portuguese, Russian, Latvian, Latin, Irish and even Mandarin. Also, the majority of pre-service teachers studied to become English language teachers ($N = 283$), followed by future German ($N = 35$), Spanish ($N = 26$) and French ($N = 22$) language teachers. Consequently, the authors of the research identified the key target languages for developing further OER.

To characterise the respondents, there were 50% of pre-service teachers who were still studying towards their degree and career in foreign language teaching, 15% of respondents already worked in schools, and 35% of respondents were in-service foreign language teachers. The main age range of the respondents was 21–60 years of age (55% for ages 21–30; 13% for ages 31–40; 12% for ages 41–50; 11% for ages 51–60). Among the respondents there were 62% of in-service foreign language teachers who had more than 5 years of in-service experience, the other 38% of respondents had experience of 5 years or fewer. Countries with the most experienced teachers among the reached respondents were from Italy and Portugal.

Data collection was done in spring 2020 when there was a global out-break of Covid-19, school closures and lockdowns. Pre-service and in-service foreign language teachers' knowledge, skills and attitudes related to the implementation of digital materials, tools and environments were tested and challenged due to emergency remote teaching and learning circumstances. Teachers were also invited to respond to questions about how to enhance the development of language learners' digital citizenship competences while being online and consuming digital content excessively.

Results

Descriptive statistics were used to describe the elicited data, exploring the frequency distribution and central tendency within the collected pre-service and in-service foreign language teachers' responses in the online questionnaire. First, the authors of this paper analysed the question of how often the respondents performed various online activities (see Table 1). The respondents indicated their engagement in online activities in hours per week, reporting the frequency of time devoted to working, consuming information, communicating and socialising all online. In particular, they reported on their online research exploring further and in-depth aspects and issues on DCE that could be addressed and tackled in their foreign language lessons together with learners as a part of their language practice.

Table 1. Foreign Language Teachers' Online Activities in Hours per Week ($N = 627$)

Activity	Never	1–5 hours per week	6–10 hours per week	11–20 hours per week	21–40 hours per week	41 or more hours
Consuming information	3	118	185	129	116	43
Working	41	79	97	137	155	77
Communicating	4	171	146	113	92	56
Researching	8	223	175	116	44	11
Socialising	18	203	158	94	56	20
Sharing digital content	36	202	102	43	28	2
Creating/producing/ developing digital artefacts or content	93	220	91	49	26	2
Learning	92	209	71	58	25	4
Playing	271	112	42	21	12	7

The obtained data showed that foreign language teachers spent between 11 hours and more per week working online (59% of the respondents), consuming information online (46% of the respondents), and communicating online (42% of the respondents). This could indicate the reality of the pandemic period when study, school internship and emergency remote teaching and learning were forced to happen in the digital space entirely, if not for most of that time. In comparison with the other activities online, the respondents pointed out that they spent less time researching, creating and developing digital artefacts and content, sharing digital content and learning independently as the majority devoted less than 5 hours per week to these online activities. Apparently, foreign language teachers' professional habits of working and networking online are regular and strong.

The authors of the paper used the survey data to create an image of an average foreign language teacher and their online activities in hours per 40-hour working week (see Table 2). As a result, it was discovered that an average foreign language teacher out of the 40-hour work week devoted 9.6 hours to working online, 7.3 hours to communicating online, 6.5 hours to consuming digital information, and to spending around 4 hours on socialising and researching. Clearly, there is a certain impact of Covid-19 pandemic that has contributed to such an image of a teacher's work week activities.

To find out the respondents' established practices when researching and collecting ideas for their foreign language lessons, the language teachers were asked to specify those sources of information which they examined and consulted in their lesson planning process in order to introduce certain online and digital resources.

Table 2. Hours an Average Foreign Language Teacher Spends in Online Activities per 40-Hour Work Week ($N = 627$)

Activity	Hours
Working	9.6
Communicating	7.3
Consuming information	6.5
Socialising	4.4
Researching	4.0
Learning (e. g., using a language learning apps)	2.5
Sharing digital content	2.4
Creating/producing/developing digital artefacts or content	2.3
Playing	1.0

To answer the question: "Where do you search for information about the content and teaching methods to teach using online and digital resources in the language classroom?", the respondents could choose among the listed sources, for example, specialised websites, virtual databases and libraries, resources shared by professional associations, networks and their community of practice, including teacher professional development courses, social media and informal networks, e. g. in *WhatsApp* or *Messenger*.

Figure 3 shows that in general most foreign language teachers look for information in specialised websites, use teacher professional development courses and consult platforms created by their government to build expertise on various DCE related topics. Slightly fewer foreign language teachers use virtual libraries, virtual databases, social media and community of practice as places to find information for their language lessons. Furthermore, network groups on social platforms (e. g., *FaceBook*, *Instagram*) and podcasts are the least used by respondents. The respondents of every partner country indicated a similar tendency of the most popular sources of information, online and digital resources to be implemented in their language lessons. With reference to these findings, the authors of the paper and the project consortium had a greater and increased awareness of the sources of information that should be included in the open education resources for the community of foreign language teachers.
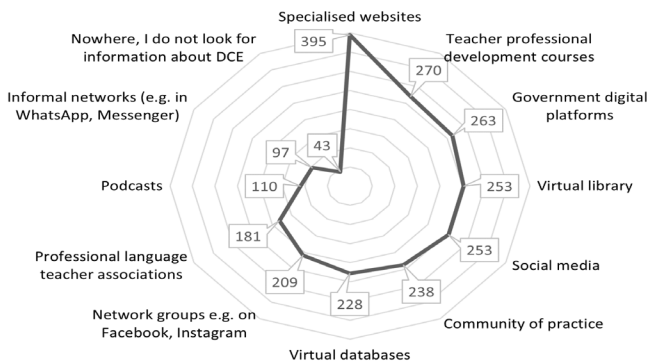
Figure 3. Sources of Information Foreign Language Teachers Explore (*N* = 627)

Linking foreign language teachers' independent exploration of various sources of information to their teaching practices, the authors aimed to discover how confident and knowledgeable foreign language teachers are to offer activities that can enhance the development of language learners'

digital citizenship competences. The responses to the following question were analysed: "To what extent do you feel confident when providing opportunities to develop the following skills in your foreign language lessons?" The skills for consideration were presented to the respondents (see Table 4) to be measured in the Likert-type scale: "Not confident at all", "Slightly confident", "Confident", "Very confident". Table 4 demonstrates the pre-service and in-service foreign language teachers' responses indicating the Likert-type scale response anchors "Slightly confident" and "Confident".

Table 4. Foreign Language Teachers Opinion on Their Skills They Feel Confident or Slightly Confident to Teach ($N = 627$)

Pre-service Teachers	Skills to Teach	In-service Teachers
93%	Listening and observing skills	81%
91%	Empathic skills	68%
87%	Communicative skills	87%
81%	Cooperation skills	68%
75%	Flexibility and adaptability skills	65%
66%	Autonomous learning skills	66%
61%	Conflict-resolution skills	55%
60%	Analytical and critical thinking skills	67%
55%	Plurilingual skills	51%

To teach with confidence is the aim of any professional either just looking forward to entering the profession as it is in the case of pre-service teachers or being already in the profession as a developed in-service teacher. Foreign language teachers design their lessons to involve receiving and processing the input of various types in the target language, offering activities for aural reception (listening), visual reception (reading) and audio-visual reception. Thus, it is true that teachers should feel confident or slightly confident to teach listening and observation skills that are essential components for digital citizenship competences, too. Another key set of activities is related to production, spoken and written, and combined modes of communication. Both pre-service and in-service foreign language teachers reported their confidence or slight confidence in teaching communicative skills and cooperation skills, as any interaction is fundamental in learning and in real world (online and offline) communication (Council of Europe, 2018).

When communicating and collaborating in the class activities to practise the foreign language, empathy is essential. This highlights the need to

be an active listener, with curiosity to explore the opinion of their peers in pair work, group work and teamwork. Whilst at the same time, interpreting a presented message correctly and adequately, clarifying ideas, and when needed, also resolving conflicts. Apart from that, such activities aim to promote the development of self-awareness, identity and extensive knowledge of oneself as any mode of communication enables one to discover personal values, emotions and behavioural patterns. Therefore, the foreign language teachers' confidence to foster the development of conflict-resolution skills, flexibility and adaptability skills to manage and facilitate collaborative interactions with peers should be considered. Again, they can be used in conjunction with the help of action-oriented activities which can contribute to the classroom practice of both foreign language and the previously listed skills.

Furthermore, online interaction has become an inevitable component of the foreign language learning process, especially in the context of the respondents' experiences of remote emergency teaching and learning. Indeed, the need for teacher professional competence to teach and introduce learning strategies that promote the development of learner mediation skills emerged more than ever during the Covid-19 period. Recently, as a support for foreign language teachers the Common European Framework of Reference (CEFR) was created, containing descriptors on online interaction and mediation in levels (Council of Europe, 2018) that assist teachers in selecting language learning activities that are appropriate to their learners and their language level. What is more, learning in online environments has opened the door to linguistic and cultural diversity thus the need for language users' plurilingual skills should be stressed, too. With reference to the CEFR (Council of Europe, 2018, p.157), plurilingualism "promotes the need for learners as 'social agents' to draw upon all of their linguistic and cultural resources and experiences in order to fully participate in social and educational contexts, achieving mutual understanding, gaining access to knowledge and in turn further developing their linguistic and cultural repertoire". As the responses of respondents show, although foreign language teachers indicate a considerably high confidence in teaching the skills already discussed above and thus enhancing also the development of language learners' citizenship and digital citizenship competences, to reach pre-service and in-service foreign language teachers' greater or complete confidence in this area, their specific needs should be addressed. These findings encouraged the project consortium to consider various opportunities to contribute to these teachers' needs with support, OERs with samples of lesson plans where the particular skills are addressed and a specialised website for further professional development and networking.

Discussion

To start the discussion, the authors relate some of the survey results with the Dice.Lang framework and how the framework takes into account foreign language teachers' needs within the provision of DCE. Concurrently, and drawing from the conceptual framework, the OERs developed by the Dice.Lang project consortium provide pedagogical materials for the development of digital citizenship vis-a-vis with foreign languages, in other words, authenticity for digital communication in the foreign language using different technology.

On the one hand, the survey results show that teachers are quite confident using technology, they explore online sources of information, research online and create digital artefacts or content. On the other hand, the survey shows results that indicate that foreign language teachers do not feel very confident or are not used to including into their language lessons the critical analysis component. Hence, criticality is essential in critical digital literacy, as it is in the other strands. The authors understand critical digital literacy as a set of competences and analytical viewpoints that empower learners to participate fully in the digital world. For this, they need to be able to understand and interpret digital content with a critical mindset that can evaluate content competently.

This criticality is very important, and it is present in all the different strands of the Dice.Lang conceptual model. Figure 1 shows a full strand dedicated to the critical and meta reflective component, a core aspect that allows learners to understand what is needed to navigate the digital world while understanding its complexities. In addition, this strand focuses on understanding how people relate to digital media and how the constant immersion into the digital world shapes its users. To summarise, this strand aims at developing the critical thinking skills and reflecting attitudes that allow learners to become competent in the digital world.

Language teaching goes hand in hand with (inter)cultural awareness and learning, as much as with exchanging values and attitudes. From this perspective, the foreign language teachers showed great confidence in integrating those components in their classes and lesson plans. The core strand of the Dice.Lang framework about inter- and transcultural components could be a good resource for teachers that are already integrating these elements in their classes. The novelty, perhaps, will reside in that the DCE will promote digital exchange practices in order to understand and support cross-cultural differences and promote relationships across cultures. Indeed, it should not be forgotten that the digital world has no borders.

Before the authors provide concrete examples of some OERs, it is worth mentioning the identity and the content-oriented strands from

the framework. Even though the survey does not bring any data related to these two strands, it is important to state that they give a clear and complete overview of how the framework addresses the needs or potential needs of foreign language teachers that wish to introduce DCE in their language classes. The identity component deals with questions related to types of identity. For instance, the kind of identity individuals represent, especially nowadays when considerable time is spent online and sometimes the digital identity differs from one's offline identity. Also, the question of individuals being aware of their digital footprints and how their personal information is stored and treated is discussed. The critical approach is absolutely necessary when talking about identity. Finally, the content-oriented perspective can be closely linked with language learning as it relates to the learners' ability to engage effectively and critically with current topics and issues presented on digital media, while finding their own presence and position. Talking and discussing all these topics online or in class through the target language will clearly show how the DCE and foreign language learning principles are combined.

The Dice.Lang consortium has developed 50 teaching units based on these five strands that are discussed above. To contribute to the conceptualization of five strands and discussion about the results of the survey, the authors of this paper introduce examples of five different OERs, each one dealing with a different strand. Each example indicates some of the learning outcomes of the unit and how they relate to DCE.

1. **Critical Digital Literacies**: *Seeing is no longer believing: Deepfake videos*
    Potential product: creation of a collaborative digital infographic or poster with tips to spot Deepfakes.

    This teaching unit (Level B1 CEFR) focuses on fostering learners' skills to spot and evaluate the credibility and reliability of online material. Learners are guided in understanding the importance of being well-informed consumers of news while reflecting on types of news sources and the danger of misleading information. Within the activities proposed in the teaching unit, learners are given opportunities to practise their listening and speaking skills, thus the authors believe that students will move from mere consumers of online content to producers by creating an infographic on spotting deepfake videos.

2. **Content Oriented Perspectives**: *Refugees and the importance of digital education*
    Potential product: organising and promoting online the event "Refugee Day" at school.

    This teaching unit (Level A2-B1 CEFR) addresses the importance of raising awareness on the digital and educational inequalities that affect young refugees. It is vital for them to have access to digital tools and

know how to use them while promoting intercultural understanding and tolerance. During the lesson learners are guided to the organisation and promotion of an online event entitled "Refugee Day" that could aim at encouraging public awareness and support of young refugees with a special focus on education through the use of digital technology.

3. **Critical and Meta Reflective Component**: *Quality time online: cultivating healthy digital habits*

    Potential product: creating a digital activity journal.

    This teaching unit (Level A2-B1 CEFR) addresses the impact that being online can have on mental and physical well-being and focuses on how technology can enhance and simplify people's lives rather than being a cause of distraction. Learners are guided to cultivate healthy digital habits and improve their digital life through a series of *ad hoc* tasks and the creation of a digital activity journal where they should record their digital habits on a weekly basis.

4. **Identity Oriented Perspective**: *My digital hero. Positive social media accounts*

    Potential Product: creating a collaborative Padlet board with their digital heroes.

    This teaching unit (Level A2-B1 CEFR) guides students in learning about positive inspirational teenagers by analysing social media accounts critically, while raising awareness on the impact positive digital environments can have. As a result, this allows learners to reflect on their own social media presence and the positive changes they can inspire in themselves. The product created in this teaching unit could be a collaborative Padlet introducing the students' digital heroes.

5. **Inter- and Transcultural Perspectives**: *Using digital skills to understand and challenge prejudice*

    Potential Product: creation of 2 avatars, 1 as representation of oneself and the other as representation of how one is perceived/assumed to be by others. Creation then of a collective poster representing all the students in the class in their self-representational avatars.

    This teaching unit (Level B1 CEFR) focuses on tackling the ideas of social justice and prejudice by using digital skills. Learners are guided to create two avatars: one as a representation of oneself and the other as a representation of how one is perceived or assumed to be by others. Subsequently, a collective poster, resembling a class photo, is created where learners' avatars are displayed, and next to each avatar at least 2 personality features could be noted. Besides, the poster combined with an introduction about the avatar experiment undertaken, could be shared in the social media school channels.

Conclusions

Digital Citizenship Education is a complex, multi-layered and multidisciplinary concept. This is the reason why a framework that deals with DCE may need to have several distinct dimensions. In this paper the authors have stated how the Dice.Lang framework interacts with existing European models bridging and connecting the gaps that exist in each of them when used to talk about digital citizenship and foreign language learning. The developed open education resources could encourage the development of learners' digital literacies because their teachers' attitudes towards the use of technology and self-perception as confident users, is very positive.

Likewise, the development of critical thinking and criticality in foreign language lessons is an area in which the language teachers feel less confident. From this point of view, the critical component presented in all strands of the Dice.Lang framework, particularly in the Metareflective and Critical Perspectives, emerges in most of the open education resources. This addresses the needs that some teachers may have when thinking about implementing Digital Citizenship Education practices in their foreign language classes.

The sample of activities presented in this paper are examples that teachers could implement in their classes. Essential information about the CEFR level, the potential product that the students could develop when carrying out the activities of the teaching unit and a description of the DCE learning outcomes involved have been added to facilitate teachers with implementing them into their classes. To conclude, within the context of Digital Citizenship Education the authors would like to encourage any foreign language teacher help their students to become a competent foreign language user and digital citizen, behaving ethically, civically and respectfully.

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SOCIAL EMOTIONAL HEALTH AND PSYCHOLOGICAL RESILIENCE IN THE SAMPLE OF LITHUANIAN SCHOOL TEACHERS

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ABSTRACT

Introduction. Teacher's job is considered to be not attractive as it contains emotional strain and stress and schools in Lithuania face a shortage of teachers (TALIS, 2018; Merkys & Balčiūnas, 2019). Research on the social emotional health and resilience of teachers is important, especially in the face of the challenges of the Covid-19 pandemic. Research on social emotional health and resilience of Lithuanian teachers was conducted as part of the ERASMUS+ project 'Supporting teachers to face the challenge of distance teaching' (2020-1-LV01-KA226-SCH-094599).

Methodology. The aim of this research was to assess the social emotional health and resilience of secondary school teachers in post-pandemic times. 400 respondents from Lithuania participated in the research. The results are based on data from the 'Social and emotional health survey for teachers' (SEHS-T) (Furlong.& Gajdasova, 2019) and the 'Resilience scale' (RS14) (Wagnild & Young, 1993; Wagnild, 2016).

Results. Teachers reported a sufficiently high level of overall indicator of Social and Emotional Health (SEHS-T) as well as its domains: Belief-in-Self, Emotional Competence, Engaged Living. The level of teacher Resilience reached a moderate level. Significantly high positive correlations were established between teacher resilience and the overall social emotional index (r_s = .585, p = .000), as well as between the resilience and social emotional domains: Engaged Living (r_s = .560*, p = .000), Emotional Competence (r_s = .448*, p = .000) and Belief-in-Self (r_s = .515**, p = .000). The research did not find statistically significant differences by age, sex, or work experience.

Conclusions. The teachers demonstrated a rather high level of social emotional health, a moderate level of resilience, and weak Belief-in-Others. It is recommended that teachers' resilience is strengthened through interventional activities such as stress coping strategies, emotional awareness, and peer support skills training during the Covid-19 pandemic times.

Keywords: *social-emotional health, belief-in-self, belief-in-others, emotional competence, engaged living, resilience, teachers, Lithuania sample*

Introduction

Theoretical background

There is a massive shortage of teachers and educational support specialists in Lithuania. Teachers do not tend to come to school, because this workplace is not attractive, and this work contains emotional stress (Bubelienė & Merkys, 2016; TALIS, 2018; Merkys & Balčiūnas, 2019). Teachers in Lithuania have suffered from the highest level of stress in the European Union. According to the research data of EURYDICE (2021), a high-level stress is characteristic of 47% of teachers.

According to the report announced by the European Trade Union Committee for Education (ETUCE, 2011), based on research in 30 European countries, there are four main stressors of the work environment at the teacher's work: high workload and intensity, role overload, too many learners in the classroom, inappropriate student behaviour in the classroom. All these factors can lead to the burnout and various health problems of teachers.

Stress is associated with psychological resilience. Being psychologically resilient, teachers can work more efficiently and develop the resilience of their students (Bouillet, Ivanec, Miljević-Riđički, 2014). Psychological resilience is perceived as the process of overcoming difficulties, adverse conditions, or trauma. Resilience is a certain adaptation to innovations or complex situations, psychological immunity, and personal strengths that are based on positive experience and support (Nikolaou et al., 2021). The construct of resilience is a set of certain abilities and the ability to understand a stress situation, to really evaluate own abilities, and to act efficiently is seen as one of the most essential ones (Beardslee, 1989; Caplan, 1990; Rutter, 1999). It should be noted that the resilience construct is highly complex and encompasses cognitive, social, and other behavioural factors, and their evaluation is rather challenging (Pendergast, 2017). As it is shown by several studies there is a close correlation between the resilience, well-being and professional productivity (Svence & Majors, 2015). Emotional social competencies and resilience of teachers are especially evident in dealing with stress and anger situations (Johnson et al., 2005; Petrulyte et al.,2020), for example, external anger management has been found to be positively correlated with age and work experience.

Recent studies about resilience in education focus is on broader social, cultural, and political arenas' (Beltman et all., 2018). For the teacher, resilience is a very important good psychological climate at school and relationships with colleagues (Gibbs & Miller, 2014). It is necessary to point out that a supportive environment, emphatic relationships among colleagues, play a crucial role in an educational institution (Chollett, 2020). Polidore E. T. (2004), Cooper C.L., Flint-Taylor, J., & Pearn, M. (2013),

Mullen et al. (2021) argue that moral support, flexible and adaptive control locus, i. e., knowing that an individual has control over events, educational background, presence of positive relations, optimism, acceptance of changes and high professional competences, are of utmost importance for teacher resilience. Researchers Dreskinytė and Juškelienė (2020) emphasize that teachers increasingly need to strengthen well-being in school community, and their work requires more and more emotional resources.

Methodological background

This our study is based on the Resilience model of Wagnild and Young (1993) and the Social Emotional Health Model by Furlong (Furlong et al., 2014). The Resilience model by Wagnild and Young (1993) explained the phenomenon of resilience as a set of personality traits that facilitate the adaptation of the individual. The authors embrace six characteristics: a harmonious perspective of life; feeling the meaning of life; ability not to break down despite failures and obstacles; recognition of the individual's unique life path; acceptance of his/her life; belief in the self and own abilities. Individuals with high resilience are able to adapt, rebalance, and avoid the potentially harmful effects of stress in the face of depressing adversity (Wagnild & Young, 1993; Wagnild, 2016).

The Social Emotional Health Model by Furlong is to identify key positive indicators for prediction of mental health (Furlong et al., 2014). It is based on positive psychology and consists of 4 positive main domains and 12 subscales as psychological indicators of mental health. The Belief-in-Self domain consists of Self-Efficacy, Persistence, and Self-Awareness. The Belief-in-Others domain comprises Family Support, Institutional Support and Colleague Support. Emotional Competences consists of Cognitive Reappraisal, Empathy, Self-Regulation, and the last domain, Engaged Living, includes Gratitude, Zest and Optimism. In general, social emotional health is called Covitality.

At the beginning of distance learning during the COVID-19 pandemic in Lithuania (spring 2020), schools faced difficulties due to technical means and digital literacy competencies in all groups of participants in the teaching process, but the autumn of 2020 was slightly smoother compared to the spring period. It was also observed that if teachers valued distance learning more favorably, they were also more effective. The authors recommend that teachers use measures to ensure good physical health and emotional well-being for themselves and their students, share good practices with colleagues and, at the same time, solve the difficulties of distance education for children (Distance Education of Children During the COVID-19 Pandemic: Threats and Opportunities from an Ecosystem Perspective, 2021).

There is not enough psychological research on teacher social-emotional health and resilience in Lithuania, because the teaching profession faces greater demands for coping and adapting in times of pandemic. The **aim** of the present research was to evaluate the social emotional health and resilience of secondary school teachers in post-pandemic times.

The study involved 400 teachers from different Lithuania district schools (primary and secondary), among them by sex: 91 men (22.7%) and 309 (77.3%) women. by age: 26 (6.5%) were 20–30 years old, 73 (18.3%) – 31–40 years old, 138 (31.4%) – 41–50 years old, 118 (26.8%) – 31–60 years old and 45 (10.2%) were > 60 years old. The age of most of the respondents is from 41 to 50 years (31.4%) and from 51–60 years (26.8%) (see Figures 1 and 2).
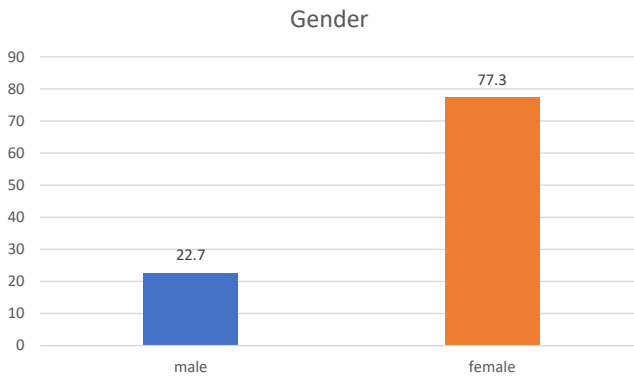
Figure 1. Distribution of teachers by gender (percentage values)
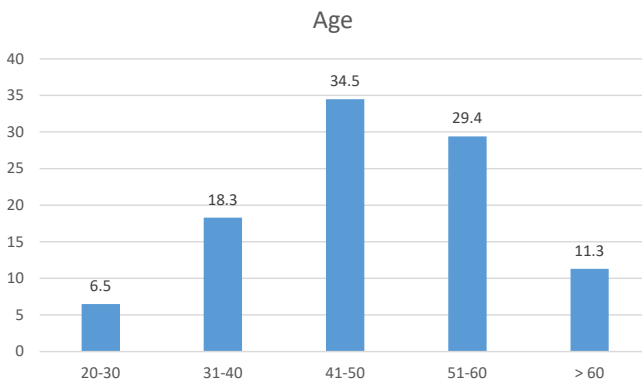
Figure 2. Distribution of teachers by the age (percentage values by age groups)

Methodology

The results are based on the data from the Social and Emotional Health Survey for Teachers (SEHS-T) (Furlong, 2014; Furlong & Gajdosová, 2019) and the short version (14 questions) of the Resilience Scale (Wagnild & Young, 1993; Wagnild, 2016). The Social and Emotional Health Survey for Teachers SEHS-T) and the Resilience Scale were translated into Lithuanian by two independent translators. Permission to use it was obtained from the original authors. The (double) translation of methodologies was carried out by A. Petrulytė and J. Bagdonavičiūtė. In the first, the 'pilot' study of teachers according to the Social Emotional Health and Resilience (2021 March–April). V. Guogienė (a psychologist of the Švenčionys District Education Support Service) helped to conduct the survey in schools.

Social-Emotional Health Survey-Teachers SEHS-T measures the level of general social-emotional index Covitality and its 4 domains (Belief-in-Self, Belief-in-Others, Emotional Competence, Engaged Living). SEHS-T has 12 subscales representing unique positive social-emotional health constructs associated with four general positive social-emotional health domains. The first domain, Belief-in-self, consists of three subscales: self-efficacy, persistence, and self-awareness. The second domain, Belief-in-Others, has three subscales: family support, institutional support, and colleague support The third domain, Emotional competence, consists of three: a cognitive reappraisal, emotional regulation, empathy, and self-regulation. Engaged living comprises three subscales: gratitude, zest, and optimism. SEHS-T contains 48 items rated on a six-point scale with a general index – Covitality score ranging between 48 and 288.

The research methodology tools of the previous "pilot" study: the SEHS-T (Furlong, Gaidosova), the 14-Item Resilience Scale (Wagnild), and the Satisfaction with Life Scale (Diener). The study involved 142 teachers from schools in Švenčionys dis district: 15 men, and 127 women, and their ages ranged from 29 to 72 years (the average age – was 49.5 years). Therefore, the internal consistency of the questionnaire is appropriate for all Cronbach's alpha criteria. The data collected from the participants was not normally distributed. Significant positive relations were found between social emotional health, resilience, and satisfaction with life ($p = 0.000$). All research tools are sufficiently valid and appropriate to assess social, and emotional health, and resilience in Lithuania.

The 14-Item Resilience Scale (14) is a short version of the Resilience Scale (Wagnild, 2011) (25 questions). The short version consists of 14 items rated on a 7-point Likert scale with two anchoring statements from 'strongly disagree' (1) to 'strongly agree' (7). The possible total scores of RS range from 14 to 98. Higher scores are indicative of resilience. Scores of 56

and below are considered to reflect very low resilience, scores from 57 to 64 refer to low resilience, 65 to 73 at the low end, 74-81 moderate, 82 to 90 moderately high, and 91 to 98 high resilience (Wagnild, 2011). The short version RS-14 was used in the Lithuania sample. The RS has demonstrated very good validity and reliability characteristics (Ahern et al., 2006; Portzky, Wagnild, et al., 2010). According to Mesarošová, Hajdúk, Heretik (2014), the RS shows good psychometric properties including acceptable reliability (Cronbach Alpha .818).

Data analysis

Data were analysed using the IBM SPSS 21. Data for internal consistency of study questionnaires were analyzed using Cronbach's alpha. Differences in significance of variables were assessed using the nonparametric Kruskal-Wallis and Mann-Whitney U test. Correlations between variables were examined using the Spearman correlation coefficient.

Results

The present research shows good reliability characteristics of the teacher research tools: SEHS-T (Covitality) and Resilience Scale (RS-14) (400 respondents) (see Table 1).

Examination of the results of SEHS-T Covitality and teachers Resilience showed that the data were not distributed according to the law of normality (see Table 2).

The average score of the level of the general SEHS-T Covitality index in Lithuanian teachers is equal to M = 230.34 (theoretical score range: 48–288, empirical range: 69–287, SD 24.85, minimum 69.00, maximum 287.00), indicating a high level of Covitality (see Table 3).

The total score of teacher Resilience (RS-14) varied from 14 to 98 ($M = 72.93$, $SD = 13.05$), which indicates a moderate level (see Table 4).

Table 1. Reliability of SEHS-T Covitality and Resilience (Cronbach Alpha) in the Lithuanian teacher sample

Social Emotional Health (SEHS-T Covitality)	.950
Belief-in-Self	.894
	.862
Belief-in-Others	.839
	.896
Emotional Competence	
Engaged Living	
Resilience	.786

Table 2. Tests of normality SEHS-T CoVitality and Resilience in the Lithuanian teacher sample

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistics	N	p	Statistics	N	p
Belief-in-Self	.111	399	.000	.935	399	.000
Belief-in-Others	.083	399	.000	.958	399	.000
Emotional Competence	.078	399	.000	.940	399	.000
Engaged Living	.106	399	.000	.947	399	.000
SEHS-T CoVitality	.078	399	.000	.932	399	.000
Resilience	.121	399	.000	.951	399	.000

Table 3. Descriptive statistics of the SEHS-T Covitality and its psychological indicators in the Lithuanian teacher sample

	Minimum	Maximum	Mean	SD
Self-efficacy	8.00	24.00	19.53	2.39
Persistence	5.00	24.00	19.26	2.80
Self-awareness	4.00	24.00	19.74	2.55
Belief-in-Self	17.00	72.00	58.53	6.51
Family support	4.00	24.00	19.42	3.91
Institutional support	6.00	24.00	17.46	3.12
Colleague support	4.00	24.00	18.79	4.02
Belief-in-Others	15.00	72.00	55.67	8.38
Cognitive reappraisal	8.00	24.00	17.88	3.12
Empathy	5.00	24.00	20.24	2.50
Self-regulation	5.00	24.00	20.24	2.48
Emotional Competence	19.00	72.00	58.36	6.30
Gratitude	4.00	24.00	21.57	2.55
Zest	5.00	24.00	18.35	3.50
Optimism	4.00	24.00	18.04	3.45
Engaged Living	18.00	72.00	57.95	7.99

Table 4. Descriptive statistics of Resilience (RS-14) in the Lithuanian teacher sample

	Minimum	Maximum	Mean	SD
Resilience	14.00	98.00	72.93	13.05

Social Emotional Health (SEHS-T) and its psychological indicators in Lithuanian teacher's analysis

Four domains of the SEHS-T Covitality and its psychological indicators (subscales) can be seen in the pictures below (Pictures 3–7).
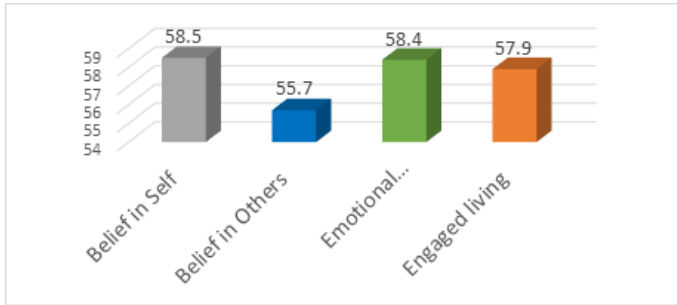
Figure 3. Means of SEHS-T main domains: Belief-in-Self, Belief-in-Others, Emotional Competence and Engaged Living
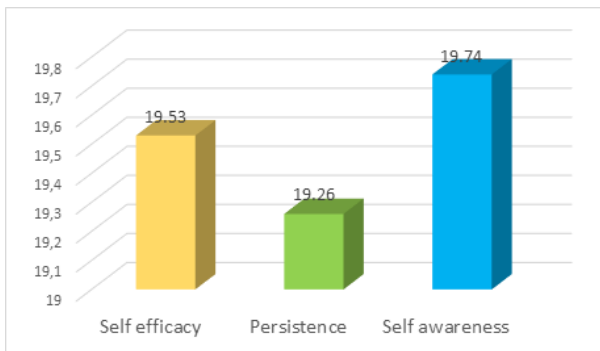
Figure 4. Means of subscales of SEHS-T – Belief-in-Self
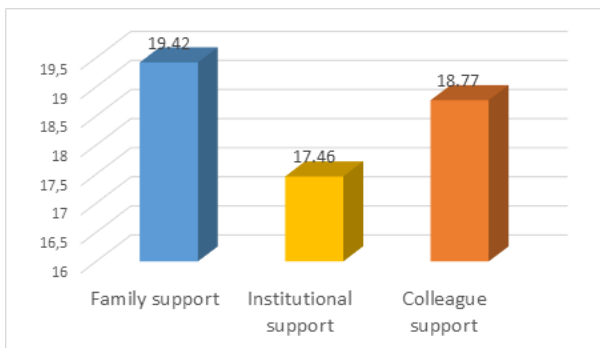
Figure 5. Means of subscales of SEHS-T – Belief-in-Others
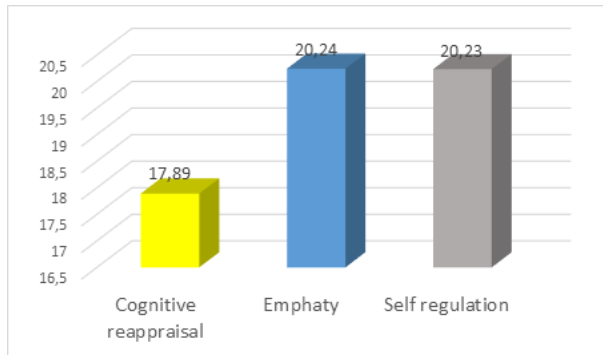
Figure 6. Means of subscales of SEHS-T – Emotional Competence
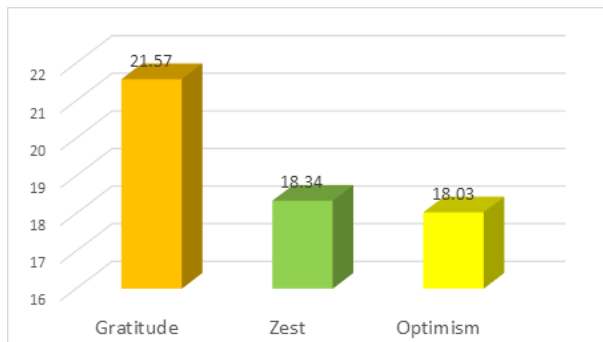
Figure 7. Means of subscales of teachers SEHS-T – Engaged Living

Several indicators of the SEHS-T – self-efficacy, cognitive re-appraisal, empathy, self-regulation, gratitude and optimism were found to be at a high level (>18) in the Lithuanian teacher sample. However, other SEHS-T indicators, such as institutional support, and colleague support reached only a moderate level ($M = 17.46$ and $M = 17.88$ respectively).

Analysis by sociodemographic variables of teachers shows that no significant differences were found in scores of SEHS-T Covitality and Resilience (RS-14) ($p > 0.05$) according to the gender, age, and work experience (see Tables 6–11).

Table 6. Sociodemographic variables of teachers Covitality by gender

Gender	Mean	SD	Median	Z	p
Male	231.30	21.12	233.00	– .118	0.906
Female	230.27	25.88	233.00		

Table 7. Sociodemographic variables of teachers Covitality by age

Number of years of experience	Mean	SD	Median	Kruskal-Wallis H	p
less than 5	227.08	26.76	230.00	0.687	0.953
6–10	225.67	25.65	227.00		
11–20	231.04	27.04	233.00		
21–30	233.41	19.80	236.00		
more than 30	228.86	27.22	232.00		

Table 8. Sociodemographic variables of teachers Covitality by years of work experience

Number of years of experience	Mean	SD	Median	Kruskal-Wallis H	p
less than 5	227.08	26.76	230.00	3.540	0.472
6–10	225.67	25.65	227.00		
11–20	231.04	27.04	233.00		
21–30	233.41	19.80	236.00		
more than 30	228.86	27.22	232.00		

Table 9. Sociodemographic variables of teachers Resilience by gender

Gender	Mean	SD	Median	Z	p
Male	71.92	14.75	73.50	– .167	0.867
Female	73.23	12.51	73.50		

Table 10. Sociodemographic variables of teachers Resilience by age

Number of years of experience	Mean	SD	Median	Kruskal-Wallis H	p
less than 5	72.37	16.30	74.55	3.263	0.515
6–10	71.37	12.96	70.00		
11–20	72.43	14.34	73.50		
21–30	73.78	11.16	73.50		
more than 30	75.12	11.58	78.40		

Table 11. Sociodemographic variables of teachers Resilience of number of years of work experience

Number of years of experience	Mean	SD	Median	Kruskal-Wallis H	p
less than 5	71.77	14.15	73.15	1.093	0.895
6–10	72.18	12.24	73.50		
11–20	72.59	13.93	73.50		
21–30	73.24	13.09	75.60		
more than 30	73.51	12.05	73.50		

Teachers SEHS-T Covitality and Resilience correlations in the Lithuanian teacher sample

Significantly positive correlations were found between the teacher Resilience and the overall Social Emotional Index Covitality (r_s = .585, p = .000) as well as between the resilience and social emotional domains: Engaged Living (r_s = .560*, p = .000), Emotional Competence (r_s = .448*, p = .000), Belief-in-Self (r_s = .515**, p = .000) and Belief-in-Others (r_s = 397 **, p = .000) (see Table 12).

Table 12. Correlations between Resilience and SEHS-T Covitality indicators in the Lithuanian teacher sample

SEHS-T	Resilience (RS14)
CoVitality	.585**
Belief-in-Self	.515**
Belief-in-Others	.397**
Emotional Competence	.448**
Engaged Living	.560**
Self-Efficacy	.439**
Persistence	.392**
Self-Awareness	.396**
Family Support	.268**
Institutional Support	.366**
Colleague Support	.283**
Cognitive Reappraisal	.442**
Empathy	.272**
Self-Regulation	.247**
Gratitude	.308**
Zest	.525**
Optimism	.538**

Note. Correlation is significant at the ** p < .01.

The frequency analysis of teacher resilience shows that although teacher responses (assessments of scale statements) seem good, some limitations of teachers were found on these two items:

- 'I have enough energy to do what I have to do': 66% of the teachers provided negative ratings to this item;
- 'When I am in a difficult situation, I can usually find my way out of it': 68% of the teachers responded to this item with low responses (lower than 5) and reported problems in solving of difficult situations.

Discussion

The main aim of the present study was to investigate the social emotional health and resilience of teachers and to verify whether there are correlations between social emotional health and resilience in the Lithuanian sample. At the same time, to evaluate the psychometric properties of Lithuanian teachers, the SEHS-T Covitality and the short version of the Resilience Scale (RS-14) were used.

Significant correlations were found between social emotional health indicators and teacher resilience. Teachers use various internal and external resources in the process of coping with stress. This complies with the data obtained by other researchers (Everall, Altrows, Paulson, 2006; Fergus, Zimmerman, 2005; Mesárošová et al., 2014; Hayter & Dorstyn, 2014; Greškovičová., Boleková, Szobiová, 2016; Daigneault et al., 2013; Yıldırım, Arslan, 2000).

The general SEHS-T index reached the high level. Discussing one of the weaker aspects of social emotional indicators, i. e. "Belief-in-Others" and its indicators /subscales such as Institutional Support and Colleague Support, identified among teachers investigated according to Covitaliy, the results of the presented research comply with those of the new national research (Factors Influencing Learning Achievement and Reducing Psychosocial Risks in the School Community and Leadership, 2021). Although 62% of teachers in the country trust their school community, only 45% of them express favourable attitude towards communality within their school community; support received by school learners from the school community, i. e. teachers, other specialists and school authorities, is linked to their better psychological well-being and lower psychological distress.

The mean score of RS-14 in Lithuanian population fell in the category of moderate resilience, similarly to other studies (Abiola & Udofia, 2011; Losoi et al., 2013; Wagnild, 2011, Mazulyte, 2016). Most of the resilience levels of the current sample ranged from low end to moderately high resilience, similar to the original RS-14 study (Wagnild, 2011). The Cronbach alpha

coefficient of internal consistency in the present research was similar to the original English version of the RS-14 (Wagnild, 2011).

In this investigation, there were no significant differences in the SEHS-T Covitality and Resilience by the teacher's demographic variables, such as gender, age and work experience. The results of the current study did not support previous findings on a significant relationship between resilience and age (Damásio et al., 2011; Losoi et al.,2013; Lundman et al., 2007; Portzky et al., 2010; Abiola, T., & Udofia, O., 2011; G. Svence et al., 2021). It can be argued that the short-version RS14 is a measure aimed at ensuring the resilience of traits, which is supposed to be a characteristic of a stable person characteristic; therefore, no effect of age is understandable (Mazulyte, 2016). However, as other studies observed, the relationship between RS-14 and age, as well as cultural differences, cannot be excluded.

The results of the teacher resilience results are in line with the data of Juškevičienė (2021) that the psychological resilience of early childhood education teachers is of average level and that the resilience of teachers does not differ according to the working experience; that teacher resilience significantly positively correlates with the stress coping strategy of problem solving. Regarding the association with gender, the results of our study supported the findings of previous studies, which did not find such an association (Damásio et al., 2011; Losoi et al., 2013; Ruiz – Párraga et al., 2012; Mazulyte, 2016). Regarding the teaching experience, our results partially align with the study by Mazulyte (2016) – there is a significant association between resilience and education, with more educated people scoring higher on resilience than those with a lower education level. A similar result was found in the Dutch sample, where the authors found that successfully mastering higher education is likely to increase self-esteem, which is an integral part of resilience (Portzky et al., 2010).

Limitations and future research: the present research could have included a larger and more representative sample by age, gender, and work experience; we should conduct longitudinal research of resilience in post-pandemic times.

It is recommended that the social-emotional health and resilience of teachers are strengthened through interventional activities such as stress coping strategies to prevent burnout, using emotion awareness exercises 'Mindfulness', increasing the support and cooperation of colleagues at school during the pandemic and other times of crisis. To reduce teacher stress and other negative emotions in the teaching process, teachers are recommended to carry out the following actions: understand the reason for negative emotions, try to solve a problem, discuss the problem with colleagues, that is, social support, create a life that does not relate to work, learn to distance yourself from work-related pressure, make attempts to

prevent conditions in the classroom that can cause anger and identify 'triggers' of anger, create an algorithm to cope with such situations, avoid emotional outbursts, use fast stress-reducing practice.

Conclusions

1. Teachers SEHS-T general index Covitality reached the high level and in subscales of Institutional support and Colleague support are at the moderate level, and also the Resilience are at the moderate level.
2. No significant differences were found according to teacher gender, age and work experience in SEHS-T Covitality and Resilience.
3. There are significantly positive correlations between teacher Resilience and the Social Emotional health.

Generalizing results from this study, the Lithuanian version of SEHS-T and RS-14 is enough valid and reliable instrument which can be used to measure social emotional health and resilience in the Lithuanian teacher population.

It can be stated that the better relations and communication among teachers in the school community are observed, the better their psychological resilience and effective applied stress coping strategies are. This acquires a particular significance in the situation of the Covid-19 pandemic and other challenges.

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TEACHERS' SOCIAL-EMOTIONAL HEALTH AND RESILIENCE IN COVID-19 CRISIS: LATVIAN SAMPLE

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ABSTRACT

Research on social-emotional health and resilience of Latvian teachers was conducted as part of the ERASMUS+ project "Supporting teachers to face the challenge of distance teaching". The aim of this study is to assess teachers' social-emotional health and resilience to reveal those areas which require significant support and development in the Covid-19 pandemic situation. In the article, the concepts used in the project – social-emotional health, resilience, covitality will be theoretically analysed to substantiate the structure of the empirical study. Teachers' mental health was tested using Social-emotional Health Survey–Teachers SEHS-T (Furlong et al., 2017; Furlong et al., 2014; Furlong & Gajdošová, 2018, as mentioned in Lapiņa, 2021) and Resilience Scale RS 25 (Wagnild & Young, 1993; Wagnild, 2009; Wagnild, 2016) with supplementary questions. 636 teachers of general and vocational schools took part in the research. The results identified that positive teachers' strengths are self-regulation, empathy, and cognitive reappraisal. However, the teachers demonstrated limits in resilience as such, and in some scores of SEHS-T, as in covitality domain *Belief in Others*, especially in institutional and colleagues' support, and in *Engaged Living* – gratitude and zest. The identified weaknesses and limits will be used as a foundation for preparing further intervention activities – a digital psychological support programme for strengthening the teachers' resilience and mental health in general.

Keywords: *Social-emotional health, resilience, strengths, limitations, teachers*

Introduction

Problem

A teacher is a profession that has always been faced with many different challenges. Daily, teachers are exposed to many occupational and environmental risk factors that can contribute to a variety of both psychological and physical illnesses. For example, they need to adapt to working with a wide variety of children and their parents, to learn new technologies, and to meet the demands of educational reforms. The Covid-19 crisis and the associated distance learning process have led to increased

psycho-emotional stress, which has the potential to lead to a deterioration in teachers' psycho-emotional health and quality of life (UNESCO, 2020; Svence et al., 2021; Lagzdiņa, 2021).

The topic was based on the observed in the professional activities of the research sample – teachers' burnout, descriptions of qualitatively expressed social and emotional difficulties during distance learning in the period from 2019–2020 (Birkane & Svence, 2019, Kalniņa, 2021, Svence et al., 2021).

Overview of previous research

Social-emotional health and resilience as constructs have been widely studied, but not in relation to professional teachers and not on Latvian sample. There have been numerous international studies about teacher performance and quality of education, like TALIS 2018 where Latvia participated. However, usually these studies focus on subjects like professional work and practice, teacher education, leadership, teaching approach, school environment, teacher self-assessment, professional satisfaction, innovations, accessibility, and diversity. This means that data collected during such studies is incomplete, because the teachers' profession involves intensive psycho-emotional communication and relationship with other stakeholders, like, students, parents and other. Under the present circumstances, it is accompanied with the stress of necessity to apply new teaching methods, rework all teaching aids and materials, and learn new – online communication methods and master IT technologies. It also means that it is not possible to develop targeted and in needs-based teachers' resilience-building and emotional support programs although they are so much needed under the current circumstances (Fokkens-Bruinsma et al., 2020).

In this context, the aim of the study was to analyse the psycho-emotional health indicators of Latvian teachers to establish the difficulties of social-emotional health.

Theoretical framework

The research is based on the concepts of social-emotional health (Furlong et al., 2017; Furlong et al., 2014; Furlong & Gajdošová, 2018, as mentioned in Lapiņa, 2021) and resilience (Wagnild & Young, 1993; Wagnild, 2009; Wagnild, 2016). These concepts are closely related to other concepts in psychology, especially health psychology, such as psycho-emotional health. In turn, all these concepts are generally supported by the bio-psycho-emotional health model.

Most health care professionals who are not involved in the treatment of mental illness traditionally do not pay attention to an individual's psychological factors, such as thoughts, beliefs, and attitudes. Today, however, these factors are receiving increasing attention in various difficulties.

The World Health Organization (WHO) defines general health as a state of complete physical, mental, and social well-being rather than a state without physical impairment or disease (WHO, 2004). Therefore, not only physical but also mental or psycho-emotional health is an important and integral part of an individual's overall health. The WHO defines mental or psycho-emotional health as a state of well-being in which an individual can fulfil his or her potential, cope with daily stress, work productively and contribute to society (WHO, 2004).

The bio-psycho-social model is based on the individual's overall well-being and his or her effective functioning at the individual and societal levels. Like the WHO definition, psychological researchers (Westerhof & Keyes, 2010) point out that psycho-emotional health arises from emotional well-being (interest, happiness, satisfaction with life), psychological well-being (positive functioning and self-realization of the individual) and social well-being (integration into society and a sense of worth in it).

The study uses several keywords included in the bio-psycho-social model and adapted in Social-Emotional Health Survey – Teachers SEHS-T (Furlong et al., 2017; Furlong et al., 2014; Furlong & Gajdošová, 2018, as mentioned in Lapiņa, 2021): social support (SEHS-T), interpersonal relationships (SEHS-T), socio-economic status (demographic issues), physical activity – adapted in Resilience Scale RS 25 (Wagnild & Young, 1993; Wagnild, 2009; Wagnild,2016) (RS), emotions (SEHS-T), self-esteem, attitudes towards self (RS), faith or individual belief system (SEHS-T, RS), and stress management (SEHS-T and-RS).

The concept of socio-emotional health originates from the concept of mental health, which some researchers still use today. Mental health is defined as a state of well-being in which an individual can realize his or her potential, cope with the stress of daily life, be able to work productively, and be able to contribute to society. Researchers have suggested defining mental health as a set of positive feelings and positive lives (Furlong et al., 2014).

Another study conducted in 2014 defined social-emotional health as the ability to regulate emotions, such as the ability to regulate and control one's emotions, and emotional intelligence, which is the ability to recognize emotions and use them constructively. The study noted that social-emotional health is a multidimensional construct that incorporates positive mental health structures such as life satisfaction (Snowden et al., 2015).

Social and emotional health encompass several interrelated areas, such as social interaction, emotional awareness, and self-regulatory abilities. Social interaction focuses on the individual's relationships, in which they share with others, learn to take responsibility, help, and interact with others. Emotional awareness includes the ability to recognize and understand one's emotions and feelings, and the individuals learn to understand how

their behaviour and emotions affect them and the people around them. Self-regulatory abilities are the ability of an individual to express their thoughts, feelings and behave socially appropriately (Damon et al., 2015).

In 2014, Michael Furlong and his team developed a Social-Emotional Health Survey (SEHS). This survey allows the measurement of four constructs that make up social-emotional health (SEH) and the total SEH factor (Boman et al., 2020). The basic principle of SEHS is related to the assumption that an individual's sense of psychological prosperity is partly based on living conditions that promote the disposition of internal cognition or form individual schemes. These schemes are related to an individual's beliefs about themselves, others, emotional competencies, and viability (Furlong et al., 2014).

The first concept in the SEHS model is self-confidence. It consists of three components: self-efficacy, perseverance, and self-confidence. Self-efficacy is defined as an individual's confidence in their ability to match their activities with the requirements of the environment. Perseverance is defined as an activity with a long-term goal. It also includes working with challenges, maintaining interest over the years, even when faced with failures and obstacles to achieving the goal. Self-confidence is defined as the ability of an individual to understand their strengths and weaknesses, as the ability to understand their emotions, reactions and motivations (Furlong et al., 2014; Klingbeil & Renshaw, 2018).

The second construct of the social-emotional health model is confidence in others. This includes the support of the individual's family, educational institutions, and peers. At the same time, these components are the processes of social exchange between the family, teachers, and peers, which develop the individual's cognitive processes and value system (Furlong et al., 2014; Klingbeil & Renshaw, 2018).

The third construct of the model is emotional competence, which consists of three lower-order constructs: emotional self-regulation, empathy, and self-control. Emotional self-regulation is defined as an individual's ability to express emotions according to a given situation. It is the ability to accept and feel different emotions and react flexibly to them. Empathy is an individual's ability to notice and feel other people's emotions. In turn, self-control manifests as the ability to respond appropriately to different situations (Furlong et al., 2014; Klingbeil & Renshaw, 2018).

The fourth construct of the model is viability, which includes gratitude, passion, and optimism. Gratitude is described as a feeling that arises when an individual responds to receiving any kind of personal benefit. Passion / enthusiasm is defined as the ability of an individual to do things with enthusiasm and confidence. Optimism is characterized by an individual's faith in the future and life force (Furlong et al., 2014;

Klingbeil & Renshaw, 2018). Michael Furlong defines these four constructs as social-emotional health factors. In turn, the lower order constructs, interacting with each other, form these factors. In addition, the influence of these constructs in combination with other concepts of positive psychology is enhanced (Furlong et al., 2014). He calls the overall SEHS' factor *Covitality*, which in terms of content is the same as well-being or psychological well-being (Timofejeva, Svence, & Petrulytė, 2016).

In literature, the concept "resilience" is defined differently, most often – as an individual's abilities, as personality traits or as a dynamic process. As an individual's ability, resilience is the ability to overcome unfavourable life experiences, adapt, recover and continue to function successfully after difficult and complex life events (Svence, 2015). Resilience also includes an individual's ability to increase their competence by overcoming adverse conditions (Bobek, 2010). This quality allows teachers to continue their pedagogical practice (Brunetti, 2006, as reported by Beltman et al., 2011).

Theoretical models that define resilience as a set of personality traits are the most widely used. The United States researchers Wangild & Young developed one such model in 1993 (Wangild & Young, 1993). They explain the phenomenon of a person's vitality as a set of personality traits that facilitate the adaptation of the individual. This concept suggests that individuals with high resilience are able to adapt, rebalance, and avoid the potentially harmful effects of stress in the face of depressing adversity (Wagnild & Young, 1993; Wagnild, 2004, cited in Svence, 2016).

Researchers have found that teachers' resilience is enhanced by individual factors (strong self-efficacy, high motivation, ethical goals, flexibility and a sense of humour). Different social factors related to teacher's work are there equally important like an ability to work effectively under the guidance of an administrative team (Mansfield et al., 2012), mentor's support, a favourable psychological climate at school (Gibbs & Miller, 2014), good relationships with colleagues (Beckett, 2011), positive assessment of professional performance, material support and professional development opportunities (Croswell & Beutel, 2013). Susan Beltman and colleagues have studied teachers' vitality, defining it as an area that allows them to understand what makes teachers cope with challenges. It offers an additional perspective to the study of stress, burnout, and its components – exhaustion (Beltman et al., 2011).

Wangild and Young have developed one of the tools for measuring resilience as part of their concept. They developed the Resilience Scale (RS) (Wagnild & Young, 1993; Linguistic adaptation of Bērziņa & Svence, 2009, as mentioned by Svence, 2015). They identified five essential characteristics of resilience, or interrelated components of vitality:

- self-reliance – self-belief, self-reliance;

- significance – awareness that there are goals in life;
- equanimity – the balance of one's life experiences and perspectives;
- perseverance – the ability to adapt to a change despite difficulties;
- existential loneliness – the awareness that each person is unique, that one life experience can be gained by sharing, and another only by being alone (Wagnild & Young, 1993).

Although a five-factor model was initially developed, psychometric analysis showed that a two-factor model was appropriate for viability research. In this model, resilience is characterized by *Personal Competence* and *Acceptance of Self and Life.* Personal competence refers to self-confidence, independence, determination, mastery and ingenuity. Acceptance of oneself and one's own life, on the other hand, reflects adaptability, flexibility, and a balanced view of life (Wagnil & Young, 1993).

Impact

The survey methodology and the elaborated questionnaire met the need to get data about the teachers' awareness of their social and emotional competencies, ensured easy access to knowledge and skills on resilience and resilience development resources. The survey also explored the teachers' signs of vitality or viability resources.

The results of the study will be used for the development of the principles and content for the digitized teacher support programme – Online teachers' supervision programme and Teachers' resilience support programme as an online further education programme and an E-book, in the context of distance learning in the Covid-19 pandemic, and to provide recommendations for education policy as well.

Methodology

Research questions

1) What social-emotional difficulties Latvian teachers have in situation of distant teaching during the Covid-19 crisis?
2) What are the teachers' psychological resources for strengthening their SEH and RS?

Description of the procedure

Two new psychological assessment tools were adapted for the study: the SEHS-T (Social Emotional Health Scale – Teachers) and the Resilience scale. Initially, a pilot study was carried out, involving teachers from eight partner schools in the project. After the adaptation, the survey was distributed in all general and vocational education institutions in Latvia. This ensured a representative sample. It should be noted that the completion

of the questionnaire was voluntary and anonymous; the questionnaire was available electronically in Google platform, which means that all ethical standards required by the Ethical Action Policy of Research at the University of Latvia (2021) and international documents and Regulations of the Republic of Latvia are met. Taking into consideration the project methodology, only educators who had worked remotely in a general or vocational education institution during the Covid-19 pandemic for at least a year participated in the survey.

Instruments

SEHS-T (Social-Emotional Health Survey – Teachers) and RS (Resilience Scale) were implemented for the study of Latvian teachers' psycho-emotional health. Both surveys correspond to the school sector, and in a future they can be used as a tool for measuring the effectivity of the teachers' resilience support program, too.

Eva Gajdosova sent the SEHS-T methodology with the permission of J. M. Furlong. Researchers of University of Latvia performed the adaptation of the survey with 50 and after that – 571 participants according to the procedure adopted as a standard in psychology and described in this publication in Psychology – International Test Commission (2010) (Lagzdiņa, 2021). Professor Geil Wagnild (www.resiliencecenter.com) gave permission to purchase the survey and Licence of Resilience Scale (RS) survey. SEHS-T has not been adapted anywhere in the European Union yet; it is an original contribution to the Pan-European University.

As part of the study, the RS scale was supplemented with the so-called negative questions at the end of survey. The questions from 1 to 7 were included by the RS author Geil Wagnild, but questions from 8 to 10 were added by the project researchers to highlight the distance learning aspect:

1) I feel myself depressed the last few weeks (never / sometimes / often / all the time)
2) Basically, I evaluate my health (excellent / very good / good / weak / bad)
3) I am at my ideal weight + /- 2.7kg (yes / no)
4) Every day I exercise for 30 minutes or more (yes / no)
5) I eat healthy every day (yes / no)
6) I do not use tobacco products (do not smoke, do not chew, do not sniff) (yes / no)
7) I drink SOME * or NO alcohol per day (* 1 drink per day for women, 1-2 drinks per day for men) (yes / no)
8) Please, name the emotions you most often feel when work on distance.

9) What psychological support do you think a teacher should receive working on distance?

10) What difficulties have you encountered in your work during the last six months?

Data analysis methods

The psychometric and linguistic adaptation of SEHS-T was conducted. Correlations between scales and socio-demographic questions were computed. Regression analysis of the prognostic impact of socio-demographic data on SEHS-T and RS indicators was performed. The collected data were processed and analysed using the statistical data processing program SPSS 21.

Sampling

The research data were collected randomly – by inviting teachers from all Latvian comprehensive schools to fill in online questionnaires. Data were collected distantly from 1 June to 31 August 2021.

In total 636 teachers participated in the survey, most of them women (95.3%), which corresponds to the reality of Latvian educational institutions – mostly women work there. All age groups were covered equally in the survey. Most teachers (53.9%) have a master's degree, but other levels of education were also represented. Most teachers (87.7%) represent general education institutions, but the survey respondents also include teachers from other types of schools. The majority (81.4%) of the surveyed teachers work full-time or more in educational institutions. The socio-demographic characteristics of the sample are presented in more detail in Table 4.

Results

The analysis of the data results was proceeded following several steps: Step 1 – analysis of demographic data in comparison with SEHS-T and RS indicators, Step 2 – answering to the first research question, Step 3 – answering to the second research question.

Step 1. The data obtained within the framework of the research allow the authors to conclude that there is no statistically significant relationship between teachers' socio-emotional health and socio-demographic indicators. There is also no statistically significant relationship between teachers' socio-demographic indicators and their vitality. This means that the teacher's age, gender, level of education, the type of educational institution in which the teacher works, the teacher's workload, the teacher's salary per

workload, and the teacher's place of residence have no effect on teachers' SEHS-T and RS indicators.

Step 2. The difficulties are not so much indicated by the SEHS-T and RS indicators, but by the RS supplementary questions and the emotions experienced by the teachers (Table 1).

Table 1. Distribution of answers to additional questions ($N = 636$)

		Frequency	%	Cumulative %
I have been feeling depressed last weeks	all the time	29	4.6	4.6
	often	82	12.9	17.5
	sometimes	348	54.8	72.3
	never	176	27.7	100.0
Basically, I value my health as	bad	11	1.7	1.7
	weak	94	14.8	16.5
	good	445	70.1	86.6
	very good	70	11.0	97.6
	excellent	15	2.4	100.0
I am at my ideal weight +/− 2.7 kg	yes	206	32.4	32.4
	no	429	67.6	100.0
I exercise for 30 minutes or more every day	yes	115	18.1	18.1
	no	520	81.9	100.0
I eat healthy every day	yes	321	50.6	50.6
	no	314	49.4	100.0
I don't use tobacco products (I don't smoke, I don't chew, I don't sniff)	yes	505	79.5	79.5
	no	130	20.5	100.0
I drink SOME * or NO alcohol per day (* 1 drink per day for women, 1–2 drinks per day for men)	yes	307	48.3	48.3
	no	328	51.7	100.0

The study of the seven additional questions of the Resilience Survey (RS) provides relevant information. The results of the survey show that 17% of the teachers in the study have experienced a depressed mood often or all the time during the last week, while 72% of the surveyed teachers have experienced this feeling at least once during the week. Depressive mood or a predisposition to it is one of the difficulties the study has found in the sample of teachers. It can be assumed that if a teacher feels depressed all the time or often during the week, this indicates to an increased rate of depression, which may also be clinically significant.

Most of the teachers (83%), evaluate their health as positive, 15% evaluate their health as poor, and 2% – as bad. The high self-esteem of most teachers can be considered as a strong feature or resource of this group.

The lack of teachers' mobility can be considered as a difficulty – only 18.1% have indicated that they exercise for at least 30 minutes every day. 51.7% of the surveyed teachers indicated that they drank more than a few alcoholic beverages a day. In general, this may indicate a tendency for the teachers to consume alcohol daily and do more than they should and may indirectly indicate to a method of stress management that is harmful to the teachers' health.

In addition to the questions suggested by Wagnild (Table 2), the teachers were asked to describe their emotional experience and the support they needed when they worked on distance. The most frequently mentioned emotions are exhaustion (23.4%), stress, anxiety (20.3%), hopelessness and despair (11.0%) etc.

The results in Table 2 were obtained from open-ended questions where the teachers had to enter their own answers about feelings and emotions during distance learning. Some answers were not received, so the total number of respondents (N) is lower.

Table 2. Emotions mentioned by teachers working on distance ($N = 611$)

	Frequency	%	Cumulative%
Exhaustion	143	23.4	23.4
Anxiety, stress	124	20.3	43.7
Hopelessness and despair	67	11.0	54.7
Fun, positive emotions	66	10.8	65.5
Loneliness	40	6.5	72.0
Anger and outrage	33	5.4	77.4
Fear, misunderstanding	25	4.1	81.5
Peace	23	3.8	85.3
Dissatisfaction, disgust	22	3.6	88.9
Nonsense	22	3.6	92.5
Sense of responsibility and duty	19	3.1	95.6
Boredom and tiredness	11	1.8	97.4
Thrill	9	1.5	98.9
Creativity	5	0.8	99.7
Sense of freedom	1	0.2	99.9
Sense of organisation	1	0.2	100.0

As exhaustion, tension, anxiety, stress, hopelessness, despair, helplessness, depression and sadness are mentioned by the study respondents, it can be assumed that emotional crisis, stress management exercises, which include SEHS scale *Emotional competence*, should be planned. The helplessness indicator could include a lack of support when you are alone and do not know what to do at school.

When the teachers were asked what kind of psychological support they would need when working on distance, it was stated that encouragement and evaluation from the school administration would be well-received (22.6%), that the teachers would like to have counselling (19.5%), and that it was worthwhile to feel the support of the colleagues (7.7%).

When asked about the main difficulties faced by the teachers working on distance, such problems as overwork (23.3%), emotional difficulties (14.6%), negative attitudes of students and their parents towards the teacher (12.2% and 8.2%) were mentioned.

The next question for research was set in the third part of the results analysis: how do the correlations between SEHS-T and RS indicators demonstrate a potential problem in the context of the socio-emotional health in the sample of the teachers?

The correlations between the SEHS-T scales and the total RS in the sample are positive: as one scale and/ or subscale increases, the other scale also increases. Both used scales come from positive psychology and point to respondents' resources, not to their difficulties. The results of both surveys are high or medium high in the entire sample. The relationship between SEHS-T and RS does not identify significant psycho-emotional health difficulties in the sample of the teachers.

As the correlation analysis did not reveal any correlations that could indicate problems, the regression analysis was performed to determine any variable that could predict the teachers' resilience or social-emotional health.

The following tables (Table 3 and Table 5) present a regression analysis, and they show that each of the supplementary questions in the RS survey predicts SEHS-T and RS to some extent.

Teachers' health self-evaluation explains 4.53% of RS variation. Healthier teachers report higher RS results and vice versa. How depressed teachers feel themselves explains 4.75% of RS variation – more depressed teachers reported lower RS results. Accordingly, the teachers who eat healthy and do not drink alcohol daily, report higher RS results, than those eating not so healthy and drinking daily. Regression explains 2.79% and 2.36% of RS variation.

Table 3. Regression analysis of RS survey results with additional questions (*N* = 636)

Variable (questions from RS)	Non-standard coefficient		Standard coefficient	*t*
	B	Standard deviation	Beta	
I have been feeling depressed last weeks	4.53	0.81	0.23	5.60**
Basically, I value my health as	4.74	0.96	0.20	4.93**
I eat healthy every day	2.79	1.12	0.09	2.40**
I drink SOME * or NO alcohol per day (*1 drink per day for women, 1–2 drinks per day for men)	–2.36	1.12	–0.08	–2.12**

**p < 0,01

Table 4. Sociodemographic parameters (*N* = 636)

Indicator		Frequency	%
Sex	Male	30	4.7
	Female	605	95.3
Age	till 30	65	10.2
	31–40	111	17.5
	41–50	189	29.8
	51–60	193	30.4
	60 or more	77	12.1
Education	Bachelors' degree	190	29.9
	Higher professional education	89	14.0
	Masters' degree	342	53.9
	PhD	5	0.8
	Other	9	1.4
Type of school	preschool	51	8.0
	general educational institution	500	78.7
	special educational institution	6	0.9
	profession educational institution	53	8.3
	educational institution of interests	6	0.9
	other	19	3.0
Teacher's workload	full-time	517	81.4
	part-time	118	18.6

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Indicator		Frequency	%
Teacher's salary (full-time)	till 710 euro	162	25.5
	710–1000 euro	408	64.3
	more than 1000 euro	66	10.2
Place of residence	Rīga	171	26.9
	Near Rīga region	79	12.4
	Other city	248	39.1
	Town or rural area	137	21.6

Table 5. Regression analysis of SEHS-T results with additional questions ($N = 636$)

Variable (questions from RS)	Non-standard coefficient		Standard coefficient	t
	B	Standard deviation	Beta	
I have been feeling depressed last weeks	7.40	1.13	0.27	6.58
Basically, I value my health as	7.25	1.32	0.22	5.46
I eat healthy every day	4.46	1.62	0.11	2.76

How depressed the teachers feel themselves explains 7.40% of SEHS-T variation – more depressed teachers reported lower SEHS-T results. The subjective opinion about their health explains 7.25% of SEHS-T variation – more subjectively healthy teachers reported higher results and vice versa. Accordingly, the teachers eating more healthy report higher SEHS-T results; thus, eating habits explain 4.46% of SEHS-T variation.

Conclusions

RS data show that Latvian teachers have a high and moderate vitality rate. That allows the authors to assume that the teachers in the sample are generally able to renew their psychological resources and withstand the pressures. However, in some cases, the teachers may also have low vitality rates.

The correlations between SEHS-T and RS in the Latvian sample do not indicate to serious difficulties in the psycho-emotional health of the teachers.

In contrast, the seven supplementary questions attached to the questionnaire provide important information that can be interpreted as providing the main difficulties of the surveyed group.

17% of the respondents acknowledged that they had experienced a epressed mood often or all the time during the last week, while 72% had experienced this feeling at least once during the week. In the context of distance work, the most frequently mentioned emotions are burnout, stress, anxiety, and despair.

The answers to the supplementary questions suggest that majority of the teachers have experienced a lack of empathy from their colleagues, administration, pupils, and their parents as well during distance learning.

The main items affecting the SEHS-T and RS results are related to physical health – proper eating and high self-evaluation of health, and mental health – depressiveness.

It can be concluded that the main problems of the teachers are related to interpersonal communication, but the resource to solve these problems is personality traits. It suggests that the support programme should include exercises aimed at developing a more positive angel of treating the world, conscious self-esteem.

When planning the content of the support programme, exercises for emotional crisis intervention and stress management should be planned, which also includes the idea of the SEHS-T sub-scale *Emotional competence*.

There are some limitations of the study. As the participation in the survey was voluntary, it is possible that the questionnaires were completed by teachers who had a sufficiently higher psycho-emotional capacity, and by teachers who experienced fewer difficulties during the distance work. Those teachers who felt themselves bad, who were on the verge of burnout, or already beyond it, probably did not fill in the questionnaires. So, the relatively high rates of SEHS-T and RS in the sample of the teachers can be partly explained by the principle of voluntary participation in the study.

The second limitation of the study could be the socially desirable answers provided by the respondents. It is possible that in some cases the teachers provided responses indicating higher levels of SEHS-T and RS as they felt they were expected to do or based on a relatively common stereotype among the teachers that they have to be successful with everything, to be omnipotent, to be able to adapt to different situations.

It should also be noted that the surveys used in the study are focused on finding out the positive experiences of individuals. Consequently, negative experiences are not fully reflected in surveys. In turn, the additional questions included in the survey, aimed at finding out the negative experiences of individuals, show significant difficulties experienced by teachers during distant teaching.

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SOCIAL-EMOTIONAL HEALTH AND RESILIENCE OF TEACHERS IN SLOVAKIA

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ABSTRACT

The present study examined social-emotional health and resilience of teachers in Slovakia, constructs which are relevant to requirements teachers have been facing over past years. Social-emotional health has been considered in terms of covitality construct as a synergistic effect of positive mental health. Covitality consists of twelve psychological indicators grouped into four domains – belief-in-self, belief-in-others, emotional competence and engaged living. Resilience has been conceptualized as a personality characteristic which reduces negative effects of stress and increases adaptation. The first aim of the present study was to examine level of covitality, its domains and indicators, and level of resilience of teachers in Slovak schools. The second aim was to examine the relationship between covitality and resilience. The sample consisted of 400 Slovak teachers who completed Social-Emotional Health Survey-Teachers (SEHS-T) and Resilience Scale (RS) during months of May through June 2021. Results indicated high level of covitality for 91.3%, and average level for 8.8% teachers. Resilience was rated at very low and low level by 6.8%, below average level by 17.8%, average level by 28%, and high level by 13.3% teachers. Most teachers rated resilience at an above average level (34.3%). Correlational analysis revealed moderate positive associations between all domains of covitality and resilience. Three covitality domains – engaged living, belief-in-self and emotional competence, and seven covitality indicators – self-efficacy, zest, self-regulation, optimism, cognitive reappraisal, gratitude and colleague support, were identified as predictors of resilience. Findings are discussed in terms of prediction and support of social-emotional health and resilience of teachers in Slovakia.

Keywords: social-emotional health, covitality, resilience, teacher, resilience predictors

Introduction

In recent years health-related issues have been considered of utmost importance nationwide, Europewide and worldwide. Individual states

have actively participated, through state health legislations, in enhancing processes related to health and its prevention, as well as in defining the sources of health hazards. One of the primary tasks of state health legislation in Slovakia according to the Strategic framework 2013–2030 is to improve health and minimize health discrepancies related to sudden and unexpected lifestyle changes (Slovak Medical Chamber, 2013).

Teacher profession is very demanding in terms of workload and places exceptional demands upon teachers and their personality (Paulík, 2017). One of key requirements placed upon teachers by society are characteristics of "good" teacher which include professional and social competence, qualification, personal maturity and resilience (Black & Howard-Jones, 2000; Paulík, 2017). Personality characteristics that were identified as related to teacher job performance during selection and education of future teachers are conscientiousness and emotional stability (Dvorská, 2018). Excessive psychological workload of teachers often takes its toll in the form of health problems what is consequently affecting students in educational process (Čáp & Mareš, 2001). Research on consequences of teacher stress in Slovakia and Czech Republic found that the most common reasons associated with stress are excessive administrative burden, lack of free time, insufficient school facilities, unhealthy interpersonal relationships with colleagues, school management and students (Křivohlavý, 1998; Paulík, 2017; Vančová, 2017; Zelina, 1997) and inadequate support from school management (Křivohlavý, 1998). Similarly, results from school climate research indicated that Slovak teachers provided lowest ratings for peer and adult relations and school physical environment (Gajdošová & Majerčáková Albertová, 2019). Research on stress and coping in elementary and high school teachers revealed that the most significant stressor was excessive workload and constant expectations placed upon quality of work performance (Dvorská, 2018). According to Zelina (1997) 29% of Slovak teachers reported burnout and this number was expected to increase due to higher average age of teachers (Onderčová, 2003; Vančová, 2018).

As previously stated, there is an urgent need to pay attention to health, satisfaction, wellbeing and psychological resilience of teachers who are, together with parents, involved in raising fully functioning individuals. Education should provide opportunities not only for development of performance-focused cognitive and academic skills but also for development of social-emotional competencies in the forms of engaged living, belief in self, belief in others as important factors of student and teacher mental health (Renshaw et al., 2014). Research on social-emotional health of Slovak teachers, conducted on a specific sample of inclusive school teachers prior the COVID-19 pandemic, showed that teachers rated their social-emotional health at high average to high level (Bisaki, 2018).

The COVID-19 pandemic has brought about significant problems in youth and adult mental health (Majerčáková Albertová & Gajdošová, 2021; Nozdrovická, 2020). Research on attitudes of Slovak population conducted by Slovak Academy of Sciences found frequent reports of loneliness, anxiety, anger, nervousness and depressive symptoms, in youth particularly symptoms of anxiety, depression and stress were present (Urban, 2020 in Nozdrovická, 2020). After several months of pandemic over fourth of participants reported declines in mental health, 44.4% reported nervousness, 39.4% anger, 28.3% loneliness and 25% anxiety. Overall 48.2% of respondents experienced depressive symptoms (Nozdrovická, 2020). Another research on mental health of Slovak elementary school students conducted during the second wave of COVID-19 pandemic found that 54% of students reported feelings of loneliness, 24% of students reported anxiety and depressive symptoms and 54% of students reported problems with attention (Majerčáková Albertová & Gajdošová, 2021).

Stemming from the tradition of positive psychology and its focus on human strengths, the social-emotional health model understands health as an interplay of twelve psychological indicators associated with positive growths and improved quality of life (Renshaw et al., 2014). These indicators are grouped into four domains: belief in self, belief in others, emotional competence and engaged living (Renshaw et al., 2014). Greater number of positive psychological indicators is related to more optimal individual development (Lee & Yoo, 2015). Furlong et al. (2013) introduced the construct of covitality which represents "synergistic effect of positive mental health resulting from the combination of multiple positive psychological strengths" (p. 758).

Resilience, according to Wagnild & Young (1993), is a "personality characteristic that moderates the negative effects of stress and promotes adaptation" (p. 165). Resilience which is at the core of coping is "frequently attributed to the individuals who, in the face of overwhelming adversity, are able to adapt and restore equilibrium to their lives and avoid potentially deleterious effects of stress" (Wagnild & Young, 1993, p. 165). Resilience is a universal capacity for successful coping with life challenges or adversities and fosters positive adaption in the context of changes. As a multifactorial psychological phenomenon it is one of those complex dispositions that promote optimal individual development in the context of past and present adversity. Resilience enables the individual to precede and overcome adversities, cope with challenging situations and adapt to challenges throughout the lifespan. It is a complex disposition which provides the individual with opportunities to develop competencies in challenging times (Szobiová et al., 2014).

Wagnild (2016) found that resilience differentiates between individuals with good and ill health. Individuals with poor health scored low in

resilience, while individuals with fair and excellent health scored respectively in resilience. Werner (2005) showed that higher resilience is related to self-esteem, activity, specific skills and belief in others in the sense of social support, similarly to some covitality indicators. In Slovak research strong associations between social-emotional health and resilience were also established on a sample of high school students (Kapušová & Szobiová, 2018; Szobiová et al., 2020). Aldridge et al. (2015) found that wellbeing (mental, physical and social wellbeing) and resilience were moderately related, while other authors examined associations between resilience and health, wellbeing and quality of life (Windle, 2011), as well as resilience and covitality (Mortazavi & Yarohali, 2015).

Given the negative consequences of COVID-19 pandemic and the need to promote mental health of teachers, the aim of the present study was to determine the level of social-emotional health, its domains and psychological indicators, the level of resilience and to examine whether there are relationships between covitality, its domains, indicators and resilience, on a sample of 400 teachers from Slovakia.

Current study

The present study, conducted within the research project *"Supporting teachers to face the challenge of distance teaching"* was designed based on the presented evidence on the relationships between covitality and resilience (Mortazavi, & Yarohali, 2015; Werner, 2005; Windle, 2011). The study aimed to examine social-emotional health and resilience on a sample of 400 Slovak teachers.

Following research objectives were identified:
1) To examine the level of covitality, domains and indicators of social-emotional health
2) To examine the level of resilience
3) To investigate relationships between resilience and covitality
4) To examine differences in covitality and resilience is respect of selected sociodemographic factors.

Method

Participants and procedure

The study sample included 400 teachers from various regions of Slovakia, 359 females (89.8%) and 41 males (10.3%). Participants were divided into 5 age-related categories. The category up to 30 years included 20 participants (5%), category 31-40 years included 98 participants (24.5%), category 41–50 years 132 participants (33%), category 51–60 years 121 participants (30.3%), category above 60 years 29 participants (7.3%).

278 (69.5%) of participants were elementary school teachers, 122 (30.5%) of participants were high school teachers. 251 (62.8%) of participants resided in urban areas and 149 (37.3%) in rural areas. 5 categories were formed based on the length of teacher experience: 1. group of teachers with experience up to 5 years consisted of 39 (9.8%) participants, 2. group with 6–10 years of experience had 40 (10%) participants, 3. group of teachers with 11–20 years had 119 (29.8%) participants, 4. group of teachers with 21–30 years consisted of 110 (27.5%) participants and 5. group of teachers with above 31 years of experience had 92 (23%) participants.

Data were collected online through Google forms platform during the months May to June 2021. Teachers were approached through regional pedagogical centres. They were provided information about the purpose of the study and confidentiality. The administration time was approximately 15 minutes. All ethical aspects were considered and approved by the authors' university ethics committee.

Measures

Social-Emotional Health Survey-Teachers (SEHS-T; Furlong & Gajdošová, 2017) is a measure of social-emotional health for teachers which was adapted from the Social-Emotional Health Survey-Higher Education (SEHS-HE; Furlong et al., 2017). SEHS-T assesses latent trait covitality and four primary domains – belief-in-self (BIS), belief-in-others (BIO), emotional competence (EC) and engaged living (EL). The first domain, BIS, consists of 3 subscales derived from the social-emotional learning theories and self-determination theory: self-efficacy, persistence and self-awareness. The second domain, BIO, has 3 subscales related to resilience construct: family support, institutional support and colleague support. The third domain, EC, consists of 3 subscales based on constructs from social-emotional learning theories: cognitive reappraisal, self-regulation and empathy. The last domain, EL, consists of 3 subscales based on positive psychology constructs: gratitude, zest and optimism (Renshaw et al., 2014). Overall SEHS-T consists of 12 subscales and 48 items rated on a scale from 1 (*very much unlike me*) to 6 (*very much like me*), with covitality scores ranging between 48 to 288. The level of covitality is interpreted as low, moderate and high, as shown in Table 1. Bisaki (2018) found that internal consistency of SEHS-T was .93, with covitality domains ranging between .76 to .89. Internal consistency of SEHS-T in the present study was assessed with Cronbach's alfa and was ranging from .84 (EC), .87 (BIS), .86 (BIO), to .91 (EL). Covitality showed strong internal consistency with Cronbach's $\alpha = .95$.

Table 1. Scoring of Social-Emotional Health Survey-Teachers

SEHS-T	High level	Moderate level	Low level	Min.	Max.
	> 208	128-207	< 127	48	288
SEHS-T Domains	High level	Moderate level	Low level	Min.	Max.
	> 52	32-51	< 31	12	72
SEHS-T Indicators	High level	Moderate level	Low level	Min.	Max.
	> 18	11-17	< 10	4	24

Resilience scale RS (Wagnild & Young, 1993) is a measure used to assess individual resilience with two subscales: personal competence and acceptance of self. RS contains of 25 items which are rated on a 7-point Likert style scale (1 = *strongly disagree* to 7 = *strongly agree*). Total score ranges between 25 to 175 and is interpreted as shown in Table 2. Wagnild & Young (1993) analysed 12 studies conducted with RS with samples of varied age, education and socioeconomic background and found Cronbach's alpha coefficients ranging between .72 to .94. In Slovak research Szobiová et al. (2014) examined concurrent validity on a sample of 492 university students with Child and Youth Resilience Measure (CYRM) and found moderate correlation coefficients and good internal consistency (α = .85). In the present study reliability of RS was assessed with Cronbach's alpha coefficient. Reliability of the 25-item measure was very satisfactory, α = .94.

Table 2. Scoring of Resilience Scale

Resilience Scale RS	Moderately high and high level	Moderately low to moderate level	Low level	Min.	Max.
	> 145	116-144	< 115	25	175

Data Analyses

Internal consistency was assessed with Cronbach's alpha coefficients. Relationships were analysed with Spearman's rank correlation coefficients. The Chi-Square statistic and Cramer's were used for testing relationships on categorical variables. Normal distribution of data was assessed via histograms, skewness and kurtosis of analysed variables. Due to non-normally distributed data, non-parametric tests, Mann-Whitney U Test (gender, residence, type of school) and Kruskal-Wallis Test (age, length of teacher experience) were used for comparison of differences between the groups. Effect sizes were calculated with Eta coefficients (η^2). Stepwise multivariate linear regression analysis was used to determine which domains and indicators of social-emotional health are predictors of resilience.

Results

Social-emotional health

Based on results of frequency analyses, high level of covitality was found in 91.3% (N = 365) participants and moderate level in 8.8% (N = 35) participants. None of the participants reported low level of covitality. Results for individual domains are shown in Table 3.

Table 3. Levels of Social-Emotional Health Domains

Levels of Covitality Domains	Belief-in-Self	Belief-in-Others	Emotional Competence	Engaged Living
Low	1 / 0.3%	3 / 0.8%	0 /0%	2 / 0.5%
Medium	46 / 11.5%	51 /12.8%	34 / 8.5%	66 / 16.5%
High	353 /88.3%	346 / 86.5%	366 / 91.5%	332 / 83%

Item frequency analysis indicated that in the domain BIS, participants responded with 5 to 6 points (on a scale from 1 = *very much unlike me* to 6 = *very much like me*), to almost all items for individual psychological indicators self-efficacy and self-awareness (70–85% of participants), with an exception of an item in indicator persistence, in particular item assessing problems with attention (61.6%), where 40% of teachers reported problem with concentration.

In the domain BIO, over 70% of participants reported high scores in indicator family support and colleague support. In indicator school support, 35.6% of teachers reported strong sense of togetherness at school. 51.8% of participants rated this item at medium level and 12.8% negatively (1 and 2 scale points).

Responses in the domain EC were rated with scale points 5 to 6. In empathy indicator, 90% of participants responded with highest scores to following items: *"I feel badly when my colleagues are put down"*(93.8%), *"I'm aware of others hardships"* (91.8%) and *"I try to understand how other people feel and think"* (85.6%).

In the domain EL, only indicator gratitude was assessed with points 5 to 6 by over 90% of participants ("When I reflect on my life, there is much to be grateful for" (95.8%), or *"I appreciate those who are close to me"* (98.5%). In this domain, in particular in indicators zest and optimism, scores were found to be lower, e. g. for item *"I feel energetic in my life right now"* only 49.5% of participants used high ratings, 42.3% used medium ratings and 8.3% reported lack of energy.

Descriptive statistics results showed that covitality median ($Mdn = 242$) and scores for covitality domains (BIO and EC, $Mdn = 61$ and BIS and EL, $Mdn = 60$) were at high level. Covitality empirical range was 130–288, empirical maximum of four covitality domains was at 72 points, minimums were at EL = 16, BIS = 19, BIO = 25, EC = 36, as presented in Table 4.

Table 4. Descriptive statistics of covitality and covitality domains

	Covitality	BIS	BIO	EC	EL
Mean	238.65	59.65	59.50	60.67	58.84
Median	242.00	60.00	61.00	61.00	60.00
SD	24.75	7.22	8.14	6.53	8.04
Skewness	–.76	–.75	–1.03	–.63	–.89
Kurtosis	1.23	2.06	1.46	.57	1.80
Minimum	130.00	19.00	25.00	36.00	16.00
Maximum	288.00	72.00	72.00	72.00	72.00

Table 5. Descriptive statistics of covitality indicators Belief-in-Self and Belief-in-Others

	Self-efficacy	Persistence	Self-awareness	Family support	Institutional support	Colleague support
Mean	20.03	19.02	20.59	20.97	18.11	20.42
Median	20.00	19.00	21.00	22.00	19.00	21.00
SD	2.84	3.09	2.62	3.54	3.58	3.86
Skewness	–.97	–.60	–.99	–1.68	–.89	–1.51
Kurtosis	2.21	.51	2.42	3.30	.70	2.77
Minimum	6.00	5.00	6.00	4.00	5.00	4.00
Maximum	24.00	24.00	24.00	24.00	24.00	24.00

Table 6. Descriptive statistics of covitality indicators Emotional Competence and Engaged Living

	Cognitive reappraisal	Empathy	Self-regulation	Gratitude	Zest	Optimism
Mean	18.54	21.56	20.58	22.70	18.45	17.68
Median	19.00	22.00	21.00	24.00	19.00	18.00
SD	3.34	2.39	2.42	2.10	3.67	3.56
Skewness	–.52	–1.22	–.62	–2.65	–.64	–.60
Kurtosis	.04	1.99	.16	10.90	.31	.69
Minimum	7.00	11.00	12.00	7.00	5.00	4.00
Maximum	24.00	24.00	24.00	24.00	24.00	24.00

Differences in covitality medians between males (Mdn = 239) and females (Mdn = 242.3) were very low and statistically insignificant, as per results of Mann- Whitney U test (p = .83) and Eta coefficient of small effect size (η^2 = .00001). Similarly, differences in covitality between urban (Mdn = 243.23) and rural teachers (Mdn = 238.20) were low, statistically insignificant (p = .33), with small effect size (η^2 = .002). Differences in covitality between high school teachers (Mdn = 243.8) and elementary school teachers (Mdn = 241.16) were low, statistically insignificant (p = .10) of small effect size (η^2 = .007).

Teachers of all ages scored high in covitality, with teachers up to 30 years lower (Mdn = 232) compared to teachers above 60 years (Mdn = 251). Differences in age categories are statistically insignificant (p = .33), with small effect size (η^2 = .01).

Length of teacher experience did not differentiate between the groups, all teachers scored high in covitality, with lowest scores found in teachers with up to 5 years of experience (Mdn = 238) and highest in teachers with 6–10 years of experience (Mdn = 245). Differences were statistically insignificant (p = .78), with small effect size (η^2 = .004).

Resilience

According to frequency analysis results, very low level of resilience was found in 2.3% (N=9) of participants, low level in 4.5% (N=18), below average level in 17.8% (N=71), average level in 28% (N=112), and high average level in 34.3% (N=137) of participants, with 13.3% (N=53) participants scoring at high level.

Item frequency analysis showed that 84% of teachers provided positive ratings to item "*My life has meaning*". Teachers rated independence (83.5%), pride in accomplishment, (81.6%), reliability (78.6%), ability to cope in life (82.6%) with highest scale scores 6 and 7 (1 = *strongly disagree* to 7 = *strongly agree*). Limits of Slovak teachers were found in admitting of problems (29.5% does not admit a problem, 25% has difficulties with admitting a problem). 39.8% teachers are able to face adversities, 35.8% do not dwell on things they can't do anything about, 53.3% are able to get through hard times, 61% reported they have enough energy for everyday activities and 63.3% reported they are able find a way out of difficult situation.

Median score of resilience was 145, at high level of resilience, with empirical range 28 to 175. Descriptive statistics are reported in Table 7.

Median resilience score in females was 144.79 and males 142.00, difference was 2.79. Differences tested with Mann-Whitney U test were not statistically significant (p = .52), effect size was small (η^2 = .001).

Table 7. Descriptive statistics for resilience

	Resilience
Mean	142.08
Median	145.00
SD	18.71
Skewness	–1.27
Kurtosis	4.60
Minimum	28.00
Maximum	175.00

Median scores for age categories of teachers started at youngest category of teachers up to 30 years with lowest scores (*Mdn* = 131.5). Highest scores in resilience were found for eldest teacher category above 60 years (*Mdn* = 151). Differences between these groups were statistically significant (*p* < .001), with small effect size (η^2 = .04).

Differences between categories of urban (*Mdn* = 145.83) and rural teachers (*Mdn* = 143.37) were small, statistically significant (*p* = .03), with small effect size (η^2 = .01).

Groups of teachers according to length of professional experience differed in level of resilience. Results are presented in descending order: teachers with 11–20 years of experience (*Mdn* = 147), teachers with more than 30 years of experience (*Mdn* = 145.16), teacher with 6–10 years of experience (*Mdn* = 141.33) and teacher with up to 5 years of experience (*Mdn* = 139.5). Differences between the groups were not statistically significant (*p* = .07), with small effect size (η^2 = .02).

Elementary school teachers reported lower resilience (*Mdn* = 143.28) in comparison to high school teachers (*Mdn* = 148.44). Difference was statistically significant (*p* = .002), with small effect size (η^2 = .02).

Relationships between resilience and covitality

Significant positive strong correlation was found between resilience and covitality. Significant positive correlations were found also between resilience and four domains (r_s = .49 to r_s = .72; *p* < .01). Moderate to strong positive corrections were shown between resilience and covitality indicators zest, self-efficacy, optimism, cognitive reappraisal, persistence, self-awareness, gratitude, institutional support and self-regulation. Three covitality indicators are in weak, yet significant relationship with resilience: empathy, family support and colleague support (Table 8).

Table 8.   Correlations between resilience and covitality, covitality domains and indicators

	Resilience
Covitality	.76**
BIS	.68**
BIO	.49**
EC	.61**
EL	.72**
Self-efficacy	.66**
Persistence	.54**
Self-awareness	.53**
Family support	.39**
Institutional support	.44**
Colleague support	.31**
Cognitive reappraisal	.63**
Empathy	.39**
Self-regulation	.40**
Gratitude	.45**
Zest	.66**
Optimism	.65**

*Note. N = 400; **p < .01*

According to cross tabulation report, out of participants with average covitality level, 20% reported very low resilience, 28.6% low, 40% below average level and only 2.9% above average level of resilience. Out of participants with high covitality level, 0.5% reported very low resilience level, 2.2% low, 15.6% below average and 29.9% average resilience level. High covitality level and above average resilience level was reported by 37.3% participants while high level in both variables was reported by 14.5% participants, as seen in Table 9.

The strength of association between all covitality categories and resilience was moderate (X^2 (5, $N = 400$) = 135.08, $p < .001$, $V = .58$)

Table 9. Crosstabulation between resilience and covitality

			Level of resilience						Total
			Very low	Low	Below average	Average	Above average	High	
Covitality	**Average level**	% within covitality index	20.0	28.6	40.0	8.6	2.9		100.0
		% within resilience	77.8	55.6	19.7	2.7	0.7		8.8
		% of total	1.8	2.5	3.5	0.8	0.3		8–8
	High level	% within covitality index	0.5	2.2	15.6	29.9	37.3	14.5	100.0
		% within resilience	22.2	44.4	80.3	97.3	99.3	100.0	91.3
		% of total	0.5	2.0	14.3	27.3	34.0	13.3	91.3
Total		% within covitality index	2.3	4.5	17.8	28.0	34.3	13.3	100.0
		% within resilience	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		% of total	2.3	4.5	17.8	28.0	34.3	13.3	100.0

Covitality domains and indicators as predictors of resilience

Based on results of regression analysis, three covitality domains ($R^2 = .61$; $p < .001$), EL ($\beta = .42$), BIS ($\beta = .33$) and EC ($\beta = .15$) and seven covitality indicators ($R^2 = .62$; $p < .001$), self-efficacy ($\beta = .34$), zest ($\beta = .17$), self-regulation ($\beta = .13$), optimism ($\beta = .20$), cognitive reappraisal ($\beta = .13$), gratitude ($\beta = .12$) and colleague support ($\beta = -.08$), were identified as predictors of resilience.

Discussion

The aim of current study was to examine the level of covitality and resilience in Slovak elementary and high school teachers, to investigate relationships between these constructs and to identify differences based on sociodemographic variables.

Results showed that over 90% of Slovak teachers reported high level of covitality and over 80% of teachers reported high level of covitality domains (BIS, BIO, EC, EL). These results are in line with previous research

conducted in Slovak inclusive school prior the pandemic according to which Slovak teachers rated social-emotional health at high average to high level (Bisaki, 2018). Overall, Slovak teachers rated highly their emotional competences, in particular empathy, self-awareness, self-efficacy, as well as belief in others, in particular family support. Limits were identified in support of school as an institution, in particular in the sense of togetherness and colleague support, and in optimism of teachers in pandemic times.

Positive results were found for resilience with 47% teachers at an above average level, out of which 13% teachers were highly resilient and 34% teachers had resilience at an above average level. 25% teachers scored below average and 28% at average level of resilience. Although these results are in support of findings by Wagnild & Young (1993), they are on the contrary to research by Tusaie et al. (2007) who found that approximately one third of population achieves high resilience level.

Sociodemographic variables, age, gender, place of residence, type of school, length of teacher experience, yielded several significant results. In terms of age, highest level of resilience was found for teachers above 60 years, while lowest level of resilience was reported by youngest teachers below 30 years of age. Although this difference was significant, effect size was low. These findings are in line with previous literature according to which resilience increases with age (Wagnild & Young, 1993; Wagnild, 2016).

Length of teacher experience was another sociodemographic variable that accounted for differences between teachers in resilience, although not significantly. Teachers with less than 5 years of experience reported lowest level of resilience on the contrary to teachers with 11 to 20 years of experience who reported highest level of experience. Teachers with over 31 years of experience scored slightly lower in resilience.

Results also revealed that level of resilience differed significantly among elementary and high school teachers. Elementary school teachers who reported average resilience level, scored lower than high school teachers who were at high resilience level. These findings suggest that elementary school teachers might benefit from activities targeted towards resilience development as research has also shown that elementary school teachers are more prone to stress (Paulík, 2017; Vančová, 2017; Zelina, 1997). Their work-related stress has been previously associated with administrative burden, lack of free time, insufficient school facilities, unhealthy interpersonal relationships with colleagues, school management and students (Paulík, 2017; Vančová, 2017; Zelina, 1997). Resilience as a way of coping and diminishing consequences of stress while increasing adaptation thus appears an important protective factor in mental health of teachers (Rutter, 2012; Šolcová, 2009; Wagnild & Young, 1993).

In the present study no gender differences were not found which are findings in line with previous research (Mesárošová et al., 2014; Wagnild & Young, 1993; Wagnild, 2016). Small differences in resilience were identified between teachers working in urban and rural schools.

Results demonstrated moderate positive associations between covitality, four covitality domains and resilience. Positive associations were found also between twelve covitality indicators and resilience – moderate between zest, self-efficacy, optimism, cognitive reappraisal, persistence, self-awareness, gratitude, institutional support and self-regulation, and weak yet significant between empathy, family support and colleague support and resilience. These findings are in support of previous research on associations between these constructs (Renshaw et al., 2014; Kapušová & Szobiová, 2018; Mortazavi & Yarohali, 2015; Szobiová et al., 2020; Wagnild & Young, 2016), yet they extend the current knowledge on asample of elementary and high school teachers.

Another significant finding of the present study is that three domains, EL, BIS and EC, and seven covitality indicators, self-efficacy, zest, self-regulation, optimism, cognitive reappraisal, gratitude, colleague support, were identified as predictors of resilience. Previous research on predictors of resilience established some interesting results on personality traits and health-related characteristics indicating presence of covitality indicators (Szobiová et al., 2014; Mesárošová et al., 2014). Mesárošová et al. (2014) found that social support explained significant percentage of variance in resilience in the resilience model. In the present study indicator addressing social support was the indicator of colleague support. Szobiová et al. (2014) found that resilience examined in the model of individual resilience predicted lower neuroticism, higher extraversion, consciousness, creativity, tolerance and good interpersonal relationships. In the present study it may be assumed that resilience predictors engaged living, zest, colleague support, cognitive reappraisal and self-regulation shared some similarities with those previously identified (Szobiová et al., 2014).

Despite presented findings, several limitations need to be addressed. The size of the study sample and low variability in terms of gender should be considered when interpreting the results. Second, data was collected with surveys which are sensitive to providing socially desirable answers. Third, the cross-sectional design did not allow to measure teacher experience at various time points. Nevertheless, the present study opens numerous paths for future research on social-emotional health and resilience in teachers. Teachers as providers of education, are exposed to demanding situations on a daily basis and are expected to act promptly and professionally at all times. By promotion of teacher mental health and resilience, quality of school environment, effectivity of educational process and social

climate in schools may be enhanced, positively affecting mental health of other involved individuals, i. e. students and other school employees. Multidisciplinary professional teams which have lately become reality in some Slovak schools could provide practical application of effective tools and strategies targeting teacher mental health and resilience.

This study was conducted as part of the research project Erasmus+ "Supporting teachers to face the challenge of distance teaching (PERSONA)", which primary aim is, based on research results, to introduce effective complex program for teachers targeting mental health and personal competencies to help them cope with present requirements in the field of education.

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PROMOTING TEACHER RESILIENCE TO REMAIN IN THE PROFESSION

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ABSTRACT

With the growing teacher attrition rates caused by aging, burnout, and changes in the education system, more and more teaching positions remain vacant every year. Despite the difficulties, however, there are a lot of teachers who choose to remain in the profession; they feel emotionally fulfilled at their jobs and masterfully balance their work requirements and personal life. Resilience might be one of the factors that supports teachers in dealing with the demands of their professional life. The aim of the research is to explore how teacher resilience can help teachers remain in the profession.

Transcendental phenomenological research was carried out to reach the aim of the study. A questionnaire for in-service teachers was used to measure their resilience with the Resilience Scale for Adults (RSA) and select interview candidates. Narrative interviews were carried out with eight resilient teachers in three different stages of their careers – working as teachers for five years or less, six to fifteen years and more than fifteen years. The interviewees represented three different cities, various school sizes, and both private and public schools. In the interviews, the teachers' understanding of resilience and their experiences as resilient educators were explored.

Based on the narrative interviews, ways to maintain teacher resilience were proposed. It can be concluded that resilient teachers are more likely to remain in the profession, as they are able to mobilize their internal and external resources to cope with the challenges of the job.

Keywords: teacher attrition, teacher career stages, teacher resilience, teacher retention

Introduction

Each September there are several hundred vacant teaching positions in schools in Latvia. At the beginning of the 2020/2021 school year, there were almost 400 vacant teaching positions, in addition to that, over a hundred vacant support staff positions, such as school psychologists and speech therapists (Dēvica, 2020). Before the 2021/2022 school year, the number had risen to "almost 500 vacant positions in Riga and neighboring regions" (Dēvica, 2021, para. 3, https://www.lsm.lv/), and at the end of November 2021, after schools let go staff who had chosen to not get

vaccinated against Covid-19, the number of missing educators in Latvia had risen to 1330 (Dundure, Upenieks, 2021). Teacher burnout due to the high demands and low prestige of the profession, lack of support for in-service teachers, especially novice teachers, changes in the education system, and the high attrition rate of novice teachers are some of the issues that schools face when it comes to filling the vacant teaching positions.

The ongoing Covid-19 pandemic has escalated the challenges that educators have faced in the past and highlighted new struggles. Many educators have had to learn to work with new technology, while simultaneously teaching it to the students, which creates more work on the top of changing lesson content to fit remote or hybrid learning. Teachers working in-person have been forced to take on duties to enforce epidemiological safety in the schools. In the 2020/2021 schoolyear, the procedures were limited to disinfection, student flow organization in the hallways, and ensuring ventilation in the facilities, while at the fall semester of the 2021/2022 schoolyear, in addition to the aforementioned, teachers were tasked to organize student screening for Covid-19.

After the fall of the Soviet Union, Latvia and other post-socialist countries, "have witnessed a shift towards an increasingly market-oriented value regime, together with a reshuffling of the hierarchy of occupations" (Kesküla, Loogma, 2017, p. 249). With the rise of capitalism and neoliberalism, the landscape of education has changed as well. The introduction of centralized exams and school ranking in the late nineties was one of the ways how neoliberal values were reproduced by education. The aim of centralized exams is to "determine the efficacy of secondary schools" (Baltic Institute of Social Sciences, 2002, p. 5), therefore, teachers' work becomes quantifiable by looking at their students' exam results. In this case, it is assumed that schools and the teachers working there can be held fully accountable for their students' academic success. Challenging interactions with students' parents can be demoralizing experiences for teachers, especially if they are blamed for the academic struggles of their students.

Despite the difficulties in the profession, there are plenty of teachers who choose to keep working in schools and enjoy long and fulfilling work lives. Throughout teachers' careers, a professional support network at work, positive teacher-student relationships, and good leadership within the school help retain teachers (Day, Gu, 2007). Resilience, the ability to deal with difficulties and bounce back after different crises by utilizing the inner (emotional) and outer (social and systemic) resources that are available to a person (Friborg et al., 2005), can further support teachers in dealing with the demands of their professional life. The concept of resilience has been used in neoliberal discourse as well, referring to resilience as an individual's quality that combines neoliberal values, "adaptability,

flexibility, and entrepreneurialism (…) stemming from heightened competition and inequality" (Mavelli, 2019, p. 226), however, in this research resilience is understood as a dynamic concept that responds to one's life experiences and is influenced by an individual's personality, social environment, and the social structures that they are part of. Existing research on teacher resilience confirms that both teachers' personality and external factors affect resilience (Day, Gu, 2007; Mansfield et al., 2012).

Day and Gu (2007) in their research separate three dimensions of teacher resilience – related to teachers' lives inside and outside school and related to the interaction of teachers' identities and education policies. Meanwhile, Mansfield et al. (2012) divide teacher resilience in four dimensions – profession-related, social, emotional, and motivational dimension. Mansfield's and colleagues' research highlights resilient teacher qualities in each of the dimensions, which allow teachers to gauge the extent to which they possess the characteristics. Being aware of what a resilient teacher is and how a resilient teacher acts at work could be the first step to fostering teacher resilience on a personal level.

The research question explores how teacher resilience affects teacher retention in schools.

Methodology

The method of research used in this study was transcendental phenomenology. It is believed that by studying peoples' experiences with a phenomenon, one can find similarities and patterns that could be called essences, and those could be used to create a generalizable description of that phenomenon (Neubauer, Witkop and Varpio, 2019). This research follows an outline of transcendental phenomenological research formulated by Moustakas (1994).

First, the research question is formulated. According to Moustakas (1994), the researchers should choose a research topic that they are personally invested in and, before organizing an empirical study, carry out a literature review. Then, ethical principles are established. The study participants are informed of the research process, and it is ensured that their participation is voluntary and they can withdraw at any point. As the phenomenological interviews may include confidential and sensitive information, consensual participation is paramount. The empirical study usually includes the phenomenological interview, in which the researchers take the role of planners and mediators, whereas the research participants lead the interview to thoroughly describe their experiences. Moustakas (1994) emphasizes that researchers must approach the interviews with a fresh perspective, having let go of any preconceptions about the topic.

After the interviews the research participants are allowed to review the interview transcripts and make corrections if necessary. Finally, data are organized and analyzed by categorizing similar themes in the participants' answers, developing descriptions of the phenomenon based on the similarities, and, finally, formulating the essence of the phenomenon.

Transcendental phenomenology allowed understanding what it meant to be a resilient teacher from the perspective of teachers who experienced the phenomenon, and the connection between resilience and teacher retention. Two data collection methods were used in the research – a questionnaire to assess teacher resilience and select interview candidates and narrative interviews. To discover different perspectives on teacher resilience and avoid participant response bias, teachers in three different stages of professional life were interviewed – teachers with five or fewer years of work experience, teachers with six to 15 years of work experience, and teachers with more than 15 years of work experience. The teachers represented three different places in Latvia – Riga city and its suburbs and two towns: Dobele, and Sigulda. Two teachers worked in a school with 150 or fewer students, one – in a school of about 500 students, three teachers worked in schools of around 800 students, and two worked in schools of 1000 or more students. Both private and public schools were represented in the sample. One of the teachers was at the time of the study a primary school teacher, the other teachers worked both in basic education school and secondary education school.

The interview candidates were selected according to two criteria, their work experience and resilience score, which was measured in the questionnaire using the Resilience Scale for Adults (RSA). The RSA is a 33-point scale, in which protective factors in six domains of resilience are measured – perception of self, perception of future, personal structure, social competence, family cohesion, and social resources. The questions are presented as a semantic differential scale. A higher overall score indicates higher levels of the protective factors (Morote et al., 2017). The item-response ranges in this questionnaire were reduced from seven to five for clarity. The scale was translated from English into Latvian using the back translation method. The translations were compared, and the most precise translations were used to write the statements in Latvian.

The questionnaire was anonymous, but participants were asked to indicate their contact details if they agreed to participate in the second part of the study, the interview. Demographic data collected were age, gender, level of education, teaching subject, and years of work experience as a teacher. The demographic data were chosen according to Friborg's et al. (2003) scale validation study and complemented by research-specific data. Like in Friborg's et al. (2003) study, in the questionnaire description the

word resilience was not used, the questionnaire was called a personal competence questionnaire.

31 responses were received. Out of the 31 respondents, 16 had 15+ years of work experience, nine had five years or less of work experience, and six had 6–15 years of work experience. 21 respondents held master's degrees, one was a master's level student, seven held bachelor's degrees and two were bachelor's level students. Five science teachers had completed the questionnaire, the majority being chemistry teachers (four out of five). 13 respondents were language teachers – eight Latvian language teachers, two Russian language teachers (one also taught history), two English language teachers, and one German language teacher. Four respondents were the teachers of mathematics, four respondents were primary teachers who taught most or all subjects, two respondents were programming teachers and arts, psychology and special education were represented by one respondent each. The highest resilience score was 157, it was a German as a foreign language teacher in the 60–69-year-old age group with more than 15 years of teaching experience. Only one respondent scored below 100 points (Figure 1).
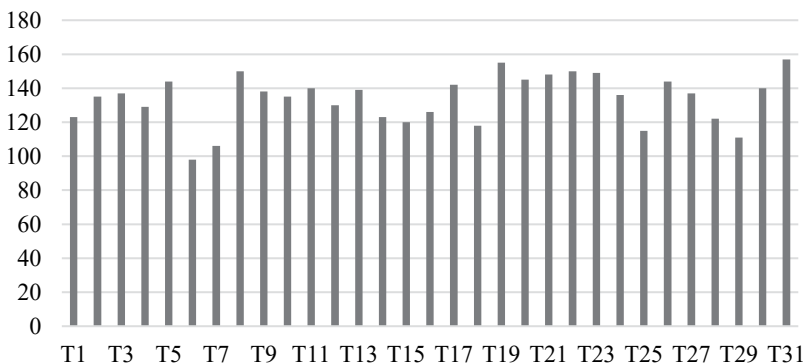
Figure 1. Questionnaire Respondents' Resilience Scores

The lowest score was 98 points, the teacher with this score was in the 18–29-year-old age group, a bachelor's degree student at the time of the questionnaire. She was chemistry teacher. The mean resilience score among respondents was 133. Out of the respondents of resilience scale questionnaire, nine narrative interview candidates were chosen. To preserve the anonymity of the participants, they were given coded names and the names of the schools where they worked were not included in the study.

The majority of the interview candidates, seven out of nine, held master's degrees (Table 1). The subjects the candidates taught ranged from extracurricular activities to humanities and sciences. Teachers from various subject fields were valuable interview candidates, as they could have different experiences regarding workload in terms of contact hours and work outside classes. The resilience scores of the interview candidates ranged from 111 (the lowest score in the group) to 157 (the highest in the group). The age, work experience and gender of the candidates were representative of the general teacher profile in Latvia.

Table 1. Interview Candidates' Questionnaire Results (sorted by work experience and resilience score, ascending in each work experience group)

	Age Group	Gender	Education	Work Experience (years)	Subjects	Resilience Score
T1	18–29	M	MA (student)	< 5	Chemistry	129
T2	30–39	F	MA	< 5	English	138
T3	18–29	F	MA	< 5	Physics, engineering	144
T4	30–39	F	BA	6–15	Math, Latvian, social studies, design and technologies, class lesson	121
T5	30–39	F	MA	6-15	Chemistry laboratory work, extracurricular	123
T6	40–49	F	BA	15 +	Latvian, Latvian literature	111
T7	60–69	F	MA	15 +	Latvian, Latvian literature	155
T8	60–69	F	MA	15 +	German	157

The interview candidates represented three groups: teachers with up to five years of work experience, teachers with 6–15 years of work experience, and teachers with more than 15 years of work experience. The interviewees were able to choose the format of the interview, remotely, using the video conferencing application Zoom, or in person. Two of the interviews took place in person and the rest were held via Zoom.

Narrative interviews were chosen in this research because it was crucial to avoid a formal and structured question-answer format, instead, allowing the interviewees to guide the interview process and speak in-depth about their experiences. Open-ended questions were asked, and the teachers were

invited to elaborate on their answers. The areas covered in the interviews were the following:

- The teachers and their duties in their workplaces.
- A typical workday.
- The teachers' careers.
- Their first year as teachers and suggestions for other novice teachers.
- Resilience in the profession and maintaining it over the course of the teachers' careers.
- Challenges the teachers have faced and overcome.
- Professional plans for the upcoming years and speculations about the future of the profession.

As the questions concerned the teachers' past experiences alongside their current realities and hopes for the future, they were encouraged to give examples to illustrate their ideas and talk about their feelings candidly. The teachers' answers allowed the authors to summarize their understanding of resilience and outline resilience hindering and promoting factors.

Results

Although the years of work experience were different among the interviewed teachers, their understanding of resilience and the ways they experienced it as teachers were similar (Table 2).

The qualities teachers identified in themselves, i. e., having a sense of humor, being easy-going, sociable, organized etc., corresponded to Mansfield's et al. (2012) framework of teacher resilience. These qualities were named regardless of the amount of work experience.

All but one interviewee mentioned "*overwork*" in the interviews. The one teacher who did not talk about this issue, worked part-time, less than half a load. The two teachers with $15+$ years of experience spoke about overwork in the past tense, when recalling the earlier years of their careers. Overwork, along with teacher attrition and lack of teachers to fill the vacancies in schools, were three of the main issues that teachers mentioned as threats to teacher resilience that need urgent solving.

Teachers in the <5 year and 6–15-year group talked about *"the need for psychological support and professional development aimed at improving teachers' social-emotional skills and burnout prevention"* (T2, T5). This could be especially topical in the early stages in teachers' careers when teachers are developing their professional identities and are at the most risk of leaving the career. Perhaps, being proactive about setting boundaries and taking care of one's well-being is becoming more common, especially among younger generation. As an example of this, one of the interviewees said that *"the older generation teachers were more likely to come to school ill than miss a day of work"* (T6).

Teachers in all three groups talked about salaries. Three aspects were highlighted, firstly, the relation between teacher prestige and salary, meaning, *"low pay implies that the work teachers do is of little worth"* (T6), therefore, *"does not deserve respect of students and their parents"* (T1). Then, the amount of work that teachers are required to do outside contact teaching hours and lesson preparation *"does not reflect in [their] salaries"* (T5).

Table 2. Summary of Resilience Definitions and Factors that Promote and Hinder Teacher Resilience by Triangulation Group (number of mentions indicated in parentheses)

Triangulation Group	Teachers' Understanding of Resilience	Teacher Resilience Promoting Factors	Teacher Resilience Hindering Factors
Teachers with Five or Less Years of Work Experience	Ability to identify and use resources Prioritizing rest Work-life balance Managing emotions Optimism	Ability to ask for help (2) Nurturing positive relationships with coworkers (3) Sharing work Available instructional materials Support system for novice teachers (3) Hobbies (3)	Overwork (3) Burnout (3) Lack of professional boundaries (2) Low pay (3) Unclear salary calculation Low prestige of the profession (2) Lack of student accountability (2)
Teachers with Six to Fifteen Years of Work Experience	Living without depression and burnout Adaptability	Proactive problem solving (2) Good leadership (principal and school heads) (2) Professional boundaries Work-life balance Teacher-student relationships (2) Personal and professional values aligned	Lack of instructional materials Overwork (2) Lack of student accountability (2) Low pay Stress Low prestige of the profession (2)
Teachers with More than Fifteen Years of Work Experience	Ability to enjoy life (3) Enjoying work (2) Ability to find strength within (2) Looking put together (2) Work-life balance (2) Hobbies (3) Optimism (3)	Hobbies (3) Nurturing positive relationships with coworkers (3) Teacher-student relationships (3) Acknowledgement Ability to ask for help	Low pay (2) Inequitable salary calculation Low prestige of the profession (2) Lack of student accountability Burnout Overwork (2)

Finally, the lack of transparency in salary calculations, since *"a proportion of the pay depends on school principals, teachers do not know how much they will earn until they receive their first full month's salary in October"* (T3). In this regard, financial support for teacher education students was mentioned as well. *"The number of university-funded places in the teacher education bachelor's programme is limited, which means that some students have to take out loans to be able to study"* (T1). Having to pay off the loan might be a reason why some potential teachers choose a different study programme, especially when there is the option to enter a free second-level professional higher education programme.

All teachers mentioned having supportive coworkers in their schools. Two teachers in the 6-15-year group spoke highly of their principals, admitting that *"principals who fight for their teachers – either by providing support with challenging students or by dealing with practical matters, like allocating resources that teachers need, – create a sense of belonging"* (T4, T5).

The sense of community and school as a community center was mentioned by teachers in the 6–15 and 15+ year groups. For them, a sense of community helped teachers feel valued and appreciated, as well as improved teacher-parent relationships. All three teachers who spoke about the school *"as community center"* (T4, T6, T7) worked in small schools (500 students or fewer), meanwhile, in bigger schools, teachers found support in their subject departments.

Teachers in the three groups had different experiences as novice teachers, some remembered their first year with fondness, others were glad it was over. The challenges teachers faced differed. One teacher (15+) recalled having *"no instructional materials to work with"* (T8) and having to find a way to organize work for her students, another (15+) talked about visiting the teachers she knew to prepare and admitting that *"university had not prepared [her] for teaching"* (T6), two of the novice teachers (<5) mentioned mentorships that did not fulfill their promise, and one teacher (6–15) discussed the importance of having *"school heads that notice struggling novice teachers"* (T4). From these diverse experiences, it can be concluded that novice teachers need support, and a formal induction programme must be organized in all schools to reduce novice teacher attrition.

It seems that nurturing one's resilience relates heavily to boundaries and the ability to say no. One teacher (<5) talked about the additional duties during the pandemic preventing her from being able to rest between classes. Teachers in all three groups admitted that they *"do not take work home and prefer working in school to create a physical and emotional boundary between their jobs and home life"* (T2, T3, T4, T7, T8). Another teacher (<5) suggested that *"teachers as a collective should refrain from talking about their job as a calling that requires constant attention, but rather treat it as any other*

job" (T3). An example of a teacher boundary that was described by one teacher (6-15) was her no parent phone call policy after a certain time.

Teachers in all three groups discussed the importance of respect, highlighting that *"educators must respect students to receive the same in return"* (T2, T4, T7). Two teachers (15+) emphasized the role of mutual respect in their classroom management procedures. One (6-15) admitted that positive feedback from students *"is motivating and helps her maintain resilience"* (T4). Two teachers at different career stages (6-15 and 15+) spoke about the connection between teacher attitudes towards students and the prestige of the profession, concluding that *"the teachers who are positive and respectful are more esteemed"* (T4, T7).

Two teachers at different stages of their careers (<5 and 15+) linked sharing to resilience. Both teachers had a network of teachers outside their schools that they had turned to in times of need. "*Sharing work helps save time, a valuable resource for teachers*" (T3, T6).

In all three groups teachers named hobbies and free time as resilience promoting factors. Both structured free time activities, e. g., folk dancing group, and unstructured free time activities, e. g., traveling or taking walks were mentioned. One teacher (6–15) acknowledged that *"due to teachers' workloads, many do not have time for hobbies"* (T5), meanwhile, two teachers (<5 and 15+) maintained that *"hobbies have to be deliberately worked into teachers' schedules"* (T1, T8) regardless of business. In addition to that, teachers in all groups talked about values to some extent. Those with more work experience were able to clearly name and define their values, which is related to a more established professional identity. Clearly defined values and a job that reflects them can help teachers maintain their resilience when it comes to choosing a workplace.

Discussion

To contextualize how teachers can maintain their resilience, four levels of impact were outlined (Figure 2) – *policy, schools, teachers as a collective, and teachers as individuals.*

Policy is placed at the bottom of the pyramid as the foundation to emphasize that there is a limit to how much teachers can withstand even if they are resilient. No amount of positive thinking, adaptability, or love for one's work can measure up if teachers are systemically undervalued, underpaid, and overworked. Teacher retention must become a priority for policymakers to ensure a high-quality education for students.

At the second level of the pyramid, ***schools*** are placed. Teachers in all three groups talked about the importance of school climate, coworkers, and good management. Schools can have a tremendous impact on teacher

resilience and attrition. For novice teachers, a formal, good practice-based induction programme within the school could offer support both with practical matters that differ on a school-to-school basis and typical novice teacher challenges like classroom management issues. School heads, namely the principal and deputies, should support teachers in challenging interactions with students or parents. In addition to that, school heads can impact the emotional climate of the school by facilitating teacher collaboration and helping teachers build positive relationships. Schools can also help teachers set and enforce boundaries, for instance, by legislating against parents contacting teachers outside work hours.
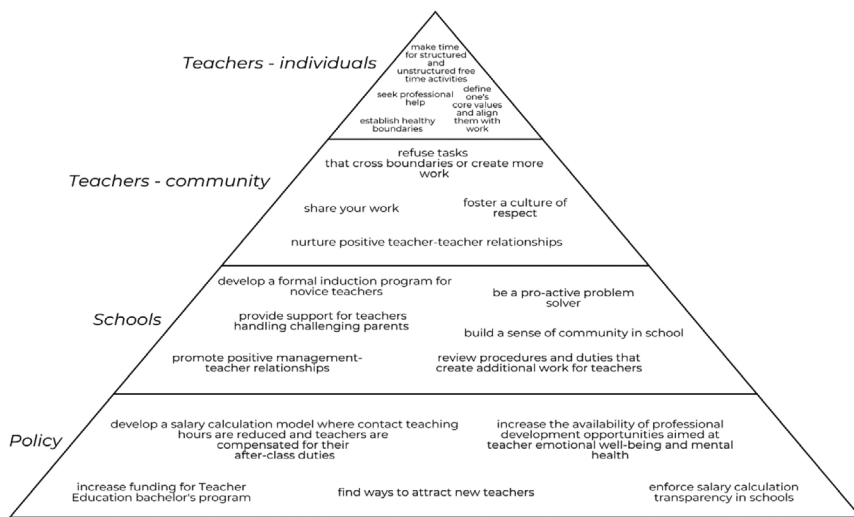
Figure 2. Recommendations for Maintaining Teacher Resilience (Semjonova, 2021, p. 67)

For **teachers as a collective and teachers as individuals**, the research confirmed that positive relationships between teachers and students can help teachers maintain their resilience. Having hobbies and finding ways to pleasantly spend one's free time can sustain teachers' resilience as well.

Although resilience is linked to personality and the ways how individuals can utilize resources, the impact of external factors, like community, society, and decisions made by the government, cannot be denied. For teachers, maintaining resilience starts with taking care of themselves and their well-being and not letting work consume their life. However, schools, namely, coworkers and school heads can contribute significantly to teacher resilience, as can policy makers. Asking teachers to continually bounce back from disrespect, overwork, and burnout is not asking teachers to be resilient, it is enabling exploitation.

Conclusion

Teacher's career requires continuous learning and adaptation. Building a strong professional identity in the early stages of the professional life and developing teaching competences alongside supportive coworkers and management is crucial to sustaining motivation and efficacy over the course of teachers' careers. The ongoing teacher shortage caused by teacher attrition due to burnout, retiring, etc. requires urgent action to retain the existing teachers and attract new candidates to fill the growing number of vacant positions. In-service educators need to find ways to promote their resilience to cope with the challenging aspects of the profession.

The data of transcendental phenomenological research allowed concluding that resilient teachers who can utilize their internal and external resources to overcome challenges are more likely to cope with the demands of the job and, consequentially, remain in the profession. However, the extent to which teacher resilience is impacted by external factors prove to be greater, as it has already been assumed prior to the research.

To maintain resilience teachers should define their core values and use them as an internal compass to guide their professional life. Establishing and maintaining healthy boundaries with work and a work-life balance that allows teachers to pursue hobbies outside work and rejecting the notion that teaching requires self-sacrifice are essential to preventing burnout, one of the culprits of teacher attrition. Fostering a culture of respect in the school can increase teacher resilience, as positive relationships between school management, teachers, students, and their parents not only improve the emotional climate of the school, and increase student achievement, but also promote shared accountability for student learning and teacher well-being.

However, to significantly improve teacher job satisfaction and reduce attrition, it is not enough that teachers find ways to maintain their resilience. The issues that were identified by the interviewees and confirmed by the findings in existing studies of teacher resilience and attrition, like the low prestige of the profession, overwork, inadequate pay, or lack of quality instructional materials are problems that require action on a systemic level and cannot be solved by individuals. Therefore, it can be concluded that promoting teacher resilience and helping teachers maintain their resilience on a personal level can be a temporary solution to a complex problem, but it must not replace action on a policy level.

As the research had limited scope, it could be useful to measure teacher resilience on a larger scale and compare teachers' experiences of resilience not only looking at different stages of their professional lives, but also comparing different subjects and workloads. It was found that

teacher professional development should include learning that helps teachers improve their emotional well-being and mental health, so a study measuring teacher resilience could help gauge the need for that in specific teacher groups, e. g., full-time teachers, science, technology, engineering and math teachers, or other teacher communities.

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DEVELOPMENT AND INITIAL VALIDATION OF AN ASSESSMENT TOOL FOR STUDENT TRANSVERSAL COMPETENCES

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ABSTRACT

Transversal competences have been receiving an increasing attention in educational research and practice over the last decades. As a part of a wider project for assessment of students' competences in higher education, a group of experts developed a model of transversal competences for students, consisting of civic, digital, entrepreneurial, global, innovation, and research competences (each with corresponding sub-competences and facets), based on the analysis of theory and previous research. In this paper, we present an assessment tool that was developed and tested for measurement of the competences in this model. The final version of the assessment tool is a self-report survey with 292 behavioural indicators that are evaluated on a 7-point Likert-type scale estimating how characteristic each indicator is of the respondent's typical behaviour. The initial pool of behavioural indicators was created by the same group of experts based on the analysis of previous research and best practice examples in transversal competence assessment. From this pool, an initial version of the survey with 440 indicators was created and administered to 686 respondents from 8 study domains representing all study levels. Factor analysis of responses revealed a six-factor structure corresponding to the initial theoretical competence model. After further psychometric analysis, the final version of the assessment tool was formulated. Each of the six competences is further divided into 3–5 sub-competences, with each sub-competence consisting of 2–5 facets. Each facet is measured with multiple behavioural indicators describing basic, intermediate and advanced level of the respective competence. The results showed good construct validity of the tool, with the expected competence differences appearing between different study levels, and the expected relations emerging between the competence indicators and average grades. Practical applications and possibilities for further development of the assessment tool are discussed.

Keywords: Assessment, transversal competences, higher education, competence model, self-report scales

Introduction

The European Pillar of Social Rights (2017) states that fostering the development of competences is one of the objectives of the European Education Area, which can make full use of the potential of education and culture as a driver of employment, social justice, active citizenship and means of exploring European identity in all its diversity. People need the right set of competences to maintain their current standard of living, support a high level of employment, and promote social cohesion, considering the demands of a changing society and the labour market (European Commission, 2017).

This set of competences is referred to as transversal competences, which are the "cornerstone" of each individual's personal development and relevant to the application of any knowledge and skills, and many international organizations, national governments, and businesses are improving the transversal competences of workers, pupils, and students as one of society's priorities (ESCO, n.d.; Whittermore, 2018). Transversal competencies go beyond a particular field or study program because they are interdisciplinary in nature – they can be used in a variety of disciplines, situations and contexts to perform a variety of tasks (Economou, 2016; Florea, 2014; Pârvu et al., 2014).

The New Skills Agenda for Europe declares that university graduates have a better chance of finding a job and earning more than people with a secondary education qualification (OECD, 2019; European Union, 2016). This means that higher education institutions play an essential role in developing transversal competencies for university students. Higher education is an area that simultaneously ensures the training of highly qualified specialists in the critical sectors of the labour market, as well as the development and renewal of human research capital and the creation of a knowledge base, which is a prerequisite for creating new knowledge, technologies, and innovations.

The growing importance of transversal competencies in the learning outcomes of higher education programs and the demand for them in the labour market, and the need to assess them are emphasized by higher education expert Robert Waagenar from the University of Groningen in the Netherlands. The researcher underlines that the development of transversal competencies requires their precise definition, a clear understanding of what needs to be taught (integration with the field of study), well-defined learning outcomes, and indicators of competence development levels (Wagenaar, 2018).

Several initiatives have been launched internationally to develop tools for assessing competence development. In 2008, the OECD initiated the project for the Evaluation of Learning Outcomes in Higher Education

(hereinafter AHELO) With the support of the European Commission Tuning CALOHEE within the project Measuring and Comparing Achievements of Learning Outcomes in Higher Education in Europe, competence matrices have been developed in 6 study programs (AHELO, 2015). Additionally, in 2016, the Council for Aid to Education (CAE), in collaboration with the OECD, initiated a new study to assess competencies and compare results between Member States (OECD, 2019; International Tuning Academy Groningen, 2018). These projects were initiated in various fields: physics, nursing, education, teacher education, history, and civil engineering, but no measurements have been made. In 2016, the Council for Aid to Education (CAE), in collaboration with the OECD, launched a new study to assess competencies and compare results among the Member States. However, this was not supported at the national level. Considering the above, it is more appropriate to take measurements at the national level during the study period for student competence development.

In turn the Recommendation of the European Parliament and the Council of the European Union entitled "The Key Competences for Lifelong Learning" (2016, 2018) identified eight key competencies: communication in the mother tongue, communication in foreign languages, mathematical, science, and technology, digital, learning to learn, social and civic, entrepreneurship and initiative, and cultural awareness and expression competence (European Commission, 2016, 2018). The above competencies are considered equally important and can be used in various contexts and combinations. Hence they were merged and structured to define the six transversal competencies, each with specific sub-competencies and facets (Rubene et al., 2021), analysed in this study.

Digital competence relates to human behaviour when using information and communication technologies and digital media to effectively communicate and manage information, collaborate, create and disseminate knowledge in professional (and/or learning) activities. This competence consists of such sub-competences as *information literacy and data literacy*, *communication and cooperation, digital content creation, security,* and *problem solving,* each with multiple facets (See Table 1 for a detailed list of all sub-competences and their facets).

Innovation competence is characterised by knowledge and skills required for long-term implementation of useful, effective improvements or innovations (new products or solutions, inventions (process outcomes), methods, devices, ideas) that are useful to people or organizations. This competence consists of *creativity, critical thinking, initiative, teamwork,* and *networking.*

Entrepreneurial competence is characterised by the ability to create, see or transform ideas and opportunities into action by mobilising and

effectively using necessary resources to achieve goals. This competence is determined by *problem-solving skills and creativity to create value – for oneself and/or society, identification, mobilisation, and effective use of internal and external resources,* and *initiative and action orientation.*

Civic competence is characterised by human participation in civil and social life which contributes to social and political well-being and sustainability at the level of community, nation, Europe, and globally. This competence includes *understanding and implementation of civil rights and obligations, knowledge and application of the principles of a democratic society,* and *community involvement.*

Global competence is characterised by the student's ability to assess local, global and intercultural issues, understand and appreciate different perspectives and worldviews, engage in open and effective interaction with people from different cultures, and work for collective well-being promoting sustainable development. This competence consists of *information management, awareness of diversity in local and global communities, intercultural communication and cooperation,* and *values and attitudes in an intercultural environment.*

Research competence is characterised by human behaviour in conducting research activities in one's professional (and/or learning) environment, the activities which result in solving an independent research problem. This competence consists of *attitude and ethics, conceptualisation of knowledge/ research planning, conducting research,* and *collaboration and communication.*

As we know there are many different types and methods of competence assessment – observation in action, simulation, modelling, narrative methods, tests, quizzes, mind and/or conceptual maps, portfolios, interviews, discussions, focus group discussions, but self-assessment scales and questionnaires are quite common (Darling-Hammond et al., 2013; McConlogue, 2020). For example, the scoping review of measuring instruments for assessment of students' digital competence revealed that the majority of the studies report on a designed self-assessment questionnaire (Litiņa & Miltuze, 2021). Self-assessment questionnaires allow assessment in large groups (such as university students), saving time and resources.

Methodology

Model and item development

The model of students' transversal competences was developed by a group of experts, representing various study domains, based on the analysis of theory and previous research. The expert group suggested the structure of the model, as well as formulated the initial pool of behavioural indicators for measuring the competencies in the model. For each competence, sub-competence and

facet, multiple behavioural indicators were formulated, corresponding to a basic, intermediate, and advanced level of the competence. The item pool development was also based on the analysis of previous research and best practice examples in transversal competence assessment. From this item pool, an initial version of the survey was created and, after pilot testing on a sample of 19 students, administered in the study reported below.

Participants

The participants in the study were 686 students (47% female) from seven Latvian universities, representing 8 study domains and all study levels (bachelor, masters, and doctoral). The average age of the participants was 25 years (SD = 7.6 years). Most participants (89%) were full-time students, with 62.7% attending academic study programmes and 37.3% attending professional study programmes.

Measures

The participants completed an online survey (hosted on *QuestionPro* platform), responding to 440 behavioural indicators on a 7-point Likert-type scale estimating how characteristic each indicator was of the respondent's typical behaviour. In addition, the participants responded to 25 demographic questions about their gender, age, place of residence, work and study experience.

Results

The data analysis was organised in two stages. The first stage included a psychometric analysis of the results to optimise the assessment tool. The second stage included an initial validation of the tool.

As the first step, the empirical distribution of the frequency of answers to each survey question was examined (i. e., what percentage of the respondents had chosen each of the response options on the scale from 1 to 7, when evaluating each specific behavioural indicator). This analysis helped to identify (a) those items, where the participants had experienced difficulties in evaluating some behavioural indicator, for example, because of an incomprehensible formulation; (b) those items which poorly differentiated among respondents, for example, because the behavioural indicator is too common or too rare in the student sample; (c) those items, for which the distribution of results did not correspond to the intended complexity of the described behaviour (e. g., with very few respondents indicating a presumably easy behaviour, or many respondents indicating high levels of presumably difficult behaviour). The potentially problematic items were flagged for further analysis.

In the next step of the analysis, the items (behavioural indicators) corresponding to each competence were included in an exploratory factor analysis (using a parallel analysis method with oblique Promax rotation) in the Factor module of JASP 0.14.1 software. Thus, in total, six exploratory factor analyses were performed. Exploratory factor analysis allows identifying factors, or "latent variables", in the data, where the items/questions corresponding to the same factor correlate more closely than the items corresponding to different factors, or the items that do not correspond to any factor. These analyses allowed to test whether items, which were theoretically presumed to measure the same facet, or the same sub-competence, load on the same factor (latent variable), and whether the overall structure of inter-item correlations within each competence correspond to the theoretically presumed structure of the competence, i.e, the analysis reveals empirical factors (latent variables) corresponding to each of the theoretically presumed sub-competences and their facets. As a result of the factor analysis, it was possible to identify those items (behavioural indicators) that did not correspond to any of the factors, or that corresponded to more than one factor, as well as those items that did not correspond to the theoretically presumed factor (according to the competency structure suggested by the experts), but corresponded to another factor. Also at this stage of the data analysis, none of the statements were yet excluded from the survey, but potentially problematic items were flagged.

Next, the results of the empirical distribution analysis and exploratory factor analysis were compared to decide which items should be excluded from the assessment tool or reformulated. In total, 149 items were excluded and 30 items were reformulated, resulting in the final version of the assessment tool with 291 behavioural indicators covering 6 transversal competences with 25 sub-competences and 86 facets. Internal consistency reliability indicators (Cronbach's alpha) were calculated for each facet and sub-competence. The Cronbach's alpha coefficient reflects how closely the answers to several questions are correlated, thus showing whether it is justified to calculate a common index from these questions, for example by summing each respondent's answers or calculating the arithmetic mean of each respondent's answers to these questions. This step in the data analysis was necessary to make sure that the behavioural indicators within each sub-competence and each facet could be combined into a common index that could then be used to analyse the data and draw conclusions. The internal consistency indices for all facets and sub-competencies were sufficient to calculate the corresponding arithmetic means. The descriptive statistics for all facets and sub-competences are provided in Table 1.

Table 1. Descriptive Statistics, Internal Consistency Reliability Indicators (Cronbach's Alpha), and Factor Loadings for All Facets and Sub-Competences of the Six Transversal Competences

Competences, sub-competences, and facets	No of items	Alpha	M	SD	Factor No	Loading
1. Digital competence						
1.1. Information literacy and data literacy	*12*	*0.90*	*5.37*	*1.06*		
1.1.1.Browsing and searching for information and digital content. data filtering	4	0.77	5.18	1.30	F1	0.548
1.1.2.Evaluation of data. information and digital content	3	0.90	5.69	1.21	F1	0.491
1.1.3.Data. information and digital content management	5	0.82	5.25	1.16	F1	0.662
1.2. Communication and cooperation	*17*	*0.94*	*5.13*	*1.14*		
1.2.1.Interaction with digital technologies	4	0.85	5.51	1.25	F1	0.584
1.2.2.Sharing using digital technology	3	0.82	5.27	1.37	F1	0.685
1.2.3.Cooperation using digital technologies	4	0.87	4.65	1.52	F1	0.588
1.2.4.Netiquette	3	0.89	5.32	1.32	F1	0.497
1.2.5.Digital identity management	3	0.77	4.89	1.36	F1	0.648
1.3. Digital content creation	*10*	*0.88*	*4.78*	*1.21*		
1.3.1.Digital content development	3	0.82	4.58	1.52	F1	0.696
1.3.2.Integration and re-development of digital content	2	0.75	5.03	1.45	F1	0.688
1.3.3.Copyrights and licensing	2	0.86	5.02	1.52	F1	0.479
1.3.4.Programming	3	0.75	4.55	1.53	F1	0.724
1.4. Security	*13*	*0.91*	*4.77*	*1.14*		
1.4.1. Device protection	5	0.83	4.96	1.28	F1	0.780
1.4.2. Protection of personal data and privacy	3	0.79	4.74	1.37	F1	0.815
1.4.3. Protection of health and well-being	3	0.74	4.72	1.31	F1	0.737
1.4.4. Environmental protection	2	0.86	4.66	1.52	F1	0.523
1.5. Problem solving	*7*	*0.91*	*5.27*	*1.19*		
1.5.1. Solving technical problems	2	0.82	5.30	1.40	F1	0.727
1.5.2. Needs assessment and technological solutions	3	0.83	5.16	1.31	F1	0.854
1.5.3. Identifying digital skills gaps	2	0.87	5.35	1.34	F1	0.637

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Competences, sub-competences, and facets	No of items	Alpha	M	SD	Factor No	Loading
2. Global competence						
2.1. Information management	*7*	*0.90*	*4.68*	*1.25*		
2.1.1. Search for information	3	0.80	4.82	1.34	F2	0.579
2.1.2. Evaluation and management of information content	4	0.86	4.53	1.32	F2	0.617
2.2. Awareness of diversity in local and global communities	*12*	*0.88*	*4.19*	*1.12*		
2.2.1. Awareness and understanding of different worldviews	3	0.88	4.83	1.34	F2	0.715
2.2.2. Cooperation at the local and international level	4	0.89	3.09	1.59	F4	0.805
2.2.3. Management of diversity policies	2	0.84	5.04	1.51	F2	0.652
2.2.4. Recognising the signs of radicalisation (hatred. violence. threats to human rights and calls for division of society)	3	0.94	3.80	1.72	F2	0.484
2.3. Intercultural communication and cooperation	*8*	*0.90*	*3.96*	*1.30*		
2.3.1. Communication in a multicultural environment	3	0.81	4.27	1.45	F2	0.636
2.3.2. Action modelling in an intercultural context	2	0.90	4.22	1.49	F2	0.632
2.3.3. Engagement in international activities	3	0.80	3.40	1.53	F4	0.686
2.4. Values and attitudes in an intercultural environment	*11*	*0.92*	*4.04*	*1.25*		
2.4.1. Moral and ethical principles and actions.	5	0.86	4.25	1.39	F2	0.559
2.4.2. Communication skills in intercultural and interreligious situations	3	0.81	4.41	1.40	F2	0.654
2.4.3. Actions to promote an inclusive environment	3	0.83	3.47	1.47	F4	0.633
3. Innovation competence						
3.1. Creativity	*18*	*0.96*	*4.68*	*1.18*		
3.1.1. Generation of ideas	6	0.91	4.72	1.23	F3	0.721
3.1.2. Improvements	6	0.91	4.57	1.29	F3	0.755
3.1.3. Problem solving	3	0.88	4.76	1.31	F3	0.702
3.1.4. Creative attitude	3	0.84	4.66	1.32	F3	0.777

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Competences, sub-competences, and facets	No of items	Alpha	M	SD	Factor No	Loading
3.2. Critical thinking	*15*	*0.96*	*4.83*	*1.12*		
3.2.1. Alternative thinking	4	0.88	4.93	1.18	F3	0.669
3.2.2. Identifying and analysing	4	0.91	4.92	1.20	F3	0.589
3.2.3. Generalisation	3	0.87	4.71	1.24	F3	0.649
3.2.4. Evaluation	4	0.91	4.76	1.27	F3	0.624
3.3. Initiative	*16*	*0.94*	*4.61*	*1.14*		
3.3.1. Engaging others	3	0.88	4.99	1.38	F3	0.790
3.3.2. Mobilisation	3	0.90	4.31	1.52	F3	0.841
3.3.3. Organisation and implementation of work	3	0.80	4.65	1.24	F3	0.740
3.3.4. Risk-related initiative-taking	3	0.88	4.32	1.42	F3	0.687
3.3.5. Active engagement and independence	4	0.84	4.76	1.21	F3	0.780
3.4. Teamwork	*6*	*0.93*	*5.17*	*1.25*		
3.4.1. Cooperation skills	3	0.87	5.16	1.33	F3	0.621
3.4.2. Teamwork improvement	3	0.88	5.18	1.26	F3	0.693
3.5. Networking	*7*	*0.93*	*4.39*	*1.34*		
3.5.1. Internal (within-team) networking	4	0.89	4.62	1.33	F3	0.654
3.5.2. External networking (outside the organisation)	3	0.88	4.15	1.54	F3	0.603
4. Civic competence						
4.1. Understanding and implementation of civil rights and obligations	*8*	*0.82*	*4.01*	*1.13*		
4.1.1. Relatedness of rights and obligations	4	0.74	3.58	1.25	F4	0.645
4.1.2. Social justice management	4	0.77	4.44	1.32	F2	0.705
4.2. Knowledge and application of the principles of a democratic society	*10*	*0.91*	*3.22*	*1.30*		
4.2.1. Management of binding regulations	3	0.77	3.40	1.43	F4	0.643
4.2.2. Local and international cooperation	3	0.92	2.84	1.64	F4	0.802
4.2.3. Governance of the political system	4	0.70	3.41	1.31	F4	0.686
4.3. Community involvement	*10*	*0.92*	*2.70*	*1.29*		
4.3.1. Involvement at the local and national levels.	3	0.86	2.76	1.53	F4	0.885

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Competences, sub-competences, and facets	No of items	Alpha	M	SD	Factor No	Loading
4.3.2. Involvement at the level of the global community	3	0.86	2.70	1.49	F4	0.833
4.3.3. Management of social and political protests	4	0.79	2.63	1.25	F4	0.760
4.4. Civic capacity	*6*	*0.92*	*2.94*	*1.47*		
4.4.1. Civic engagement and capacity in the local community	3	0.80	3.15	1.48	F4	0.793
4.4.2. Civic engagement. and capacity in a global context	3	0.91	2.72	1.61	F4	0.833
5. Research competence						
5.1. Attitude and ethics	*8*	*0.95*	*4.59*	*1.37*		
5.1.1. Research interest	2	0.88	4.41	1.51	F5	0.594
5.1.2. Responsible research	2	0.86	4.75	1.53	F5	0.710
5.1.3. Research ethics	4	0.91	4.62	1.43	F5	0.758
5.2. Conceptualisation of knowledge/ research planning	*15*	*0.26*	*4.71*	*1.24*		
5.2.1. Understanding the research context	4	0.92	4.73	1.37	F5	0.768
5.2.2. Critical analysis of information sources	5	0.90	4.86	1.26	F5	0.663
5.2.3. Research conceptualisation/ design	6	0.94	4.54	1.35	F5	0.843
5.3. Conducting research	*13*	*0.96*	*4.41*	*1.30*		
5.3.1. Implementation of research methodology	2	0.91	4.57	1.50	F5	0.893
5.3.2. Data analysis	3	0.89	4.25	1.40	F5	0.880
5.3.3. Interpretation of data and formulation of conclusions	3	0.89	4.31	1.40	F5	0.866
5.3.4. Organisation of the research process	5	0.93	4.50	1.41	F5	0.881
5.4. Collaboration and communication	*16*	*0.95*	*4.17*	*1.34*		
5.4.1. Collaboration in the research process	4	0.78	4.35	1.32	F5	0.566
5.4.2. Communication and publicity	9	0.94	4.11	1.45	F5	0.747
5.4.3. Practical application of research results	3	0.90	4.05	1.57	F5	0.654
6. Entrepreneurial competence						
6.1. Problem-solving skills and creativity	*17*	*0.94*	*4.34*	*1.13*		
6.1.1. Noticing opportunities	4	0.86	4.04	1.33	F6	0.669

Continued from previous page

Competences, sub-competences, and facets	No of items	Alpha	M	SD	Factor No	Loading
6.1.2. Creativity	4	0.81	4.25	1.28	F6	0.718
6.1.3. Vision	4	0.83	4.42	1.32	F6	0.799
6.1.4. Evaluation of ideas	3	0.84	4.75	1.31	F6	0.807
6.1.5. Ethical and sustainable thinking	2	0.81	4.26	1.48	F6	0.631
6.2. Identification. mobilisation. and effective use of internal and external resources	*14*	*0.92*	*4.73*	*1.03*		
6.2.1. Evaluation of own capacities	3	0.83	5.20	1.17	F6	0.638
6.2.2. Motivation and perseverance	2	0.74	5.06	1.28	F6	0.645
6.2.3. Mobilisation of resources	3	0.81	4.72	1.19	F6	0.682
6.2.4. Financial and economic competence	3	0.82	4.10	1.43	F6	0.626
6.2.5. Communication and mobilisation of human resources	3	0.89	4.56	1.42	F6	0.627
6.3. Initiative and action orientation	*15*	*0.93*	*4.88*	*1.04*		
6.3.1. Showing initiative	3	0.90	4.98	1.25	F6	0.696
6.3.2. Planning	3	0.86	4.97	1.23	F6	0.716
6.3.3. Action under uncertainty	3	0.75	4.85	1.21	F6	0.641
6.3.4. Teamwork	3	0.77	4.46	1.34	F6	0.585
6.3.5. Learning from experience	3	0.85	5.15	1.21	F6	0.615

All the calculated facet means were then included in a secondary factor analysis, again using the exploratory factor analysis method to form a six-factor solution (according to the number of transversal competences in the model). This step was necessary to make sure that the transversal competence structure observed in the data was broadly in line with the competence structure presumed by the experts. The results of the factor analysis are summarised in the last two columns of Table 1. The results of this factor analysis revealed that each of the six transversal competencies corresponded to its own factor (latent variable) with corresponding factor weights for the facets of the respective competence. It should be noted that for all but two competences all facets load on the same factor and do not load on any of the other factors, showing that each of these competencies forms its own latent variable that is clearly separable from the other factors (competences). For Civic and Global competences, a small number of facets are "switched" between the corresponding factors, indicating that, in the perception of the respondents, the content of these two competencies

was not as clearly separable as in the case of the other four transversal competencies. However, in general, the results of the factor analysis demonstrate a very good fit of the empirical data structure to the initial expert-defined competence structure, showing a good factorial validity of the transversal competences model.

Several additional analyses were performed to test-use the assessment tool for different types of analysis, as well as for the initial validation of the instrument. In order to check whether a higher level of studies corresponds to a higher level of development of transversal competences, the means of all sub-competences and their facets were compared between the three study levels included in the study (bachelor's, master's and doctoral) using a Kruskal–Wallis one-way ANOVA with Dunn's Multiple Comparison Test with Bonferroni correction for post-hoc comparisons. The detailed results are too voluminous to be presented here (they are available on request), but, out of the 111 comparisons made, 93 yielded the expected pattern, with the facet and/or sub-competence means increasing with the study level. In general, the comparison of study levels supports the validity of the assessment tool, because theoretically the study process should foster the development of transversal competences, and the obtained results are in line with this theoretical assumption.

As the development of transversal competences is organically related to the content of many study courses, theoretically the level of competence development should be related to the study results. To test this assumption, Spearman correlations were calculated between all sub-competencies (and their facets), and the weighted average grade for the previous semester indicated by the respondents. Again, the detailed results (available on request) are not presented here, but, out of 111 calculated correlations, 92 correlations revealed a significant positive correlation between a sub/competence and/or its facets on the one hand, and the weighted average grade of the respondents on the other, offering further support to the validity of the assessment tool.

Discussion

The analyses described above can serve as examples of potentially more detailed, focused analyses that allow data to be explored based on the specific interests and needs of the user of the competency assessment tool. For example, looking at the assessment of competencies within a group of students or specific subgroups, it is possible to identify those competencies, sub-competencies and facets that need more attention to be developed, allowing for appropriate adjustments to study plans and / or course content. The assessment tool can also be used at the individual level, providing feedback to individual students on the strengths and weaknesses of their

transversal competencies (after standardisation of the instrument in the later stages of the project it will be possible to compare the results of each individual with the population mean). The assessment tool can also be used for evaluating the transversal competencies of a particular student from different points of view (for example, the questionnaire can be filled in by the student himself/herself, the scientific supervisor, internship supervisor, or other people involved in the study process, allowing for a comparison among different assessments to get a more complete and objective view of the level of development and improvement needs of the student's transversal competencies).

Comparison of competencies, sub-competencies and facets is possible not only between study levels as in the example mentioned above, but also between study years within one study program (for example, at the beginning and end of studies). Also, using a similar methodology, different types of comparisons between study programs, study directions, study fields are possible, as well as comparison of competence assessment between groups of students according to different taylored criteria (for example, competencies can be compared depending on the previous training/ education, whether students work in parallel to their studies, various demographic factors, etc.).

The analysis of correlations between the assessment of competencies and study results is also possible in different aspects and approaches. In the example above we calculated correlations between sub-competence/ facet scores and the weighted average grade, but a similar methodology can be used to measure correlations between any competences, sub-competences, or facet scores on the one hand, and any indicators of the study results on the other, e. g. any course grades, final exam grades, high school central-ised exam scores, grade point average etc. Competence assessments can be included in regression analysis models both as independent variables (to find out how different competences and sub-competences predict specific learning outcomes), and as dependent variables to better understand how different course outcomes, intermediate assessments and other measure-ments of learning outcomes predict the level of development of specific transversal competences, sub-competences, and their facets.

Conclusions

The results of this study support the validity of the transversal compe-tence assessment tool for students, based on six transversal competences: civic, digital, entrepreneurial, global, innovation, and research competence. The analyses revealed that all six competences represent unique, distinct constructs, although there is some overlap between the civic and global competence. The tool has been shown to differentiate between the transver-sal competences of students from different study levels, and to demonstrate

the relationships between different components of transversal competences and study results (average weighted grade). The assessment tool has potential for a wide range of applications for assessment and development of transversal competences in the study process in higher education.

Acknowledgement

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STUDENTS' TRANSVERSAL COMPETENCE IN INTERNATIONAL BUSINESS STUDIES: MAPPING OF LEARNING OUTCOMES AND CURRICULUM DESIGN

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ABSTRACT

The promotion of competence development is one of the priorities of education systems in Latvia and Europe. An important driving force in competence development is higher education study programmes, where students acquire professional and transversal skills. Special attention is given to the significance of transversal competence in promoting competitiveness, social integration, and accountability of graduates in their everyday and professional lives. In the research project *Assessment of Higher Education Students Competencies and the Dynamics of its Development Throughout Studies* (Rubene et al. 2021), qualitative and quantitative evaluation indicators and an assessment instrument for six transversal competences (Digital, Global, Innovation, Research, Civic, Entrepreneurial) were developed. The instrument facilitates an assessment of the students' competence level and development.

International Business and Start-up Entrepreneurship (IBSE) is an international, interdisciplinary bachelor's study programme at Rīga Stradiņš University (RSU). Its goal is to prepare highly qualified and creative specialists in international business, start-up entrepreneurship, and management, who will be ready to participate in the business development and transformation of the national economy. In the intended learning outcomes of the study programme the emphasis is put on the graduates' ability to analytically collect information, evaluate it critically, identify trends and find creative solutions to problems, as well as participate in the development of the international business and start-up entrepreneurship in a global environment.

In the framework of this study, the intended learning outcomes of the IBSE programme were mapped to the assessment indicators of transversal competence. Analysis of the curriculum map led to conclusions to what extent the six transversal competence are present in the curriculum, the succession of their acquisition, and their concordance with the education level of the study programme. Recommendations for improving study programme learning outcomes were identified to improve the acquisition of transversal competence within the study programme.

Keywords: *Higher Education, Mapping, Methodology, Transversal Competence, Skills, Study Results*

Introduction

Promoting individual competence is a solid international priority on the higher education agenda (The European Pillar of Social Rights, 2017). The capability of the student – to be alumni – the future employee is an indicator of the quality of the study programme provided by the higher education institution and, consequently, the organisation's human capital (Grigorovica, 2022). One of the cornerstones in the development of professional mastery is the acquisition of transversal skills, also referred to as Future Skills. Well-developed Future Skills go way beyond only indicated fixed skills, they are closely cross-linked with profession-specific skills and serve as a strong binder of both. Future Skills enlighten the conceptual model consisting of three interacted dimensions: a subjective – individual development-related, an objective – task and subject matter-oriented, and a social dimension – organizational and environment-related (Ehlers, 2020). The close interrelations of the dimensions reflect the importance of transversal competence in applying any knowledge and skills.

To analyse and evidentially promote the acquisition of transversal competence, their assessment initiatives are relevant at both the institutional and national levels. Therefore, the assessment of transversal competence at the study programme level was piloted in this research. There are six mapping transversal competence domains used in mapping: research, innovation, entrepreneurship, digital, global, and civic. These categories result from merging Key Competencies represented in the Recommendation of the European Parliament and the Council of the European Union "The Key Competences for Lifelong Learning" (2018). The definitions and assessment methodology for these transversal competencies have been developed in the research project *Assessment of Higher Education Students Competencies and the Dynamics of its Development Throughout Studies* (Rubene et al. 2021).

Digital competence describes student behaviour when using information and communication technologies and digital media to communicate effectively, manage information, collaborate, create, and disseminate knowledge in their professional and/or study activities.

Innovation competence describes the student's knowledge, skills, and attitudes required for creating and long-term implementation of sound, effective improvements or innovations (new product or solution, invention (process result), method, device, idea) for people or organizations.

Entrepreneurial competence describes the ability to create, see or transform ideas and opportunities by mobilizing and effectively using the necessary resources to achieve goals. It covers all areas of life, from personal growth to active participation in society, participation in the labour market as an employee or self-employed person, and starting a social, commercial business.

Civic competence Describes human participation in civic and social life, which contributes to healthy social and political well-being and sustainability at community, national, European Union, and global levels.

Global competence describes the student's ability to assess local, global and intercultural issues, understand and value different perspectives and worldviews, engage in open and effective interaction with people from different cultures, work for collective well-being, promote sustainable development, make decisions in a global environment, interacting with different cultures, by valuing diverse perspectives and worldviews.

Research competence describes the student's behaviour in carrying out research activities in his/her professional and/or study environment, which results in the solution of an independent research problem (Rubene et al. 2021).

Structural setting of the skills and competence mapping

Curriculum mapping is a process of developing a visual map of all study courses in the curriculum and evaluating course content to determine if any gaps or excessive overlap exist and to ensure all courses meet the intended study programme learning outcomes (Harden, 2001; Plaza et al 2007).

Mapping of RSU study programmes' intended learning outcomes has become a strategic analysis tool that is part of the study programme management, including the quality assurance process, and facilitates the implementation of a student-centered approach. The results of the mapping process of the study programme – the designed maps and the observations – are intended and used for both, the analysis of the curriculum and quality assessment of the study programme, and ultimately for its improvement. Mapping is performed using the advanced *MS Excel* mapping tool developed by the Study Process Quality Analysis Unit at RSU Centre for Educational Growth. The semi-automated tool retrieves data from the study course descriptions of the respective study programme in the RSU study course register.

Previously curriculum maps have been also used to analyse the acquisition of a specific set of learning outcomes, for example, study content related to the use of biomaterials in dentistry education (see Koka et al., 2019). Curriculum mapping has been used to assist the alignment of intended professional learning outcomes (knowledge, skills, and competence) in the development of new study programmes, including IBSE, that was designed in 2020. The experience gained on the extensive and wide mapping of the study programme, its courses, and their results in accordance with the Latvian Qualifications Framework (LQF) and the European Qualifications Framework (EQF) level strongly ensured a high-quality connection of the

study programme results with the study course results. Thus it also tied the inner contents structure of the programme and paved a clear methodological way for further mapping and the systemic approach for programme's uninterrupted adjustment to high-quality and higher-level skills and competence frameworks, including the ones derived from European Commission (European Commission 2021, EARLALL 2018-2021), United Nations Educational, Scientific and Cultural Organization (Trzmiel, 2015) and the United Nations Educational, Scientific and Cultural Organization globally (Care, 2016) narrowed down to the six major transversal competence explored in this article which was adjusted to and adopted by Latvian Education Area.

The current case study builds on this previous experience and explores how curriculum mapping can be applied to designing and aligning the intended transversal competence. Mapping of the intended transversal competence proposes new challenges due to the cross-cutting nature of these competence causes them to be a part of the hidden curriculum that which is "learned but not openly intended" (Martin, 1983; Alsubaie, 2015).

Case study of transversal competence mapping in IBSE

The mapping of transversal competence against study courses of the IBSE programme is a consecutive development phase of the skills' and competence development system in RSU as well as the very development of the programme. It is essential to note that the mapping of transversal competence and the interpretation of its result shows greater efficiency if conducted consecutively after the mapping of the very programme's and its study courses' results, even though both mapping grids are separate. The efficiency manifests in the preparatory work with the basic mapping elements (study courses and their study results) and the cooperation of different parties involved – programme leadership, faculty members, and students, which in turn strengthens the collective awareness and understanding of programme's study courses, their results and particularly their relation to skills demanded by the labour market.

During the development of the study results of the very programme, they were first mapped against the corresponding level 6 descriptions of knowledge, skills, and competence of LQF which corresponds to the EQF. This stage of mapping ensured the initial conformity of IBSE programme results to the mentioned qualification frameworks thus justifiably placing the programme in the Latvian and European higher education area. Similarly, during the development of the study courses, interactive mapping of the results of the study courses against the content of the study courses and the results of the programme was performed in a joint workshop attended

by programme director and faculty members. It helped the lecturers and course leaders to become more aware of the results of their study courses and to see the importance of their study course in the overall structure of the programme. It also ensured the start of cooperation with other lecturers involved in achieving the respective study results of the programme. Overall, such an interactive approach ensured the strengthening of the team-teaching method in the programme, thus reducing the risks of disengagement in the classic approach of lectures changing in front of students' group with various courses often one not knowing what others teach particularly. The mapping of the study programme has allowed identifying more clearly both the courses' and their skills, knowledge, and competence to be acquired within the programme according to the classification of Bloom's taxonomy, as well as to align them more closely with the aims and tasks at the higher, study programme, level. This, in turn, significantly strengthens the position, attitude and a clear understanding of the programme director, course leaders, lecturers, students, as well as graduates about the topicality of the study programme and the compliance of study results with the labour market, industry needs, and scientific trends. Mapping also provides an opportunity to examine the relationship between the content of a given study course and other courses of the study programme in a more structured and determined way, serving as a signalling instrument to e.g. avoid possible duplication of contents or, conversely, to justify its need from different perspectives in different courses. As a result of these two main methods (instrument) – face-to-face interactive discussions and mapping – the interconnection of the information included in the study courses is kept up-to-date and relevant. Such system ensures comprehensive monitoring of the quality of studies with control measures throughout the academic year, especially at the end of the academic year when the updating of the descriptions of study courses for the next academic year takes place.

Transversal Competence Mapping Structure and Results in IBSE

The mapping of transversal competence of RSU IBSE programme took place in three separate parts ensuring so-called 360' view or perspective meaning that the 34 study courses offered in the programme are mapped against 25 sub-competence of the six main transversal competence by all major involved stakeholders – 1) programme director, 2) faculty members, 3) students/graduates. The organizational work of the mapping itself was conducted and coordinated jointly by the programme director in close cooperation with the Study Process Quality Analysis Unit at RSU Centre for Educational Growth. To avoid the misjudgement of lessened research and mapping scope, depth and integrity, it is to be noted importantly that

study courses' mapping against transversal competence is an external mapping which follows the already widely scrutinized study course quality assurance including several stages of the internal mapping. Such a 360' approach ensures the most objective results' interpretation given the chosen research methods – surveys and focus group. Arguably, slightly more objective mapping results might be met with other research methods such as experiment (Popoveniuc, 2021) and observation with possible automation aspects based on actual students' performance with specific tasks and detailed transversal competence indicators, however (see recommendations). While further detailed results of the IBSE study courses' mapping against transversal competence by students (survey and focus groups) and teachers shall be published after further research in subsequent publications, this research is focusing on the finalized results of the mapping by programme director. Preliminary results of the mapping by the 1st- and 2nd-year students (the programme enrolled first students in 2020 thus there are yet no 3rd-year students) are included partly where relevant, however as the students' survey part is currently ongoing the statistical confidence interval of the survey (with confidence level 95% and a general group of 18) is as high as six (margin of error 34%).

The results of the mapping showed fairly even dispersion of the number of various IBSE study courses and the number of their repetitive facets (in sub-competence breakdown) facilitating the acquisition of all the six transversal competence (see Figure 1 below). The variance – from 21 distinct courses for Civic competence to 31 for Global competence – is statistically insignificant and practically justified. Overall, the 34 study courses offered in the programme manifest 275 times within 25 sub-competences, providing an average of 8 study courses for one sub-competence (Min 5, Max 17, Mode 12).
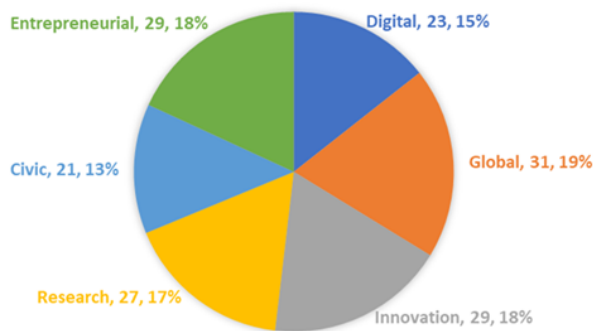
Figure 1. A number of study courses facilitating the acquisition of the respective transversal competence.
Source: Authors' research.

Further analysis of the quantified results of study courses' mapping against transversal competence and sub-competence (see Table 1 below) allows detection of particular points of attention. In IBSE case study example these were 16 distinct study course whose appearance count in the mapping grid was below the groups' statistical median (8) meaning that these courses contributed to the acquisition of transversal competence lesser (as low as 2) than other courses. Additional contents review of such identified courses then allowed to either a) justify the lower median measure by respective courses' contents specifics (on most occasions that was the case e. g., course such as civil defence, language courses, other specific thematic courses) or b) adjust the course for it to contribute better to the acquisition of transversal competence.

Table 1. Descriptive Statistics of Quantified Mapping Results

	Distinct count	Appearance times	Mode	Average	Median	Min	Max	Range	Standard Deviation
Competence total	6	275	#N/A	45.8	45.5	35	57	22	7.4
Sub-competence total	25	275	12	11.6	12	5	17	12	3.6
Distinct courses in sub-competence breakdown	34 in 25	275	3, 5, 11	8.1	8	2	20	18	4.4
Distinct courses in competence breakdown	34 in 6	160	29	26.7	28	21	31	10	3.9
Courses appearance times in competence breakdown	34 in 6	275	#N/A	45.8	45.5	35	57	22	7.4

Source: Authors' research.

The quantification of the mapping results and their statistical analysis allows for variety of various evaluation dimensions to review and assess study courses' placement towards transversal competence. For instance, Table 2 below displays number of study courses the breakdown of transversal competence, showing the number of unique study courses facilitating the acquisition of each of the 6 transversal competence and the number of times the respective transversal competence appears in the whole list of study courses. Such a view allows evaluating the multiplication coefficient. In the IBSE case study it is showing that one given study course is contributing on average to 1-2 sub-competence within the given transversal competence

(see Table 2 below). Such an indicator may assist in identifying how evenly the given transversal competence is gained through several study courses.

Table 2. Number of study courses in the breakdown of transversal competence

Transversal Competence	Distinct study courses	Occurrence times	Mult. C
Digital	23	35	1.5
Global	31	50	1.6
Innovation	29	57	2.0
Research	27	45	1.7
Civic	21	42	2.0
Enterpreneurial	29	46	1.6

Source: Authors' research.

The mapping grid and variations analysis has also strongly positive impact on the programme's curriculum schedule – study courses and their respective activities across study years. The results showed even dispersion of appearance and thus content-wise justified acquisition of transversal competence across programme's curriculum timeline. This helped to avoid imbalances and significant deviations of the achievement of learning outcomes and acquisition of transversal competence curriculum timeline, for instance, it would show if any transversal competence could be obtained in several study courses, but only within one year of studies.

Additionally, the mapping of transversal competence in the IBSE programme case study disclosed other essential content-wise benefits. For instance, as the very IBSE programme is new and contains several uniquely innovative study elements that are to some extent experimental, experts and stakeholders debated already in the IBSE design development phase that some study courses in the curriculum might not achieve the envisaged learning outcomes as planned by programme developers e. g. language courses and Semester project I which already early in the programme focused on comparatively high individual work of a student. The preliminary students' survey results of the mapping show that in relation to the language course the initial doubts can be ruled out, because students clearly identified and justified with examples in the comments field the acquisition of transversal competence in language courses. The examples given by the students also correlate to the detailed transversal competence indicators. The importance of language courses in non-humanitarian fields of science have been noted in scientific debate and practical application contributing to students' cognitive, intra-persona, inter-personal and other skills and transversal competence frequently associated more with social

science dimensions (see e. g. Sinkus, 2020). However, in relation to the Semester project I initial considerations can be confirmed and programme's curriculum shall be adjusted. In this specific case, based on the focus group results, students will be offered to choose between the designed Semester project I course or participation in RSU Business Incubator.

To sum up on the case study of transversal competence mapping in RSU bachelor level study programme IBSE, the mapping approbation presented both, clear justifications as well as space for the improvements of the IBSE curriculum design and its courses' learning outcomes. Furthermore, the mapping provided not only the opportunity to improve several study courses to meet certain transversal competence, e. g. 1st and 2nd sub-competence of Civic competence and 4th sub-competence of the Digital competence which were comparatively insufficiently covered by the programme's study courses, but also provided the opportunity to identify initially hidden facets of IBSE learning outcomes that meet certain transversal competence e. g. in language courses, as well as unfolded other valuable adjustments in IBSE curricula thus strengthening IBSE contents, brand, student-centered aspects, and its conformity to the demand of higher education of both, students and labour market.

Conclusion and recommendations

The mapping is a strategic useful tool for the programme development and continuous adjustment to the labour market needs. It certainly ensures programme's conformity to labour market industries' needs. It is likely to be considerably more efficient if such external mapping as the transversal competence mapping is conducted after several previous stages of the quality assurance of the study programme. Also, not all sub-competence must be to a particularly significant amount covered in all study programmes and all study courses, particularly given the voluminous amount of comparatively narrowly specialized social science study programmes and even more specialized courses' thematises in them.

Despite the many benefits of the mapping instrument, it must not become an aim and a result itself. The further the mapping is developed the 'heavier' it shall become with more data, deeper analysis, ever-increasing levels of typology, classifications, detailing, automation modules, data systems' compatibility issues, organizational administration, bureaucracy, and many other. Keeping the ultimate vision in mind – student-centeredness and uninterrupted monitoring and adjustment to students' needs, research and labour market needs – is crucial.

As for the further research methods, more objective mapping results might be met with other research methods such as experiment and

observation with possible automation aspects based on actual students' performance with specific tasks and detailed transversal competence indicators. This would make the mapping system 'heavier' as mentioned above but would also ensure more direct data and more evidence-based results.

Finally, in relation to the legal dimension of the transversal competence approach further implementation in Latvia, more vivid and clear coherence between the legal, policy-making and practical implementation should be pursued, including joint terminology and classification. That would help increase awareness, joint understanding and thus better implementation of the approach. For instance, in the Education Law of the Republic of Latvia it is stated that "*The result of education is a combination of knowledge, skills and attitudes*" (Education Law, Latvia) in most cases (including this very research) the mentioned "attitudes" would be used as a synonym for "competence", but clearly the question of attitudes in terms of competence is older, more complex, fully integral in this debate, immensely highly crucial in learning opportunities, and largely formally inexplicable. In the scientific development dimension, such discord is likely fruitful for debate and progress, but in practical implications a harmonized usage of terminology in a legal regulatory sphere and in the analysis of educational contents' quality and conformity might be more efficient.

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LEARNING EXPERIENCE THAT TRANSFORMS TEACHERS' PROFESSIONAL ACTIVITY: THE COVID-19 PANDEMIC

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ABSTRACT

Transforming of teaching and learning paradigms in education has been a long-standing object for debate. Various educational reform movements have formed along with divergent views on what quality education is. The COVID-19 pandemic has created a world-wide disruption not only to the continuity of education, but to the existing teaching strategies and learning modes as well. Teachers had to reorient their professional activity towards remote and hybrid teaching within a short period of time. This creates a crisis-like learning situation that requires not only the acquisition of practical skills, but it demands the transformation of the teaching activity itself. Learning associated with such transformations deserves closer examination.

The aim of this article is to discuss the theoretical and the practical underpinnings of a study which aims at conceptualizing learning experiences of teachers that have accompanied the transformations of their professional activity during the COVID-19 pandemic situation. In–depth literature review was performed using both key word search and reference chaining to discover key authors, key texts, and key ideas. Further on central concepts were analysed and methodology was developed for researching the learning experiences teachers have undergone during the COVID-19 pandemic that have transformed their professional activity. Interpretivist subject-centred approach in line with social constructivism is applied.

The article concludes that the central concepts – learning experiences of teachers, transformative learning, professional activity of teachers – serve to build a logical and compatible research framework. Narrative interview along with documentary method of interpretation and theoretical sampling forms coherent and validated methodology.

Keywords: *Learning experience, teachers' professional activity, COVID-19 pandemic, transformative learning, professional development*

Introduction

In addition to the world-wide disruption COVID-19 pandemic has created to the continuity of education through school closures, it has challenged the existing teaching strategies and learning modes as well

through crisis-induced remote teaching and learning (The World Bank, UNESCO, and UNICEF, 2021). Educators around the world were forced to attempt mastering remote and hybrid teaching within a short period of time, thereby fundamentally restructuring their professional activity. COVID-19 crisis demanded not only the acquisition of practical skills, but also teaching activity itself had to be transformed and re-created in ways that were unexplored to most. Both a challenge and a professional learning opportunity, learning associated with such transformations deserves closer examination.

Transforming of teaching and learning paradigms in education as the dominant models of thought or conceptual systems has been a long-standing object for debate. In Latvia the topic of paradigm shift was especially relevant during the restructuring and democratization of the state education system after independence was restored in 1990 (Blūma, 1999; Briška et al., 2006). Now the topic protrudes due to the challenges of the COVID-19 pandemic (Prudnikova, 2020) portraying the scale of changes to the teaching and learning practices as similarly notable. Though only through passing of time it would become evident if the lessons learned through COVID-19 pandemic have an effect on teaching and learning in the long run.

Apart from larger societal processes, various educational reform movements have formed to achieve paradigmatic changes in education as well, with mixed results. While the dominant Global Educational Reform Movement, which Finnish education expert Pasi Sahlberg criticizes and abbreviates as GERM (Sahlberg et al., 2017), seems to lessen its influence, contemporary theorists emphasize the collaborative professionalism of teachers as the core driver of educational improvement (Hargreaves & O'Connor, 2018). Thereby it becomes more evident that structural changes per se don't effect the desired change in the teaching practice, there are more dynamic, social, and subjective processes involved.

Educational change takes place not only on a systemic and organizational level, even more so the deepest change affects the learner on a personal level. Transformative learning theory by Jack Mezirow (Mezirow, 1991) provides one of the most intriguing explanations of a deep learning that affects the belief systems and conceptual understanding of an individual. This change has been well documented in research and a metatheory has developed that aims to "describe and explain dramatic changes in how people experience, conceptualize, and interact with the world" (Hoggan, 2020, p. 111).

This article discusses the framework of a study aiming at conceptualizing learning experiences of teachers that have accompanied the transformations of their professional activity during the COVID-19 pandemic situation. This article builds on the research carried out as a part of doctoral dissertation project on learning experiences of teachers (Goba-Medne, 2019; Goba,

2019). The central question of the study is: What learning experience(s) transform professional activity of teachers in the situation of COVID-19 pandemic? And vice versa: How are the transformations in teachers' professional activity reflected in the learning experience(s) of teachers? Accordingly, in–depth literature review was performed using both key word search and reference chaining to discover key authors, key texts, and key ideas. Further on central concepts were analysed and methodology for researching the learning experiences teachers have undergone during the COVID-19 pandemic that have transformed their professional activity was developed. Interpretivist subject-centred approach in line with social constructivism was applied. Experiences are going to be analysed through the theoretical lens of transformative learning theory (Hoggan, 2020; Mezirow, 1991), using the activity system's model derived from expansive learning theory (Engeström & Sannino, 2010).

Methodology

In-depth literature analysis was carried out to build the theoretical framework of the study as well as its methodological framework. The initial research interest was connected to the drivers of learning for educational change, taking the perspective of teachers and exploring their learning journey. The initial literature list consisted of key books and research articles on general adult learning theories (Illeris, 2009; Jarvis, 2006), transformative learning theory (Mezirow, 1991, 2009), expansive learning theory (Engeström, 2009; Engeström & Sannino, 2010), teacher professional development (Hargreaves, 2000; Hargreaves & Fullan, 2012; Sahlberg, 2011) and learning experience (Dewey, 1938/1997; Eberle, 2014). The list was expanded through keyword search in research databases and via search engines on the internet, accompanied by citation chaining (browsing through reference lists to discover linked citations that are useful for the research as well as discovering more key authors, frequently cited sources on the matter etc.) and tracking of previous and further work of core researchers and co-authors. In this way it was possible to identify flaws and weaknesses in the research that was addressed with later articles or other researchers. Through this work patterns started to emerge that elucidated the role of perspective transformation through transformative learning as a mechanism that transforms teachers' professional activity and drives educational change in contrast to reform movements that prioritize formal incentives and institutional and administrative changes. Therefore, subject centred approach was chosen for the study along with principles of interpretivism and social constructivism. COVID-19 pandemic entered the study as a conjunctive space of experience (Bohnsack, 2010) for teachers

that both served as a common biographical occurrence and was also a crisis that deemed impossible the unchanged continuation of the existent educational practice.

To further construct the methodological framework of the study, documentary method of interpretation (Bohnsack, 2010) along with narrative interview (Nohl, 2010) was identified as a qualitative design method that can penetrate the deeper and implicit structures of meaning of an individual or a group that drive action rather than depict the explicit or literal meaning of the text. Compatibility of the method and the theoretical framework will be discussed as well.

Results

First, literature analysis provided a context for the overall challenges that teachers as learners face apart from the COVID-19 pandemic. This includes complex societal processes like the volatile nature of liquid modernity (Bauman, 2000), crisis of attention and the multiplying sources of distraction in the digital era (Crawford, 2015), the ideology of endless self-improvement paired with hedonism (Brinkman, 2017). It contrasts with the intellectually demanding nature of schooling, the need for sustained concentration, effort, and self-discipline associated with good learning outcomes of students. Teachers are seen as the backbone of education requiring to somehow extinguish all interferences and obstacles while promoting the development of students to their full potential. Therefore, it is not surprising that the school as an institution historically shows the tendency of encapsulation (Engeström, 1991) – safeguarding its community from the interferences from outside and creating a rigid subculture that tends to resist change (Labaree, 2012). Regretfully, the school encapsulation tendencies also promote the reciprocal professional isolation of teachers. It contradicts the findings of contemporary research that positions collaborative professionality at the core of teacher professional development (Hargreaves & O'Connor, 2018) – emphasizing reciprocal learning primarily in the workplace as a long-term activity (Darling-Hammond et al., 2017) rather than the short-lived out-of-school learning activities dominating the field.

Second is the support for meeting the challenges of modern teaching. In Latvia the support for teacher learning varies greatly across schools and tends to be incidental. The system for continuing professional development of teachers in Latvia is rather a decentralized ecosystem: there is no coordinating body that would organize a centralized database for the supply of approved learning activities nor to exclusively organize those activities (European Commission/EACEA/Eurydice, 2021), there is no requirement for teachers or schools to form a professional development plan (ibid.),

wide spectrum of organizations are entitled to provide teacher professional development activities, however, the available data, let alone research, on the activities implemented and their effectiveness nationwide is scarce. Funding conditions vary as well – there are both funded and paid programs available to meet the general requirement of hours spent for professional development tri-annually. Teachers are expected to decide upon the programs to choose in collaboration with school administration, in practice the extent of targeted planning across schools is unclear.

Thirdly, the COVID-19 pandemic serves as a turning point, a crisis that exacerbates the issues of teacher support already present in the education system as well as denies the chance to continue with the existed teaching practice, creating a pressing learning situation in the current timeframe for schools around Latvia and worldwide.

Therefore, it became evident that subject-centred qualitative research design would serve the purpose of explicating the way different factors interact in the professional development of teachers in Latvia, elucidating the learning challenges teachers face in practice. To construct a nuanced understanding of the research problem, central theoretical concepts were elaborated: learning experiences of teachers, transformative learning, professional activity of teachers. Further, methodological framework was elaborated for researching learning experiences of teachers.

Learning experiences of teachers

The concept 'learning experiences of teachers' evidently encompasses all experiences of teachers that result in learning. However, experience as a concept is ambiguous for empirical research. It is practically impossible to access the lived experience of another person while it is being formed – as it is a reflection of an individual's interaction with the environment in several modalities – in the senses, bodily sensations, emotions as well as mental representations and immediate interpretations. Experience expressed as narrative inherently loses its multi-modality as language itself involves reduction (Eberle, 2014). Yet learning inevitably occurs through experience (Jarvis, 2006) and promotes capacity change of some sort (Illeris, 2007), which requires time to take effect. Therefore, it makes sense to study learning experiences retrospectively (as conceptualizations, memories, reflections) to grasp the effect an experience has had on a person as well as to allow for the formation of new models of action based on the changed conceptions.

For the sake of this study the whole of a teacher's experience forms the starting point for the identification of the learning experiences that have transformed the way teacher performs professional activity – either through changes in attitude, feelings, opinions, or behaviour. This wide scope

enables to determine various factors contributing to changes in teaching practice – not only the institutionally provided opportunities such as professional development programs, but any context that may foster learning. Experience is formed in the context of the whole lifeworld of a person, which comprises all the aspects of the world an individual has encountered, such as surroundings, people, ideas, occurrences, and oneself. The Husserlian notion "lifeworld" characterises the intersubjective nature of human experience (Huserls, 2002), as well as its dependency on the variety of experiences and the environment of interaction (Jarvis, 2006). We may learn only from what we come in contact with, hereto not all experiences are equally educative (Dewey, 1938/1997), some may even provoke defensive or regressive change (Illeris, 2007).

Experiences in general and learning experiences in particular may be seen as immensely diverse, therefore hardly comparable. However, there are biographical events and other commonalities that form a lens for studying this diversity. The COVID-19 pandemic can be seen as one of these conjunctive spaces of experience (Bohnsack, 2010) and a common sphere of comprehension, wherein all the teachers have gone through similar events.

Transformative learning

There is a wide array of learning theories tackling different aspects and facets of learning. The concept of transformative learning coined by Jack Mezirow (Mezirow, 1991) depicts learning that is restructuring rather than additive in its nature. Based on grounded theory research, it depicts how in certain circumstances adults change their frames of reference (meaning perspectives or habits of mind) that guide their thinking and behaviour. Mezirow depicts disorienting dilemma as a state in which a person discovers that their current perspective or the "sets of assumption and expectation" (Mezirow, 2009, p. 92) is problematic and lacks in the ability to adequately interpret or make meaning of the experience in question and guide action. This disorienting situation may foster learning that is characterised by perspective transformation and, according to Mezirow, typically follows a 10-step process. However, as transformative learning has evolved to become a metatheory comprising the work of numerous researchers, different vectors of the progress of transformative learning have been identified. Therefore, Chad Hoggan defines it as "processes that result in significant and irreversible changes in the way a person experiences, conceptualises and interacts with the world" (Hoggan, 2016, p. 77). The transformative change is characterised by its depth, breath, and relative stability, meaning that the person has experienced significant learning, it has affected several contexts of their life and the changes are relatively permanent over time (ibid.).

Accordingly, transformative learning theory serves as a lens for inter-preting learning experiences of teachers, identifying if through COVID-19 pandemic significant and irreversible changes have occurred in the way teachers experience and conceptualise their professional activity as well as carry it out in practice. There is an inherent complexity of challenging the existent teacher beliefs and attempting transformative learning and cultural change in schools, therefore analysis of the existing research on the topic helps elucidating the various aspects fostering or hindering such learning. As the core concept of transformative learning is tied to self-reflection and critical examination of problematic assumptions (Mezirow, 2009), it could be delineated that the primary cause of those assumptions being problematic is the contradiction between one's frames of reference and the situation those fail to tackle. Learning is an attempt to resolve this contradiction. Teachers' professional lives inevitably encompass such contradictions, there is no need to artificially construct dilemmatic situations to foster transformative learning. The prime value of research in this field is to identify meaningful and efficient ways to support the resolution of the existent contradictions teachers already face. In fact, striving to do otherwise, apart from creating an unnecessary emotional burden, risks fostering indoctrination rather than transformative learning (Hoggan et al., 2017).

Professional activity of teachers

To further narrow down the scope of this research, not just any transformative learning that is experienced by a teacher is considered – rather it is the transformative learning that concerns the professional activity of the teachers in Latvia. The concept of professional activity comes from the work of Yrjö Engeström, who defines activity as a cultural system with seven general elements or nods: subject (in this case – teacher), instruments (curriculum, methods, aids, ideas etc.), object of the activity (students and their growth), rules (formal, informal, or technical), community, division of labour, and outcomes (learning outcomes, professional performance assessment) (Engeström, 1987; Engeström & Sannino, 2010). This triangular model of activity places the work of the teacher in the social context, considering its intersubjective nature, general social structure, and historicity as well as the central role of students and their development.

Contrary to the notion of teacher professional competence, the system of professional activity may be seen as primarily practice based – the actual expression of competences in practice, given the circumstances (Goba-Medne, 2019). Rooted in pragmatism, Engeström's theory provides a holistic and systemic view on the complexity of human activity, allowing to

analyse the interplay of the components as well as contradictions between them within the activity system's model and its network relations to other activities (Engeström & Sannino, 2010).

Research framework for teacher learning experiences

The three main concepts of the theoretical framework of this research discussed so far point towards a qualitative research design, which typically explores the meaning that individuals or groups attach to a construct (Creswell, 2014). In fact, qualitative methods have been dominating the research on transformative learning (Laros et al., 2017; Taylor & Snyder, 2012), and the concept of learning experience, as discussed here, requires interpretive and subject-centred approach as well. Research on activity within the research strain of expansive learning typically rely on interventionist methodology (Engeström & Sannino, 2010), which may be considered mixed method or hybrid.

Northern American transformative learning theory has become increasingly popular in Europe as well. Arnd-Michael Nohl conducted research on transformative learning phases or steps using narrative interviews which were then interpreted according to documentary method of interpretation (Nohl, 2015). By doing so he combined northern American transformative learning tradition with continental European methodological research traditions, with noteworthy results. Narrative interview is characterised by its avoidance of detailed pre-structuring, going beyond question-answer dynamics, it rather aims to "achieve a cogent formulation of the initial central topic designed to trigger a self-sustainable narration" (Jovchelovitch & Bauer, 2000, p. 62), followed by a quasi-improvised questioning phase to clarify aspects of particular interest by the researcher (ibid.). Narrative interview has the advantage of documenting a certain part of a person's biography from their subjective perspective, reducing the interviewer's impact on the interviewees narration, as well as allowing the story to unfold according to its inner logics. This type of interviewing is considered highly valid in recollecting biographical experience of participants, whereas less so concerning historical facts (Nohl, 2015).

Rooted in ethnomethodology, documentary method, when applied to the data gathered via narrative interviews or group discussions, allows to reconstruct the frameworks of orientation of the interviewees, to identify if those have changed over time as well as to create typologies. Frameworks of orientation denote the structure underlying depictions interviewees make and are considered synonym to *habitus*, "habitualized practices, based on the incorporated experiential knowledge of the actors which guides their activities" (Bohnsack, 2010, p. 101). Transformations in these orientations reflect the concept of perspective transformation – the

change studied by transformative learning theory (Nohl, 2015). Therefore, documentary method allows to study experiences typical to transformative learning.

Such research benefits most from using theoretical sampling and the principle of theoretical saturation (Strauss & Corbin, 2015) – purposeful and conscientious selection of participants ensures reasonable time allocation and data amount/usefulness ratio, ensuring requirements of theory building are still met.

Discussion and conclusions

Beyond doubt the COVID-19 pandemic has posed serious challenges to the work of teachers around the world. Researching the subjective side of these challenges, which is subject to great variability, involves the use of interpretive rather than measuring means. Transformative learning theory may serve as an interpretive lens for studying learning experiences of teachers, identifying if through COVID-19 pandemic significant and irreversible changes have occurred in the way teachers experience and conceptualise their professional activity as well as carry it out in practice. To construct a theoretical framework for researching these experiences the activity system's model serves as a systematizing frame that respects the contemporary understanding of teacher professional development as a collaborative and work-based endeavour.

In fact, narrative interview paired with documentary method of interpretation has been validated in the research practice, such as of studying success and failure in educational experiences (Gerhartz-Reiter, 2017) as well as of studying occurrences of transformative learning (Nohl, 2015). As a research strategy, however, documentary method doesn't call for an extensive theoretical framework as it builds on "the incorporated experiential knowledge of the actors which guides their activities" (Bohnsack, 2010, p. 101), which are in turn developed into multidimensional typologies through comparative analysis in a process kindred to grounded theory (ibid.). Therefore, the task of the theoretical framework is twofold: constructing the basis for the central topic of the narrative interview and interpretation of the results provided by the documentary method. Thus, it is also explicated if the theoretical framework is adequate in regard to the empirical reality characterised by the typologies of orientations and implicit meaning. As an example, scholars have addressed the critique to transformative learning theory in relation to the vague principles by which transformative learning is distinguished from any other learning (Hoggan et al., 2017). Demonstrating how a theory fails to address aspects of empirical reality is also a valuable contribution to research.

The aim of this article was to discuss the theoretical and the practical underpinnings of a study which aims at conceptualizing learning experiences of teachers that have accompanied the transformations in their professional activity in the COVID-19 pandemic situation. It may be concluded that the central concepts – learning experiences of teachers, transformative learning, professional activity of teachers – serve to build a logical and compatible research framework. Narrative interview along with documentary method of interpretation and theoretical sampling forms coherent and validated methodology.

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HOW TO LEARN SCIENCE LITERACY? OVERVIEW OF MOST TOPICAL AND RESEARCHED LEARNING APPROACHES

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ABSTRACT

Rising levels of disinformation and fake news have been posing risk to democracy, public health and wellbeing of a democratic society, an issue becoming even more evident during Covid-19 pandemic. Thus, in the current post-truth era, where opinions are becoming more important than facts, scientific literacy skills enhanced by education is seen as one of the solutions to help combat a threat of misleading information. In order to understand the most effective educational approaches that aims to enhance science literacy skills, systemic literature review of the research articles published between year 2018 and 2021 were performed. The goal of this systemic literature review is to gain an overview on the most researched learning techniques and approaches that has proven to successfully improve educational processes and enhance scientific literacy and understanding of science. After content analysis of 262 article abstracts containing keywords "Science literacy" or "Scientific literacy" on the *Web of Science* database, a total of 54 articles were identified that had described a learning approach or a technique that has improved learning process and results in the subjects of science, technology, engineering or mathematics while enhancing general understanding of science and improving science literacy. It was found that the following learning approaches were seen to be effective when improving scientific literacy skills – **citizen science**, **context-based learning**, **inquiry-based learning** (including discovery learning method, guided inquiry, and active learning), **problem-based learning** and **socio-scientific learning approach**. Each of the approaches were analysed and compared to find common/different aspects that can help identify and choose the right approach for specific target audience.

Keywords: *Scientific literacy, science literacy, disinformation, education, learning approaches*

Introduction

Current technology and information driven society requires necessary skills and ability to make a critically evaluated decisions, choices and opinions. To discern falsehoods and pseudoscience from science-based information, it is important to have a thorough understanding on how

data-supported claims are made and how valid reasoning is different from well-presented personal opinions (Edelsztein & Vázquez, 2021). That, in turn, requires relevant competencies and skills to effectively evaluate available data and scientific facts while considering many variables and conditions that could potentially confuse or mislead (Golumbic et al., 2020). Scientific literacy can be described as all the above-mentioned skills – as an ability to recollect and apply the scientific knowledge learned in the face of real-life problems, contributing to informed decision-making society. This complex skillset offers a thorough understanding of scientific processes and methods as well has how science, technology and society are interrelated, affecting own life, health and well-being (Queiruga-Dios et al., 2020). One of the most essential skills of a scientifically literate individual is the ability to engage in the science related discussion in their everyday lives (Garrecht et al., 2021).

Science literacy is stated as one of the key competencies in the framework of *PISA*, defining it (science literacy) as an ability to comprehend, understand and use the scientific knowledge in broader concept, allowing this knowledge to be used to achieve broader goals (OECD, 2019). Scientific literacy can also contribute to higher citizen engagement in democratic and civic processes, therefore should be closely linked and addressed in combination with other educational goals and activities. To successfully implement scientific literacy competencies into the overall teaching strategy that could help enhance science literacy skills in young adults, **the goal of this systemic literature review is to gain an overview of the most often researched learning techniques and approaches that has proven to successfully improve educational processes and enhance scientific literacy and understanding of science.**

Methodolgy

To achieve the abovementioned goal of this study, a systemic literature was carried out based on the guidance and steps suggested by Xu Xiao and Maria Watson (Xiao &Watson, 2017).

Firstly, to identify all the research articles and proceeding papers published between year 2018 and 2021 on *Web of Science* database, an initial keyword search was performed. Based on the research question of this study, the relevant keywords "Science literacy" and "Scientific literacy" were used for search resulting in total of 262 articles.

Secondly, to further narrow down the most relevant material for analysis, a qualitative review of all abstracts was performed, developing inclusion and exclusion criteria outlined below.

Exclusion criteria:

- Articles containing an overall measurement of the science literacy skills or understanding in a certain region, school or population;
- Articles measuring or comparing *PISA* results on scientific literacy;
- Articles developing and testing textbooks, learning materials (games, programmes, apps etc.);
- All other articles that are not directly describing or measuring a certain approach or technique of learning strategy concerning scientific literacy;
- All the articles other than in English.

Inclusion criteria:

- All articles involving any type of learning strategy and approach that can be generalised and replicated.

Results

After qualitative analysis of all the articles containing keywords "science literacy" and "scientific literacy", based on the inclusion and exclusion criteria, 54 articles were identified that had described a learning approach that has improved learning process and results in the subjects of science, technology, engineering or mathematics while enhancing general understanding of science and scientific literacy skills.

After careful analysis of **teaching/learning approaches** identified, the following categories used in the context of the enhancement of scientific/science literacy emerged:

- **Citizen science** (4 articles);
- **Context based** (11 articles, using contextual learning, integrated science, contextual approach synonyms, real-life based);
- **Inquiry based learning** (15 articles, including discovery learning method, guided inquiry and active learning);
- **Challenge based learning** (6 articles, including problem-based learning);
- **Socio-scientific approach** (6 articles).

Citizen science

Citizen science connects scientists and non-expert citizens while collaborating on scientific research, allowing ordinary citizens to take part in creating new scientific knowledge. Participation can include various activities such as data collection, data analysis or being part of the debate with experts, at the same time having an opportunity for public to access real time data that may influence their current lives (Golumbic et al., 2020).

Implementing citizen science projects in school curriculum demonstrates more positive attitudes and appreciation towards science, as well as affecting pupils' eagerness to learn and participate. Being able to work on real-life data students are more motivated and eager to take part in the debate whilst forming their own opinions, potentially encouraged to act and contribute to the change of their own environments, health and society in general (Queiruga-Dios et al., 2020).

Context based approach

As part of many different approaches for science teaching context-based approach have been tested in different countries and age groups and have shown positive results, improving scientific understanding and transferable knowledge to other scientific subjects (Edelsztein & Vázquez, 2021). For a successful implementation of context-based learning, the process should aim to involve a clearly defined context in which concepts are used, so that the knowledge gained is of relevance or interest to student as well as applicable to real-life situations (Gilbert et al., 2010). Contextual approach anticipates learning process in which students analyse and solve problems derived from real life problems, allowing to learn concepts of science and apply them to real world situation. Examples include analysing earthquakes and floods (Ulfah, 2019), nutrition and health-related choices, Covid-19 pandemic (Anderson et al., 2020), animal behaviour (Oberbauer et al., 2021) and many more, showing the transferability of those concepts to other scientific issues. Gilbert defined context as a "focal event in its cultural setting" (Gilbert, 2006).

Inquiry based learning

This student-cantered approach and active learning have been one of the keystones in science education for the last decades showing contradicting results. Motivated individuals and those evaluating learning atmosphere in a positive manner perform well, whereas some struggle with this learning approach (Kang, 2020). Instead of just memorising things, inquiry-based process involves planning, exploring, proposing, investigating, evaluating and guiding students' own learning process. Active involvement, observation, problem solving as well as testing the hypothesis and drawing own conclusions can contribute to greater independent thinking and better understanding of science concepts. Active learning as an investigation process that encloses the ability to come up with the research design, lead an experiment and/or gather and evaluate necessary data, present the results and findings show increased science literacy skills, better knowledge of the subject and higher competencies (Sutiani et al., 2021).

Challenge based learning/problem-based learning

Problem-based learning is one of the active learning methods that engages students into open-ended questions and hypothesis-driven research to develop self-directed learning skills and ability to acquire and apply scientific knowledge that can also be applied to other disciplines (Hussa, 2018). This approach is seen to not only improve science literacy and critical thinking skills but also enhance the ability to evaluate information and its sources. Challenge based learning approach a lot of times is mentioned in the same context and interchangeably with the problem-based approach, however, challenge-based approach is more interdisciplinary, collaborative and oftentimes international, aimed at sustainable and urgent result, yet focusing a lot on the process (Gallagher & Savage, 2020).

Socio-scientific approach

As part of problem-based learning approach the issues that is of concern for the whole society such as climate change, water supply, public health and generation of energy are put at the core of the solution-oriented learning. In the process of teamwork and interdisciplinary collaboration students addressing these global issues develop their problem-solving skills as well as enhancing well-informed decision making (Brown & Lawless, 2019). Connecting science to real life issues can enhance students' understanding about global complex issues that affects larger societal matters. Socio-scientific approach allows to develop scientific knowledge while considering potential social implications of a given issue thus thinking of science and its effect on society in a larger global scale (Ke et al., 2021). Putting the learning in the context of everyday life can increase motivation and eagerness to learn and acquire knowledge and promote better understanding of science methods and concepts.

In the final stage of this research, all the identified learning approaches were carefully analysed and compared to one another, resulting in finding key similarities which could point to the crucial qualities and characteristics distinguishing the five identified approaches from the rest when goal is to enhance scientific literacy skills (Table 1).

Table 1

	Citizen Science oriented learning	Context based learning	Inquiry based learning	Challenge based (problem-based learning)	Socio-scientific approach learning
Active learning (process)	Yes, definitely	Yes, definitely	Yes, definitely	Yes, definitely	Some, but not emphasising
Self-directed learning (process)	Mostly stems from the research problem or question set by the leading researcher or team	Could be self-directed, could be initiated by the teacher.	Focused on self-directed learning and allows many possible scenarios/solutions to solve the problem (not just one right answer)	Focused on self-directed learning, Various solutions and ways of looking at the same problem	Many sides and angles, which can give a very different perspective on the same issue
Individual responsibility (process and learning outcome)	A lot of the process is externally determined (what and how certain things need to be done)	Individual responsibility is achieved via relevance to students' life and context	Very individual-oriented learning, requiring student to take responsibility for identifying the problem and guide their own learning	Learning process is oriented on the individual work, but the problem/challenge can be presented by the teacher or found by the learner itself	Individual responsibility is achieved via relevance to real life challenges and context
Social & ethical relevance (learning outcome)	Most of the cases are very relevant to broader public, society or environment	Very much oriented for the benefit of the common good while improving individual's cognitive skills	Could be oriented on the common good, could be anything very small and relevant to individual or smaller group	Most of the time is oriented in solving an issue relevant to the broader society	In essence is always oriented towards solving a problem concerning society or environment, very ethically concerned method

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	Citizen Science oriented learning	Context based learning	Inquiry based learning	Challenge based (problem-based learning)	Socio-scientific approach learning
Learning as social experience, as communal task	The success of citizen science lies in the crowdsourcing and community engagement, so only functioning in communal process	Can be individual, can be both	Depends on the inquiry and nature of it, but could be individual or communal	Working in groups contributes to testing own hypothesis and knowledge, leading to discussions and collaborations, thus fostering understanding diverse information and knowledge (Jenkins, 2006), also contributing to greater tolerance towards different learning styles	Usually, focused group work to give the opportunity to approach highly complex and controversial issues, leading to more tolerant society
Interrelation with other learning approaches	Citizen science is unique as it's always part of larger research	Context based learning is very much related to real-life based learning, motivating the learner to approach the subject as part of their life, emphasising the relevance	IBL is a broader term, in which problem-based learning is one of the techniques. IBL can also be merged in a project-based learning approach. At the heart of the approach is the method of inquiry, self-directed learning. Unlike challenge/problem-based learning, a problem could already be solved	Problem-based learning is seen as sub-category of Context Based Learning (Overton, 2016), identifying an issue or problem that could be of relevance to both – the individual and the public. At the core of the approach is a problem that needs to be solved (and sometimes there isn't just one way)	Similarly, to challenge/problem-based learning, this approach does not restrict itself to one answer. Socio-scientific approach is considered context based learning, but adds a dimension of social context to the problem

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	Citizen Science oriented learning	Context based learning	Inquiry based learning	Challenge based (problem-based learning)	Socio-scientific approach learning
Student-cantered approach	No. Very much solution and result oriented approach	Focusing on student and his active learning process in acquisition of knowledge	Student's ability to lead his own learning process and discovery is seen as major part of this approach	Very much focused on the individual learning and student's own approach, at the same time aiming for a solution for the common good	Focused on developing students reasoning and negotiation skills, considering diverse and controversial issues
Real, concrete context	Citizen-science is real-life oriented, working on scientific project (lots of times environmental) with real-time data	One of the most important factors of the success of this approach is its relevance to the social context. Firstly, the problem is identified, then the necessary theory and knowledge is learned to solve the problem (not the other way round, as per classic education) (Sevian et al., 2018)	Most of the times the approach is using the real-life issues and problems but could also be theoretical	Real-life context and existing problem concerning broader society contributes to deeper understanding of the subject	Real, socially relevant issues are being discussed as part of socioscientific approach, such as climate change, abortion, stem cell use, energy consumption etc. (Betul Cebesoy & Chang Rundgren, 2021)
Any preparation or specific setting needed	No previous knowledge or required skills are needed, anyone can take part as long as they have interest in the topic	Usually some pre-knowledge required, at least an understanding of the topic gained from the real-life	Experienced learners usually perform better, others might struggle with management and time planning (Ellis & Gabriel, 2010)	Experienced learners usually perform better, others might struggle with management and time planning (Ellis & Gabriel, 2010)	Some interest and knowledge about the topic could help in creating engagement

Discussion

After careful analysis of the learning approaches covered in the recent research, it is evident that those above-mentioned are not strictly defined or separated, moreover – a lot of them are used, mixed and integrated, making it harder to discern and draw the borders between them. Comparison outlined in the *Table 1* shows that there are many similarities that can be identified between those approaches, which could point out the key elements to successful learning thus contributing to enhancing critical thinking skills – presence of **1) the real-life based context, 2) active, engaging learning process and 3) social, ethical relevance** to the learner's society.

The real-life based context

Evidence suggests that understanding of the science and ability to apply acquired information will not reach its full potential if gained knowledge fails to be relevant and connected to real life issues (Feinstein, 2010), which is why context-based learning, socio-scientific approach and problem-based learning has proven to be amongst successful approaches when it comes to boosting scientific literacy skills. Choosing research topic that is highly relevant to students' daily lives not only boosted engagement in the learning process, but also facilitated discussion amongst peers and demonstrated how science literacy can be developed via citizen science (Oberbauer et al., 2021).

Active, engaging learning process

Even though inquiry-based and challenge/problem-based approaches can have different learning goals and issues at heart, active and self-directed learning is a key to deeper and more thorough understanding of the problems presented, thus contributing to respectful and reasoned discussion while developing critical thinking from an early age. Research results show that ability to evaluate and form an opinion on controversial issues does not come naturally to pupils, so integrating socio-scientific issues as part of problem or inquiry in the learning process contributes to higher understanding of complex issues, allowing to enhance their decision-making and reasoning skills (Oberbauer et al., 2021). Teamwork that can and mostly is implemented in all the learning approaches identified in this systemic literature review contributes to more understanding un united society even when approaching the most controversial problems.

Social, ethical relevance

When problem presented to the learner is a challenge to the whole of the society or environment and solutions to those problems can contribute to the better society, socio-scientific approach can really benefit as being most inviting approach to open discussion for even the most diverse opinions on such as climate change, abortion, stem cell use, energy consumption etc.

Conclusions

Even though there are still challenges to be solved when integrating science literacy in the science curriculum, such as identifying which components of science literacy contributes to better understanding of science and enables students to spot misleading facts and pseudoscience as well as how to help learners to transfer skills and knowledge acquired to the real-life issues and problems (Sharon & Baram-Tsabari, 2020), it's become evident that improving scientific literacy skills is not only crucial cognitive skill for young students and learners of all age and social groups, but is also a step towards more engaging, open-minded and critically thinking society contributing to better decision making and stronger democracy (Solomon, 2021).

Acknowledgements

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PEDAGOGICAL SUPERVISION IN THE HIGHER EDUCATION STUDY PROCESS

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ABSTRACT

When starting studies, support that can be implemented in individual and group supervision is important for the development of students' personalities and academic competence.

The article aims to reveal the essence of pedagogical supervision and its application in the higher education study process. The research was implemented as a theoretical study, during which the analysis of selected sources – professional and scientific literature, research on supervision, and pedagogical supervision was performed, using induction, deduction, and comparison methods. The following keywords were used to search for data sources: pedagogical supervision, supervisee, supervision, supervisor, education, higher education. A total of 32 data sources were selected.

As a result of the theoretical research, a matrix of explanations of the concepts of *supervision, pedagogical supervision,* and *a supervisor* was created and a conceptual explanation of the concept of pedagogical supervision in the context of the higher education study process was developed. The conceptual explanation of the concept of *pedagogical supervision* developed in the research reveals the possibilities of extended application of pedagogical supervision in the higher education study process, including both the components of pedagogical supervision and the essence of supervision as such – to provide support for the growth and improvement of the supervisee.

Keywords: *higher education, pedagogical supervision, study process, supervision, supervisor*

Introduction

In the last decade, the official guidelines and normative documents of the Republic of Latvia on education policy have updated the need for both researches into the reasons for dropping out and improvement of study programs. Data from the Central Statistical Bureau of Latvia (Central Statistical Bureau, 2020) show that the number of people starting their studies has increased significantly in recent years, however, the analysis of the data collected on the Official Statistics Portal (Official Statistics Portal, n. d.) reveals that the number of those who started their studies

and those who obtained qualifications or degrees differs significantly. Thus, in 2015, 29.1 thousand students started their studies, while in 2019, 14.8 thousand (51.05%) graduates obtained a qualification or degree. In turn, in 2016, 28.6 thousand students started their studies, but in 2020, 14.5 thousand graduates, or 50.81% obtained a qualification or degree. The results of the analysis allow concluding that the studies are terminated without obtaining the planned education.

In the "Latvian Concept for the Development of Higher Education and Higher Education Institutions for 2013–2020", the current challenges are mentioned first
  • the need to increase the number of graduates by attracting a wider audience to higher education and the need to reduce the number of early studies leavers,
  • the need to improve the quality and relevance of higher education so that study programs meet the needs of individuals, the labor market, and future professions (Council of Higher Education, 2013).

In the study "Improving Student Support to Reduce the Dropout Rate from Studies in Higher Education Institutions in Latvia," Smitina (Šmitiņa, 2011) mentions several factors influencing the termination of studies: individual characteristics of the student, choice of higher education, psychological and emotional aspects of adaptation to the study environment, etc. Research shows that insufficient institutional support is one of the reasons for students' decision to drop out (Yorke, 2000). Among the reasons for dropping out of studies, Kirk (2018) also mentions the planning of semester time, when after the internship in the middle of the semester students have difficulties returning to the intensive study process, as well as low academic achievement, at the same time concluding that the reasons why students do not continue their studies are most often intertwined.

The start of studies at the university is associated with the transition period of personality socialization or the so-called *emerging adulthood*, which presents young people with opportunities, choices, and challenges (Arnett, 2007). For those who start their studies, it causes changes in lifestyle, habits, and attitudes. For some students study challenges and difficulties become a point of support for further personal development, but for others, they can become an insurmountable obstacle to successful development and growth. It is expected that students have academic competence when starting their studies at the university, however, research shows that first-year students are generally insufficiently prepared for academic challenges (Mah, 2017; Mah & Ifenthaler, 2018). Although students in the study process need to acquire both professional knowledge and general skills, including academic competence, but in the first year of studies, support is provided in higher education institutions mainly for the acquisition of

knowledge specific to the subjects (Tinto, 2012; Mah & Ifenthaler, 2018). Bluma (Blūma, 2010) points out that in previous levels of education, attention is paid to the development of a student's personality, but the development and improvement of a university student's personality are left to the students themselves.

At the beginning of studies, support is important for the improvement of students' personalities and the development of academic competence, which can be implemented in individual and group supervision, however in bachelor's programs, such individualized support is mostly provided in the final study year in the process of developing a diploma thesis/bachelor's thesis. There is a need for the support of a lecturer as a supervisor in the study process for the acquisition and improvement of students' general skills and academic competence, therefore, the question of a broader understanding and application of the concept of supervision, especially pedagogical supervision, in the context of higher education is open.

The topicality and problem of the research determined **the aim of the research**: to reveal the essence of pedagogical supervision and its application in the higher education study process.

To achieve the aim of the study, the following questions were defined:
1. What is the essence of pedagogical supervision?
2. What is the application of pedagogical supervision in the higher education study process to reduce dropouts?

Supervision and pedagogical supervision

Supervision as a concept in the scientific and cognitive literature is defined and explained differently depending on the context, however, the basic idea remains similar (Mārtinsone et al., 2012). The essence of supervision can be found in the explanation of the word *supervision* in the Cambridge Dictionary (Cambridge University Press, 2021) – supervision is the act of watching a person or activity and making certain that everything is done correctly, safely, etc. The definition of supervision in the online dictionary of the American Psychological Association (2020) also provides additional insight – supervision is a critical evaluation and guidance provided by a qualified and experienced person (the supervisor) to another individual (the trainee) during the learning of a task or process.

According to Stankus-Visha (Stankus-Viša, 2017), supervision has historically developed in two directions, marked by two models – American and European. In the American model, the supervisor is a more experienced employee who may not have a supervisor education, assists colleagues, and shares responsibility with the supervisee. The understanding of supervision in this model is mainly related to the supervision of work in one of the

assisting professions. In contrast, in the European model, supervision is understood as a variety of forms of counseling that facilitate both communication and collaboration in different professional settings. In the sense of this model, a supervisor is an independent professional who works permanently for a particular organization or is called upon to do so and who takes responsibility for leading the supervision process. The European model is being developed in Latvia.

Coimbra et al. (2020) indicate that the concept of supervision has evolved concerning the goals of educational intervention. In Portugal, the practice of supervision was initially extended to the initial training of teachers, but later it also acquired other meanings and applications, incl. in the professional development of teachers. Coimbra et al. (2020) define pedagogical supervision as the theory and practice for regulating teaching and learning in an educational context. Within the definition, the object of pedagogical supervision is pedagogy, and it aims to improve pedagogical performance and teacher skills in the supervision process.

Methodology

To achieve the aim of the research and answer the research questions, theoretical research was carried out, within the framework of which the selection of data sources and the analysis of the selected sources were performed from February to May 2021. Databases ERIC, EBSCO, the University of Latvia e-resource repository, and online search engines Google Scholar and Google were used to search for data sources, as well as hand search. The following keywords were used in the search for data sources: supervision, supervisor, supervisee, pedagogical supervision, education, higher education. A total of 32 data sources were selected, which examined and described research and findings on supervision and pedagogical supervision in the education field and reveals the experience of the implementation of pedagogical supervision and supervision in the field of education in Latvia and elsewhere in Europe and other countries. The analysis of selected sources – professional and scientific literature and research on supervision and pedagogical supervision – was performed using induction, deduction, and comparison methods.

Results

The results of the data analysis show (see Table 1) that in the 3 sources analyzed in English (Coimbra et al., 2020; April & Bouchamma, 2017; Dias & Oliveira, 2013), the use of the term *pedagogical supervision* is related to the development of teachers' pedagogical activities and skills, in turn,

in 9 analyzed sources (Nurie, 2018; Janssen et al., 2021; Qureshi & Vazir, 2016; Wolff, 2010; Agné & Mörkenstam, 2018; Määttä, 2012; Kaasila & Lutovac, 2012; Hutchings, 2017; Lee, 2008) the concept of *supervision* in the context of higher education studies is applied to the supervision of diploma theses and dissertations in bachelor's, master's and doctoral studies, and *supervisor* is extended to scientific supervisors at all levels of higher education. On the other hand, the results of the analysis of three sources (descriptions of study courses, which present the implementation and benefits of pedagogical supervision in the educational process) published in Latvian (University of Latvia, 2022a; 2022b; 2022c) show that in Latvia, the term *pedagogical supervision* is used in study titles, course descriptions and content essentially. In the descriptions of the study courses, the term *pedagogical supervision* is explained (1) as a partnership-based method of collegial support, (2) as a collegially supportive interdisciplinary method for encouraging participation and co-responsibility, and (3) as a way of solving problems in pedagogical practice.

Table 1.   Conceptual comparison of the concepts of pedagogical supervision, supervision, and supervisor

Sources analyzed in English 14		Analyzed sources published in Latvian 18	
The concept	Conception	The concept	Conception
Pedagogical supervision	Theory and practice for regulating teaching and learning in the context of education; the aim – is to improve pedagogical activity and teacher skills in the supervision process	Pedagogical supervision	Collaborative partnership-based support method; collegially supportive interdisciplinary method for encouraging participation and co-responsibility; the way of solving the problems of pedagogical practice
Supervision	Supervision of diploma theses and dissertations in bachelor's, master's, and doctoral studies	Supervision	Consultative support in matters of work and professional activity
Supervisor	Scientific supervisor in bachelor's, master's, and doctoral studies; a supervisor who works with teachers	Supervisor	A specialist in a particular professional field who has additionally obtained the qualification of a supervisor

The results of the analyzed sources published in Latvian (Mārtinsone, 2010a; 2010b; Mārtinsone et al., 2012; Stankus-Viša, 2017; Sudraba, 2017; *Professional standard for supervisors,* 2019; The Latvian Association of Supervisors, n. d.; Mārtinsone & Mihailova, 2017; Apine, 2007; Pumpiņa,

2021; Zakriževska-Belogrudova, 2020; Truskovska, 2013; Āboltiņa, 2012; Mārtinsone & Mihailovs, 2017; 2017b) show that in Latvia when developing the European model of supervision, the term *supervision* is understood as consultative support in matters of work and professional activity, and according to the Occupational Standard, *a supervisor* is a specialist in a particular professional field who has additionally obtained the qualification of a supervisor.

The results of the comparative analysis of the description of *pedagogical supervision* and *supervision* implementation in education in the sources analyzed in English and Latvian show (see Table 2), that in the three sources analyzed in English (Coimbra et al., 2020; April & Bouchamma, 2017; Dias & Oliveira, 2013), which reflect research in Portugal and Canada, pedagogical supervision is seen in the educational context as supporting the development of teachers' pedagogical activities and skills. In turn, in Latvia, pedagogical supervision at the University of Latvia was and is implemented within the study courses in master's programs in the study course "Supervision in a Pedagogical Process" (University of Latvia, 2022c) to promote the skills to apply the acquired pedagogical and psychological knowledge in pedagogical practice and in the study course "Pedagogical counseling and supervision" (University of Latvia, 2022a) to provide Master's students with an opportunity to get to know and understand the essence of pedagogical counseling and supervision for the development of pedagogical competence, management skills, and leadership, as well as in the joint doctoral study program "Educational Sciences" in the study course "Pedagogical supervision in the microsystem of preschool and basic education" (University of Latvia, 2022b) to get acquainted with and test pedagogical supervision as a partnership-based collegial support method. The results of the analysis of 9 sources analyzed in English (Nurie, 2018; Janssen et al., 2021; Qureshi & Vazir, 2016; Wolff, 2010; Agné & Mörkenstam, 2018; Määttä, 2012; Kaasila & Lutovac, 2012; Hutchings, 2017; Lee, 2008), reflecting research and experience in 7 countries – England, Finland, Slovenia, the Netherlands, Australia, Pakistan and Ethiopia – show, that supervision in the context of education is implemented as the supervision of diploma theses and dissertations in bachelor's, masters and doctoral studies. On the other hand, the analysis of 15 sources published in Latvian (Mārtinsone, 2010a; 2010b; Mārtinsone et al., 2012; Stankus-Viša, 2017; Sudraba, 2017; *Professional standard for supervisors,* 2019; The Latvian Association of Supervisors, n. d.; Mārtinsone & Mihailova, 2017; Apine, 2007; Pumpiņa, 2021; Zakriževska-Belogrudova, 2020; Truskovska, 2013; Āboltiņa, 2012; Mārtinsone & Mihailovs, 2017; 2017b) reveals, that in Latvia, by developing the European model of supervision and applying the concept of *supervision* only to consultative support in matters of work

and professional activity, supervision is implemented in such an aspect in several professional fields, incl. in education. Latvia has developed and licensed professional master's programs "Supervision" at Riga Stradiņš University and the Latvian Christian Academy, as well as the professional master's program "Management Psychology and Supervision" at the University of Applied Sciences "RISEBA". Supervision, in turn, is included in the study programs of psychology, pedagogy, social work, art therapy, and music therapy in several universities as a part of a study course or study practice.

Table 2. Comparison of implementation of pedagogical supervision and supervision in the context of education

	Sources analyzed in English	Analyzed sources published in Latvian
Pedagogical supervision	It is implemented as a support for the development of teachers' pedagogical activities and skills	It is implemented within the study courses with the aim • to promote skills to apply the acquired pedagogical and psychological knowledge in pedagogical practice (master's studies) • to get acquainted with and understand in practice the essence of pedagogical counseling and supervision for the perfection of pedagogical competence, management skills, and leadership (master's studies) • to provide an opportunity to obtain knowledge and approbate pedagogical supervision in the independent work (doctoral studies)
Supervision	In bachelor's, master's, and doctoral studies – supervision of diploma theses and dissertations	• It is implemented in various professional fields, incl. in education • Professional Master's Program "Supervision", "Management Psychology and Supervision" • Study course or study practice component in study programs psychology, pedagogy, social work, art therapy, and music therapy

In the four analyzed studies on supervision in doctoral studies (Janssen, Van Vuuren, & De Jong, 2021; Qureshi, & Vazir, 2016; Wolff, 2010; Kaasila & Lutovac, 2012) the focus is on the relationship between students and academic staff and on the role of the lecturer as a mentor in acquiring the skills necessary for starting and continuing doctoral studies.

As no explanation of the concept of pedagogical supervision in the context of the higher education study process was found as a result of the source analysis, the matrix of concepts of *supervision, pedagogical supervision,* and

a supervisor was developed (see Table 3) to provide a conceptual explanation of the concept of pedagogical supervision in the higher education study process. The matrix included 13 literature items from sources in English and Latvian (Sá-Chaves and Alarcão, 2000 (as cited in Dias & Oliveira, 2013); Mārtinsone, 2010a; Mārtinsone et al., 2012; Määttä, 2012; Dias & Oliveira, 2013; Stankus-Viša, 2017; Sudraba. 2017; Agné & Mörkenstam, 2018; *Professional standard for supervisors*, 2019; American Psychological Association, 2020; Coimbra et al., 2020; Cambridge University Press, 2021; The Latvian Association of Supervisors, n. d.).

Table 3. Findings of various authors and explanations of the concepts of supervision, pedagogical supervision, and a supervisor in various sources

Source	Authors' findings/explanation of concepts
Sá-Chaves and Alarcão (2000, as cited in Dias & Oliveira, 2013)	Pedagogical supervision should be seen as operational support, guidance, and regulation with significant importance the dimension of teaching/learning and the diversity of practice.
Mārtinsone (2010a)	The main function of learning supervision is learning, including analysis, explanation, and reflection.
Mārtinsone et al. (2012)	Supervision is often defined as a learning situation. The learning and development of the supervisee are some of the key elements of supervision.
Määttä (2012)	Supervision in doctoral studies includes four aspects – knowledge, skills, will, and action. Depending on the needs of the supervisee, the supervisor can use different possibilities of these aspects in the supervision process, taking into account his/her supervisor's style and the student's habits. The success of supervision requires the presence of all aspects. An important aspect is the specific structure of the supervisory dialogue. Students appreciate a professional supervisor who examines the issues in a structured manner and whose attitude is sincere and empathetic. Constant communication and mutual questions leading to answers are important in supervisory relationships. A lecturer-supervisor is an authority that acquires its authoritative position according to the same criteria as any lecturer among students. The authoritative position of a supervisor is determined by three criteria: (1) dominant position due to the position held, (2) the position of an expert due to his/her professional development, knowledge, and acquired skills, (3) the demanding but reliable and confidential security and protection provided to the student.
Dias and Oliveira (2013)	In the context of education, supervision is a concept related to the pedagogical practice of a more experienced person and is strongly influenced by the supervisor's position and vision, trying to see what happened before the supervision process, what happens during the supervision, and what will happen

Continued from previous page

Source	Authors' findings/explanation of concepts
	after the supervision process. The supervisor participates intelligently, responsibly, empathetically, peacefully, and engagingly in the supervision process to understand it from the inside out, analyzing through his or her vision and based on strategic thinking, to improve the learning and teaching process.
Stankus-Viša (2017)	In the American model, supervision is related to the supervision of work in one of the helping professions; A supervisor is a more experienced employee who may not have the education of a supervisor, who helps colleagues, and who shares responsibilities with the supervisee. In the European model, supervision is a form of counseling that helps to ensure both communication and collaboration in different professional settings; a supervisor is an independent professional who works permanently for a particular organization or is called upon to do so and who takes responsibility for leading the supervision process.
Sudraba (2017)	In group supervision, each participant can enrich the group work with their own experience, abilities, and conceptualization. The main benefits of group supervision are feedback, mutual support, the formation of different points of view, and learning from the experiences of others.
Agné and Mörkenstam (2018)	Collective supervision enhances peer learning as a teaching and learning strategy in which students learn together and from others without the immediate intervention of lecturers.
Occupational Standard of Supervisor (2019)	A supervisor is a specialist in a certain professional field who has additionally obtained the qualification of a supervisor and who provides supervision services – purposefully organized consultative and educational support received in the professional context by an individual, group, or organization intending to improve professional competence and quality of the professional activity.
American Psychological Association (2020)	Supervision is a critical evaluation and guidance provided by a qualified and experienced person (the supervisor) to another individual (the trainee) during the learning of a task or process.
Coimbra et al. (2020)	Pedagogical supervision is the theory and practice for regulating teaching and learning in the context of education. The object of pedagogical supervision is pedagogy, and it aims to improve pedagogical activity and teacher skills in the supervision process.
Cambridge University Press (2021)	Supervision is the act of watching a person or activity and making certain that everything is done correctly, safely, etc.
The Latvian Association of Supervisors (n. d.)	Supervision is a reflection on issues related to work and professional activity.

Discussion

Two questions were defined in this study: "*What is the essence of peda-gogical supervision?*" and "*What is the application of pedagogical supervision in the higher education study process to reduce dropout?*". The results of the data analysis reveal differences in the sources in English and Latvian in the understanding of the concept of pedagogical supervision and its imple-mentation. In research published in the context of education in English, *pedagogical supervision* is linked to the development of teachers' pedagogi-cal activities and skills, *supervision* means the supervising of diploma theses and dissertations in bachelor's, master's, and doctoral studies, in turn, the concept of a *supervisor* is extended to scientific supervisors mostly in doc-toral studies or supervisors who work with teachers. In Latvia, pedagogical supervision is implemented within the framework of master's and doctoral study courses to promote the skills to apply the acquired pedagogical and psychological knowledge in pedagogical practice, to get acquainted with and understand in practice the essence of pedagogical counseling and supervision for the improvement of pedagogical competence, management skills, and leadership and to provide an opportunity to get to know and test pedagogical supervision in independent work which is more in line with the American model of supervision.

Summarizing the concepts and explanations of the concepts included in the explanatory matrix of *supervision*, *pedagogical supervision,* and *supervisor,* a conceptual explanation of the concept of pedagogical supervision in the context of the higher education study process was developed.

> Pedagogical supervision is the interaction between the lecturer-su-pervisor and the student-supervisee, in which the student is provided with supervision, support, guidance, and regulation, which includes analysis, explanation, and reflection for the improvement of the stu-dent's knowledge, skills, will effort, and actions in the study process, which takes into account the needs and habits of the student-super-visee and supervisor's work style. In group and collective supervi-sion, students learn together and from each other's experiences, pro-viding mutual support, and feedback, and creating different points of view, without the immediate intervention of a lecturer-supervisor. The lecturer-supervisor implements pedagogical supervision within the limits of his/her pedagogical competence as an expert, which does not require the professional qualification of a supervisor.

In the research on supervision in doctoral studies (Janssen, Van Vuuren, & De Jong, 2021; Qureshi, & Vazir, 2016; Wolff, 2010; Kaasila & Lutovac, 2012), the updated topics on the relationship between students and academic staff and the role of the lecturer as a mentor in acquiring

the skills necessary for starting and continuing doctoral studies are also especially important in reducing undergraduate studies.

The solution and answer to the second question of the research "*What is the application of pedagogical supervision in the higher education study process to reduce dropout?*" can be found in the broader understanding and application of the concept of pedagogical supervision in bachelor's study programs, providing support to young students for the improvement of knowledge, skills, will effort and actions in the study process to continue studies and reduce drop-out rates. Taking into account the results of theoretical research that reveals the understanding, explanation, and application of the concept of supervision and supervisor in Latvia according to the European model of supervision, the need for a broader understanding and application of the concept of pedagogical supervision is especially important in the Latvian context. An expanded understanding and application of the concept (see Figure 1) includes (1) aspect of pedagogical supervision, by which is meant the lecturer-supervisor as an expert, who implements pedagogical supervision within the limits of his or her pedagogical competence – as an expert, he/she already has the necessary knowledge, skills, and competencies for the implementation of pedagogical supervision, which does not require the qualification of a supervisor, (2) aspect of supervision, by which is meant supervision as support, guidance, and direction for the comprehensive and not only professional development of young students. It should be noted that pedagogical supervision in Latvia has been and is being implemented in master's and doctoral study programs with the aim (1) to promote skills to apply the acquired pedagogical and psychological knowledge in pedagogical practice, (2) to get acquainted with and understand in practice the essence of pedagogical counseling and supervision for the improvement of pedagogical competence, management skills, and leadership (in master's studies) and (3) to provide an opportunity to get to know and approbate pedagogical supervision in independent work to encourage the development of innovative ideas (in doctoral studies). In its turn, supervision in Latvia is offered and implemented as a deepening of the profession and promotion of professional development in study courses, study practices as well as in various professional environments, and the profession of the supervisor is regulated by the Standard of the Profession of Supervisor and is acquired in three master's study programs implemented in Latvian higher education institutions. So far, five books have been published in Latvian on the issue of supervision (Apine, 2007; Mārtinsone, 2010b; Mārtinsone & Mihailova, 2017; Zakriževska-Belogrudova, 2020; Pumpiņa, 2021) as well as two doctoral theses on the topic of supervision have been developed and defended (Āboltiņa, 2012; Truskovska, 2013) thus strengthening the positions of the implementation of the European model of supervision in Latvia,

however, the question of the need for the support of a lecturer as a supervisor in the study process for the improvement of students' personalities and the development of academic competence is still relevant.
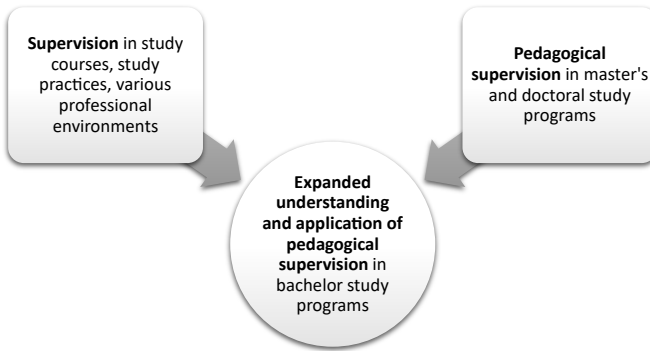
Figure 1. Expanded understanding of supervision and pedagogical supervision in the Latvian context

The limitations of this study are determined by the small number of data sources found on pedagogical supervision. In the course of further theoretical research, an extended search of data sources in various databases should be carried out to gain a broader insight into the application of pedagogical supervision in education. The experience of certain countries, such as Portugal, the United Kingdom, and Iceland, in the implementation of pedagogical supervision in higher education, should be considered as an additional aspect of research. The results of the research would be comparable and applicable to the situation in Latvia.

The results of this theoretical research will be used for further research of the conceptual explanation of the concept of *pedagogical supervision* in the context of the higher education study process and the development of a theoretical concept for the development of students' academic competence in the application of art therapy techniques.

Conclusions

The results of the theoretical research on pedagogical supervision in the higher education study process have revealed the narrow application of pedagogical supervision in the educational environment to promote the improvement of teachers' professional competence and pedagogical activity. At the same time, the results of the research reveal linguistic nuance in the use of the concepts of *supervisor* and *supervision* in English and Latvian. In English, the word *supervisor* in the context of education refers

to both – a supervisor who provides support in the professional activities of teachers and a scientific supervisor of degree or qualification work. In the Latvian language, the word *supervisor* in the context of education is used in the study process, acquiring study courses related to supervision, or participating in supervision, which is intended in the study process for the acquisition of a specific profession. In turn, the word *supervision* in English in the context of education means the scientific supervision of diplomas, qualifications, and doctoral theses, but in the Latvian language, the word *supervision* in the context of education is used in the titles of study programs and study courses, meaning the acquisition of a specific profession or the experience of supervision during the acquisition of a profession.

The conceptual explanation of the concept of *pedagogical supervision* developed in the research reveals the possibilities of its extended application in the higher education study process, including both the components of pedagogical supervision and the essence of supervision as such – to provide support for the growth and improvement of the supervisee. The extended application of pedagogical supervision in the bachelor's study process would enable students to receive support not only for narrow professional growth and improvement but also for personal development and academic competence development, thus reducing the risks of dropping out and promoting the intended education and qualification or degree.

Acknowledgment

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UNIVERSITY STUDENTS' PERSPECTIVES REGARDING HYBRID LEARNING DURING THE PANDEMIC TIMES

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ABSTRACT

Education has earned a novel façade and definition with the advent of technology. Furthermore, this ongoing education perspective has adapted itself to the challenges and difficulties it has encountered in recent years. Pandemic has been one of those challenges. During the pandemic, education remained stable and even retrogressed. Therefore, the necessity for new learning models has become a current issue. Hybrid learning has become one of the innovative learning models. Recently, hybrid learning has obtained a very crucial role in teaching. However, the quality and effectiveness of hybrid learning are still vague. This research paper aims to explore and analyse university students as well as a university professor's and a schoolteacher's perspectives regarding the hybrid learning in the context of pandemic. The research sample comprised of 73 university students, including pre-service teachers and master students as well as a university professor and a schoolteacher. Questionnaire was conducted through Google Docs which included 13 questions based on Likert's scale, and interviews were conducted on Microsoft Teams with a university professor, a schoolteacher and two students, through which five questions regarding their general perspectives on their experiences on hybrid learning were asked. In conclusion, the findings of this research paper provide answers to the questions regarding hybrid learning such as how hybrid learning is defined by the university students, what the most common problems that the students have encountered during hybrid learning in pandemic times are, which advantages and disadvantages of hybrid learning have been experienced and the related issues. These findings suggest that while hybrid learning takes place, the negative aspects (drawbacks) have outnumbered the positive aspects and indicates the need for further improvement and advance in future implication of hybrid learning.

Keywords: *education in pandemic, hybrid learning, online education, students' perspectives, synchronous learning*

Introduction

The COVID-19 pandemic has broken out unexpectedly and it brought about far-reaching changes in every aspect of human daily life, including

radical changes to education systems at all levels (Karakose, 2021). The transition from traditional education model to online education model has exponentially been regarded as a must. Similarly, Mohammed and Mudhsh (2021) commented that the current era is witnessing several effects and a necessary change in the education system due to the spread of COVID-19, which shifted education from offline education to online education on educational teaching platforms. After the beginning of the pandemic, various educational models either came into existence or regained popularity. As there are some severe disadvantages to online learning in terms of communication (social isolation and absence of communication), limitations (feedback, inappropriateness, and accreditation), and authenticity (cheating) as proposed by Alodwan (2021), the necessity for the fully face-to-face delivery model or at least combination of face-to-face and online learning has come out again. Hybrid learning has become an appropriate learning model for this necessity and proved to be one of the most common models during the pandemic. Hybrid learning has various definitions from various points of view but the one that is provided by College du Page (n. d) states that hybrid learning combines face-to-face and online teaching into one cohesive experience. Nearly half of the class sessions are on-campus, while the other half have students working online at the same time. In other words, hybrid learning synchronously enables students to attend the session either in face-to-face (traditional) settings or on online platforms, which could be described as their preference rather than fully face-to-face or fully online learning alone. On the other hand, hybrid learning has frequently been misidentified by some scholars as they claim that the terms hybrid and blended can be used interchangeably. However, these terms refer to various aspects. College du Page (n. d.) theorizes that whereas hybrid refers to teaching that is roughly balanced between face-to-face and online learning (think 50/50), blended refers to a mostly traditional face-to-face course that also incorporates a few sessions' worth of online instruction (think 25/75). In other terms, hybrid learning has comparably more online learning while blended learning perceives online learning as a supportive delivery mode to face-to-face learning to create a more variable learning context. Hybrid learning has made its name as one of the most preferred learning models during the COVID-19 pandemic times. However, the perspectives and experiences regarding hybrid learning have remained stable and unanalysed, which has resulted in stagnation in hybrid learning literature depth. Therefore, this research is projected to contribute to the literature profundity through the investigation of the perspectives of university students regarding the hybrid learning during the pandemic.

Literature review

Hybrid learning has come out as a current, popular, and novel learning model in recent years. There has been some research that contributed to its literature depth. These literature sources have shed light upon further studies in the field. In these sources, hybrid learning has thoroughly been discussed, developed, defined, and analysed in various aspects by different authors. Martyn (2003) states that the hybrid online model employs the best characteristic of online education and interactivity that typically characterizes face-to-face classroom instruction. As it can be concluded that face-to-face and online learning are complementary of each other in terms of the advantages they can share. Likewise, hybrid learning offers a possibility to provide engaging learning opportunities to students by combining a face-to-face medium of instruction with online learning opportunities (Singh, Steele, & Singh, 2021). Therefore, hybrid learning provides students with a sense of preference over both learning models and optimality in general. On the other hand, students might not know about the hybrid model as they could have not experienced this model before. To overcome this, Yang and Spitzer (2020) found out that class observations showed that in the first two weeks, the students asked more questions on the set-up of the course and the requirements of the online activities. Therefore, to familiarize the students with the aforementioned model, the first couple of weeks would function as a set-up or primary implementation of the model, in which the students get to know it by personally getting involved and practicing.

Hybrid learning has stood out among the other learning models as it serves numerous advantages. Primarily, it combines advantages of both face-to-face and online learning. For instance, Hall and Villareal (2015) concluded that in the busy lives of students who managed full-time family and work responsibilities, the online components of hybrid learning provided independence with which to pace their learning process. Accordingly, students follow more autonomous pathways mainly based on their performance, hence they can spare more time for their personal life and responsibilities. Additionally, Zein et al. (2019) found out that hybrid learning shows improved results than conventional learning. This is possible because learning has changed from the teacher-centred learning paradigm to learning that emphasizes the activeness of students to construct their knowledge through problem challenges, discovery activities, and works in small groups or class discussions. In other words, hybrid learning enables students to experience more modern and student-centred learning settings and to build their knowledge based on their discovery and autonomous personalities. This leads to more quality and creativity-prone learning and supports the fact that hybrid learning outperforms the conventional learning model.

Similarly, hybrid learning enables the students to practise and reinforce their digital literacy. Therefore, students may develop self-confidence and self-efficacy Prior et al. (2016) also agree that the similarities between digital literacy and self-efficacy suggest a close, positive relationship between these concepts. Therefore, the study hypothesizes that digital literacy will lead to self-efficacy in online distance education. Implicitly, self-efficacy may lead to a more autonomous and productive student setting.

In addition to previously mentioned, there have been a few standpoints to be regarded as crucial aspects. In this respect, Karabulut-Ilgu and Jahren (2016) emphasized that hybrid course design requires a careful reconsideration of learning objectives, learning activities, assessments, as well as communication channels. To make it clear, hybrid learning must determinately focus on the elaborate progression steps and consistently follow the procedures that are pre-determined in the syllabi in order to take benefit of the conducted model as much and successful as it could. The other aspect to take into account is to analyse and observe the relationship between the students and teachers during the hybrid learning as previously mentioned above, this model has already realized the transition from teacher-centred notion to student-centred setting with the advent of the latest technological advances in last two decades. Masalimova et al. (2021) also stated that the introduction of collaborative technologies radically changes the interaction between the teacher and students. For this reason, teachers must seek to find a way to conduct this model, in which they are aware of their roles in the hybrid model setting, and this can happen as long as the courses are held synchronously rather than asynchronously. In this respect, facilitator or supporter teacher roles could preferably be more appropriate while conducting this model on both the students and the course. In contrast to all these aforementioned advantages and key points to regard in hybrid learning, there have been some limitations that come with the hybrid learning model. The term "hybrid learning" made a name for itself in the COVID-19 pandemic context even though its birth dates back two decades ago. Its advantages are newly acquired. Similarly, Holley and Oliver (2010) conclude that previous background knowledge in any unconventional learning plays a crucial role in students' performance as well as their studies. Consequently, if the students are not subject to any introduction or warm-up session in hybrid learning, they may not put up a satisfactory performance and concentration, which may affect the general relevance and flow of the learning negatively. The other point to regard as a limitation is the access to technological devices and computer literacy. Many students are still struggling to find technological devices and the internet to connect to online classes. Accordingly, Moreno et al. (2021) emphasize that during the pivot

hybrid learning, many students do not have access to adequate devices and Internet access for remote education. Thus, the students are unable to improve their digital and technological literacy, which significantly damages their learning process. Sanpanich (2021) draws attention to the fact that computer literacy is an essential skill in hybrid learning as students tend to use computers and technology to get access to course materials, complete their tasks, plan their studies, and interact with teachers and peers. However, this limitation has stabilized itself in hybrid learning and still is regarded as a drawback in a quality learning setting. Interaction is another important aspect of learning. Ayuwanti et al. (2021) remark that teacher-student interaction needs to be created, and students need attention, stimulation, and guidance in learning. However, hybrid learning, in line with its functions lacks a consummate and conventional interaction inside the triangulation teacher, student, and content as hybrid context includes online aspects either. When the interaction, which is a key factor in learning is neglected. The hybrid learning could not fully be benefited. Abrami et al. (2011) agree that teacher, student, and content triangulation are directly proportionate to the success of learning as long as the interactions are well-performed in the context. Likewise, Parker and Parker (2013) concurred that interaction in online learning possesses a considerable effect, and without interactions among students or between students and instructor, the process of online learning would be severely limited or halted. Therefore, this may lead students to isolation, demotivation, and absence in online learning (McElrath & McDowell, 2008).

Methodology

Purpose of the Research

This research paper aims to explore and analyse university students as well as a university professor's and a schoolteacher's perspectives regarding the hybrid learning in the context of pandemic. This research paper also will seek to answer the following research questions;

1. What the university students' perspectives regarding the hybrid learning during the pandemic times are;
2. What a university professor's and a schoolteacher's perspectives regarding the hybrid teaching during the pandemic times are.

Research Participants

This research has included 73 university students for both questionnaire and interview as well as a schoolteacher and university professor for interview for the purpose of data collection procedure. The data have been collected from 60 Bachelor Programme, nine Master Programme and one

Doctoral Programme students as well as one secondary teacher and one university professor. The respondents have experienced the hybrid learning and teaching.

Table 1. Questionnaire Respondents' Background ($n = 73$)

Respondents' Study Level	Frequency (Entries)	Percentage (%)
Bachelor Programme	60	82.2
Master Programme	9	12.3
Doctoral Programme	4	5.5

Table 2. Interviewees' Background ($n = 4$)

Interviewee (Pseudonym)	Gender	Background
Jack	Male	English Language Teacher Programme Student
Mary	Female	English Language Teacher Programme Student
Sofia	Female	English Teacher Schoolteacher
Katty	Female	Professor of Teacher Education in English Language Teacher Program

Research Model

The research was conducted through mixed data collection models, which validate the findings using quantitative and qualitative data combined (Wisdom & Creswell, 2013). For quantitative component, the survey has been used through a self-administered online questionnaire to determine the number of students that perceive hybrid learning from various aspects and provide statistical description of the respondents. For qualitative data, semi-structured interviews have been conducted with a schoolteacher, a university professor and two university students for their perspectives regarding the hybrid learning. The findings of both data collection models are analysed and transcribed into numerical data and shown in the tables and figures.

Data Collection Tools

As a quantitative data collection model, self-administered and online five-point Likert's scale questionnaire has been conveyed to the respondents through Google Forms. The respondents were asked thirteen questions regarding hybrid learning including a question of their study programme level (Bachelor, Master and Doctoral Programmes). As a qualitative data

collection tool, semi-structured interviews were conducted with university students, schoolteacher and university professor. The interviewees were asked questions regarding their experience with the hybrid learning and teaching, problems they had encountered, and advantages and disadvantages of hybrid learning and teaching and general overview on the model.

Data Analysis

Quantitative data were collected in the period of two months through Google Forms and diverted into statistical data through SPSS (Statistical Package for the Social Sciences). The data such as mean, standard deviation, frequency and percentage were obtained. Similarly, qualitative data were collected in a two and half months period by interviews conducted on Microsoft Teams. They were transcribed in the next day after the interview. All the data obtained were used in the research paper through excerpts to support the statements.

Results and discussion

In the next section, the findings from quantitative and qualitative data are elaborately presented to give reasonable answers to aforementioned two research questions.

Students were asked to choose the most relevant definition (see Table 3) depending on their hybrid learning experiences (all of these definitions were correct).

Table 3. Hybrid Learning Definition Preferences by the Respondents ($n = 73$)

Questionnaire Items	Frequency	Percent (%)
Hybrid learning is the integration of electronic learning (e-learning) with classical/traditional classroom instruction and fosters some highly desirable developments, such as more individualized and flexible learning. (Bärenfänger, 2005)	28	38.4
Hybrid learning combines face-to-face group and online teaching group into one cohesive experience group at the same time in the classroom. (College of DuPage, n. d.)	24	32.9
The hybrid online model employs the best characteristics of online education and the interactivity that typically characterizes face-to-face classroom instruction. (Martyn, 2002)	13	17.8
Hybrid learning creates a more adaptive and engaging learning environment compared to fully online or fully on-site instruction. (Raes et al., 2019)	8	11.0

Through this question, the perspective of the respondents towards hybrid learning were determined. Even though the majority of respondents (38.4% which is 28 of 73) agreed that the definition by Bärenfänger (2005) complied with their hybrid learning experience, other vast group of respondents (32.9% which is 24 of 73) supported the statement made by College of DuPage (n. d.). Others preferred the explications by Martyn (2002) and Raes et al. (2019) by 17,8% (which is 13 of 73) and 11.0%, (which is 8 of 73) respectively.

According to Table 4.1, in terms of workload and responsibility, the majority of students (45.2% which is 33 of 73) expressed their opinions in favour of increased workload in hybrid learning compared to pre-pandemic times. However, other large group of students (39.7% which is 29 of 73) claimed that their workload had decreased in contrast to face-to-face setting. Other students perceived their workload the same as it used to be. The workload and responsibilities the students adapted mainly focused on their experiences in hybrid setting. However, since the online attendees were expected to do extra-curricular activities such as online material use, control technical issues and lack of active interaction with the present students and teacher, the online attendees might be required to do more than those who attended face-to-face. According to Jack, one of the interviewees, the workload issue is interpreted as follows "...*in hybrid learning, you have much more work to do by yourself. You mainly have to run activities related to your studies by yourself. It is even much further to focus on your work at home as your family members or pets may not allow you to do your work...*" (*Jack, Interviewee 1, P. 2)*. More than half of the respondents (54.8% which is 40 of 73) agreed that they were more attentive and showed active participation when they attended online in hybrid setting compared to fully online setting. In other words, they felt like they needed to catch up with present students in the classroom. Therefore, they were motivated to demonstrate more in participation and attendance. On the other hand, some other participants (31.5% which is 23 of 73) claimed that they were not able to actively get involved in the sessions and showed less interest in attendance. Sofia, English teacher and one of the interviewees stated that *"The participation was not very affected in hybrid setting. Furthermore, they were also quite willing to attend the classes face-to-face as much as possible. Those who attended online were mainly infected with COVID-19 and they managed to attend the classes online." (Sofia, Interviewee 3, P. 1)*. In contrast to Sofia's statement, Katty, university professor and other interviewee summarized her experience from a different aspect*"...In terms of participation, I would say many more were attending online. But on the other hand, you cannot be 100% percent sure that they are sincerely attending. Especially, when they are not switching on their cameras..." (Katty, Interviewee 4, P. 2)*.

Table 4.1. Perspectives of University Students Regarding the Hybrid Learning During the Pandemic Times ($n = 73$)

Questionnaire Items	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total	Std. Dev.	Mean
1. My workload has increased during both synchronous face-to-face and online sessions in hybrid setting as compared to fully face-to-face sessions.	8 (11.0%)	25 (34.2%)	11 (15.1%)	26 (35.6%)	3 (4.1%)	73 (100.0%)	1.14	2.88
2. I am more attentive to the sessions and get involved with more active participation during the synchronous online sessions in hybrid setting compared to fully online sessions.	9 (12.3%)	31 (42.5%)	10 (13.7%)	19 (26.0%)	4 (5.5%)	73 (100.0%)	1.15	2.70
3. I experience and learn in synchronous online sessions as much as I do in synchronous face-to-face sessions in hybrid setting.	7 (9.6%)	23 (31.5%)	7 (9.6%)	27 (37.0%)	9 (12.3%)	73 (100.0%)	1.25	3.11
4. I demonstrate satisfactory performance during the synchronous online sessions in hybrid setting.	13 (17.8%)	26 35.6(%)	16 (21.9%)	14 (19.2%)	3 (4.1%)	72 (One missing datum) (98.6%)	1.12	2.56

In hybrid educational model, the most remarkable feature is that it gives students the chance to experience online and face-to-face learning synchronously. Hence, the necessity to elicit their perspectives on whether online attendees learn as much and equally as present attendees in hybrid setting. As a result, more respondents (49.3% which is 36 of 73) indicated that online attendees were unable to receive as productive and plentiful benefits as face-to-face attendees. To put differently, the unfair gap in learning between these two groups is evidently experienced by the students. In opposition to this, comparably fewer respondents (41.1% which is 30 of 73) opposed to this perspective and claimed that they had managed to learn as much as present students did in hybrid learning despite of the fact that they might suffer some technologic, educational or organizational challenges that they came across. Student's performance in hybrid learning setting is also a key point to take into regard. In order to learn more about the hybrid learning and boost the potential future implication of hybrid educational model, how the students perform and learn through hybrid learning must be thoroughly investigated. In the case of online attendee students, the vast majority of respondents (53.8% which is 39 of 73) evaluated their performance pretty well in hybrid learning context. In other words, students continued their learning without any significant obstacles in hybrid setting. Katty reviewed her performance as more critical-thinking oriented experience*"...I had to think about all the possible situations and cases. Even I could not know what would really happen. I also constantly kept in mind that what one group might do and what other group might not do. The hybrid model was practical for me as I had chance to see how to make these things applicable in both online and face-to-face settings..." (Katty, Interviewee 4, P. 1)*. Conversely, relatively small amount of respondents (23.3% which is 17 of 72) came up with the opposite idea that online attendees were unable to label their performances as good as they imagined in hybrid learning. According to the rest of respondents (21.9% which is 16 of 72), their performances were satisfactory during the synchronous online sessions in hybrid setting.

Table 4.2. Perspectives of University Students Regarding the Hybrid Learning During the Pandemic Times ($n = 73$)

Questionnaire Items	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total	Std. Dev.	Mean
5. I have more convenient access to the synchronous online sessions in hybrid setting than fully face-to-face sessions.	24 (32.9%)	32 (43.8%)	6 (8.2%)	7 (9.6%)	4 (5.5%)	73 (100.0%)	1.13	2.11
6. I perform more independently on my tasks and assignments and explore the materials autonomously in synchronous online sessions in hybrid setting as compared to fully face-to-face sessions.	19 (26.0%)	28 (38.4%)	12 (16.4%)	12 (16.4%)	2 (2.7%)	73 (100.0%)	1.11	2.32
7. During synchronous online sessions in hybrid setting, I actively interact with the content, teacher and other students and easily engage with them in cooperation.	8 (11.0%)	17 (23.3%)	18 (24.7%)	22 (30.1%)	8 (11.0%)	73 (100.0%)	1.19	3.07
8. In hybrid setting, as an online attendee, I am more literate about technology and use of online sources as compared to synchronous face-to-face attendees.	11 (15.1%)	39 (53.4%)	14 (19.2%)	7 (9.6%)	2 (2.7%)	73 (100.0%)	.94	2.32
My learning expectations are met within hybrid learning setting.	2 (2.7%)	29 (39.7%)	22 (30.1%)	13 (17.8%)	7 (9.6%)	73 (100.0%)	1.03	2.92

Having been the standout factors of the most promising features of hybrid educational model, convenience and availability are key terms that highly explain what hybrid learning model is according to the respondents (See Table 4.2). A remarkable number of students (76.7% which is 56 of 73) commented that they had more accessibility and convenience than pre-pandemic times as they could simply choose which hybrid model (onsite or online) that they could take part in contrast to a few students (15.1% which is 11 of 73) who disagreed. According to the interviewees' experiences, convenience and accessibility came up with numerous aspects. For instance, in Jack's case, he summarized his experience as follows *"Some people couldn't come in-person. Therefore, hybrid model is an alternative for all student to attend the class. At the beginning of the semester, I personally could not come as I was not fully vaccinated and not allowed to step in the school. However, we were able to attend online simultaneously. It gave me an opportunity to benefit from convenience and availability." (Jack, Interviewee 1, P. 1).* Likewise, Mary also shared her experience from similar perspective *"As for the hybrid learning aspect, it was quite convenient for me as I could write everything on my computer. However, if I were an in-person attendee, it would be challenging for me to bring my computer and multitask at the same time." (Mary, Interviewee 2, P. 3).* A respectable number of respondents (64.4% which is 47 of 73) highlighted that in hybrid setting, they had more unguided time compared to pre-pandemic times as individuals as the teacher had to pay attention to both groups. In this case, the more independent works and performances emerged. Specifically, online attendees had much more individualized and autonomous work to do as since they needed to explore the materials and do the tasks and assignments online. This led online attending students to adapt new roles and responsibilities to work on their assignments and tasks as more independent individuals. Jack mentioned the challenge for working independently on his studies as follows *"In pandemic times, I was always at home. There was more time for the studies as I didn't have to travel Riga from my hometown like pre-pandemic times. If I had any questions, I had to send an e-mail to the lecturer or tried to find my own answers. That is, the communication barrier between the lecturer and the students could be clearly felt." (Jack, Interviewee 1, P. 1).* The term "interaction" had also reformed its existing meaning with its new birth in hybrid setting. Online attendees in hybrid learning were basically not able to interact with the teacher, other students and contents (session) and easily engage them in cooperation according to considerable number of respondents (41.1% which is 30 of 73) as opposed to agreeing respondents (34.3% which is 25 of 73) and neutral respondents (24.7% which is 18 of 73). Technical, educational or organizational issues might prevent an appropriate interaction between teachers, present students and content and online attendee students. In the

interviews, interviewees experienced various obstacles that prevented them from a healthy and secure interaction with the others. Mary demonstrated a story regarding the hybrid learning *"The hybrid learning was quite similar to that of fully online but my attention to the course was a bit shorter as teacher was not paying equal attention to those who attended online. She was focusing more on onsite students. I felt not quite involved in the lectures. But when it was fully online, teacher used to pay attention to all the students equally. For instance, when I had to ask a question, I had to switch on the camera and microphone and ask it, but it would take time for teacher to realize the question." (Mary, Interviewee 2, P. 3)*. In the eyes' of her role as professor, Katty presented her position in hybrid teaching as follows *"I had one fully qualified and equipped auditorium. In this less equipped auditorium, I had to pay more attention to those who were present. However, I remember, in one class, I had two students present and five or six students were attending online. In this case, I had to pay more attention to online attendees. Did you see? The number of students determines those to whom I should pay attention." (Katty, Interviewee 4, P. 1)*. Technological literacy was also one of the pioneering features that hybrid model led students to adopt. Despite of a few objecting respondents (12.3% which is 9 of 73) and neutral respondents (19.2% which is 14 of 73), dominating part of respondents (68.4% which is 50 of 73) favoured that when they attended online, their technological literacy, use and awareness in the scope of learning were greatly improved. In other words, as it was stated previously, online attendees had to work independently and were supposed to perform more on the computer. In the same way, their practical knowledge in technology use and technical awareness in the hybrid setting increased significantly compared to those who were present in the classroom. Katty supported this idea by indicating *"...what I find challenging about the hybrid model is that it requires a strict and structured lesson plan and higher technological literacy. Every day, latest updates and developments regarding the teaching platforms such as Microsoft Teams or Zoom are coming out. I need to keep up with them." (Katty, Interviewee 4, P. 1)*. In general overview of hybrid model, the majority of students (42.4% which is 31 of 73) indicated that their learning expectations were met. They assured that they learnt as much as they would do in fully online or face-to-face learning. However, some more respondents (27.4% which is 20 of 73) claimed that their learning in hybrid setting was not as satisfied as they had expected. They attended that either fully online or fully face-to-face setting must be set as default learning model. On the other hand, more respondents (30.1% which is 22 of 73) demonstrated that their experience in hybrid learning was neither above nor below their expectations.

Table 5.1. Educational Problems Encountered by Respondents (multiple choice was possible)

Problems	Number of Responses	Percent (%)
Disengagement and demotivation during the session	48	34.3%
Monotonous sessions	46	32.9%
Ineffective teaching model	36	25.7%
Unfair assessment	10	7.1%
Total	**140**	**100%**

Valid		Missing		Total	
N	**Percent**	**N**	**Percent**	**N**	**Percent**
68	93.2%	5	6.8%	73	100.0%

In hybrid setting, some problems that stemmed from educational or organizational impacts were determined by the respondents. In this case, considerable amount of respondents (34.3% which is 48 of 73) indicated that during the hybrid learning, they have suffered from disengagement and demotivation during the session as previously stated, teachers' attention portioned into two groups and this led students to take care of themselves during the session. Similarly, numerous respondents (32.9% which is 46 of 73) defined their hybrid experiences as monotonous session. In hybrid learning, the respondents mainly alleged that procedures, technical and educational issues to realize hybrid learning outpaced the learning itself and therefore, the sessions turned out to be tedious and unexciting. Similarly, other respondents emphasized that hybrid was ineffective model (25.7% which is 36 of 73) and they were subjected to unfair assessment (7.1% which is 10 of 73) during the hybrid learning. Jack stressed his point of view as follows; "... *making half of the class online and other half face-to-face will lose its chemistry and focus. It must be either fully online or fully face-to-face...*" (Jack, Interviewee 1, P. 1)

Aside from education-related problems in hybrid model, organization-oriented problems can also come about. Lack of awareness, unguided learning management, underdevelopment or unsupportive approach might be regarded as primary grounds for these problems. According to overwhelming majority of respondents (77.3% which is 51 of 73), as one of the most common problems, internet disconnection could be detrimental to the successful implementation of hybrid learning. Precautions that are taken by the relevant institutions or people would create a supportive connection for hybrid setting.

Table 5.2. Organizational Problems Encountered by Respondents (Multiple choice was possible)

Problems	Number of Responses	Percent (%)
Internet disconnection	51	77.3%
Irregular course schedule	19	28.8%
Technologic equipment shortage	17	25.8%
Technologic equipment illiteracy	16	24.2%
Other	8	12.1%
Total	**111**	**100%**

Valid		Missing		Total	
Number	**Percent**	**Number**	**Percent**	**Number**	**Percent**
66	90.4%	7	9.6%	73	100.0%

Furthermore, considerable number of respondents (28.8% which is 19 of 73) affirmed that irregular course schedules made it more demanding. To illustrate, as it was mentioned, convenience became an attractive advantage in hybrid learning, especially for online attendees. In a comparable manner, irregular course schedule benefited online attendees. On the other hand, present students were not able to keep up with the course schedule, which would eventually lead them to attend online. Some respondents (25.8% which is 17 of 73) remarked that technologic equipment shortage also impacted the learning in hybrid setting. As many institutions were caught off guard due to the breakof COVID-19, they were not able to furnish their institutions with appropriate and quality equipment to provide convenient learning environment. Katty uttered her experience as follows.*"...the hybrid teaching went quite easy for me. I had capacity to teach effectively as I had an auditorium, which is equipped with all necessary and applicable technological devices. On the other hand, I had two other auditorium halls for nearly one hundred students and some ten of them were behind the screen and these rooms were not as equipped as advanced one and it was comparably a bit more challenging even to turn off the sound to hear those who were behind the screen..." (Katty, Interviewee 4, P. 1)*. Lastly, a number of respondents restated that technologic equipment illiteracy (24.2% which is 16 of 73) also played crucial role in implementation of hybrid learning. In other terms, the more you are conscious on benefiting the technologic equipment, the more uninterrupted the learning will become. Even though online attendees and teachers would benefit the most, present students may also raise their awareness on the significance of technologic literacy in hybrid learning.

Conclusions

This research mainly focused on the perspectives of university students regarding the hybrid learning model in the context of COVID-19 and hence, sought answers to two research questions. The findings demonstrated that hybrid setting had been seen as a premature learning model but proved a promising model in future according to most of the participants. Technical and education-related issues negatively impacted and decreased the efficient and potential influence of hybrid model. In general, hybrid learning came up with diverse benefits and drawbacks. Flexible, convenient and novel had been featured as the benefits while lack of technical equipment and literacy toward this new model, unequal learning between online and present students, and rising workload and responsibility for students and teacher had been mainly affiliated to the drawbacks. The findings were similar with that of Raes (2022) which indicate that to be able to obtain more precise and generalizable findings and find out the drawbacks in participants' perspectives regarding their experiences in hybrid learning and overcome or improve them into applicable and non-detrimental components, more empirical and comprehensive research was needed.

The literature sources that have been referred to such as Raes (2022), Villareal (2015) and Sanpanich (2021) shared similarities with the results of this research. In other terms, the advantages that were mentioned by the sources cited above were mostly in accordance with the participants' perspectives such as "*convenience, flexibility, technology-oriented learning and autonomous and student-centred learning environmen*t." However, the implementation of hybrid learning fell behind the expectation due to the lack of appropriate guide and setting (classroom). Therefore, the majority of participants confronted many challenges during their hybrid learning times.

To sum up, this study aimed to investigate the perspectives of university students' (also including a university professor and a schoolteacher) regarding the hybrid learning model during the pandemic times. The findings varied but negative aspects comparably outnumbered the positive aspects. The participants made references to several reasons why they were not satisfied with the hybrid learning including unpreparedness to new model, inappropriate learning environment and necessary equipment shortage and technological illiteracy. However, they also added that if existing drawbacks were managed appropriately, the hybrid model would be promising. Overall, it can be deduced from the perspectives of students that hybrid learning proved that it provided some unique advantages rather than fully online or traditional model alone, but drawbacks they experienced in hybrid learning should also be taken into account for better and promising implementation in future.

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TEACHERS' BELIEFS AND PREFERRED APPROACHES TO ADDRESS SELF-REGULATED LEARNING DEVELOPMENT FOR THEIR STUDENTS

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ABSTRACT

The term "self-regulated learning" (SRL) has been introduced in the system of education in Latvia comparatively recently with the introduction of the new competency-based curriculum in 2016, therefore, the aim of the study is to explore teachers' understanding and beliefs of the concept of self-regulated learning. Consequently, three research questions were posed: how teachers evaluate their SRL skills, what teachers understand by "self-regulated learning" and what teachers' most commonly offered activities for developing students' self-regulated learning skills are. The study consisted of several successive stages where the initial stage was to identify teachers' understanding of SRL, surveyed at the introductory part of a year-long in-service teacher training course aimed at enhancing teachers' proficiency in developing self-regulated learning skills in their students. The answers of 119 in-service teachers of grades 7–12 from all over Latvia were analysed according to the key words used to explain the concept of SRL. The data were used for planning teacher training courses and offering the most appropriate activities for elaborating teachers' competence in developing students' SRL skills. This article summarises the first results of the study reflecting teachers' understanding of SRL. Further research results will be published in the following articles. The second part of the research analyses teachers' offered activities for developing SRL skills at the online teacher experience exchange event attended by 344 teachers and reflects the results of the survey on teachers' most commonly used activities for introducing self-regulated learning in the teaching process offered by 143 teacher professional development event attendees.

Keywords: self-regulated learning, professional development, in-service teacher training, experience exchange, teachers' beliefs, teachers' preferred approaches of SRL

INTRODUCTION

Self-regulated learning (SRL) is a broad umbrella term which includes a lot of variables that influence the learning process (Panadero, 2017) and plays an important role, as its acquisition significantly contributes to the

achievement of other goals in the learning process and further education. In Latvia the term "self-regulated learning" has been introduced in the system of education only with the introduction of the new competency-based curriculum in 2016 (Skola2030, 2019b).

Since then, SRL has been assigned a crucially important role as it is defined as one of the six transversal skills in the new curriculum (Skola2030, 2019a). Researchers have proved that SRL interventions promote students' academic achievement and learning skills (Dignath et al., 2008; Rosário et al., 2012) and students who can regulate their behaviour during the lessons are also higher achievers (Zimmerman & Cleary, 2009). All significant projects in the system of education should involve appropriate teacher training (Nikolov & Szabo, 2011) and scientists suggest that professional development opportunities for teachers on SRL would potentially benefit students, especially the ones academically at-risk (Cleary et al., 2022), therefore, a teacher professional development course was developed to raise teachers' awareness on SRL, how to implement it in their work, and how to develop those skills in their students.

As the term "self-regulated learning" has entered the system of education in Latvia relatively recently, it was important to research teachers' knowledge on SRL, thus three research questions were put forward; firstly, to determine how teachers evaluate their knowledge of SRL, secondly, to study teachers' understanding and beliefs on SRL, expressed by the teachers at the initial stage of the teacher professional development course and, finally, to analyse the main activities that teachers suggest for developing their students' SRL skills offered by the presenters and event attendees at the teacher experience exchange event. Taking into consideration these objectives, the study starts with overlooking the main theories, the information and methodological materials on SRL available to the teachers, particularly in the local contexts.

Literature Review

SRL has been broadly researched by numerous researchers around the world since the middle of the 20th century and initially was overlooked through the perspective of behaviour theory based on Skinner's (1953) theory of operant conditioning that was applied to reduce dysfunctional and teach adaptive behaviours as individuals can self-regulate their behaviour by arranging the environment that helps to produce reinforcing and punishing stimuli (Mace, Belfiore & Hutchinson, 2001). However, the behavioural methods were critiqued for the fact that self-regulation only focused on behaviour, while the motivational and metacognitive aspects were ignored, thus, the social cognitive theory developed taking into consideration the

latter two and Bandura's (1986) theory of triadic reciprocality, pointing out the interaction and reciprocal influence of personal, behavioural and social/ environmental aspects, and Barry Zimmerman's organised symposium devoted to the SRL issues at the American Educational Research Association's annual meeting in 1986 generated vast interest in SRL researchers (Schunk, Usher, 2013).

The latest SRL researches emphasise the shift of attention from covert students' attitude, where students are mainly responding reactively to the results of the learning experience, to representing personal initiative in the acquisition of knowledge and skills by improving the methods used and creating appropriate environment for learning (Zimmerman, 2015). Previous research shows that the skills to create appropriate environment are particularly important in the remote learning process caused by Covid-19 pandemic, as students are used to the learning environment arranged by teachers during the traditional face-to-face learning, therefore, teachers are advised to support students and provide SRL support interventions to help students create appropriate learning environment during the online learning process (Sarva, Linde & Daniela, 2021).

Different aspects of SRL have been researched by countless researchers, Zimmerman, Moylan, Winne, Hadwin, Boekaerts, Pintrich, Efklides, Schunk, Usher, Cleary, Panadero and many more. According to SRL theorists, students who have developed self-regulated learning skills are active participants and are able to self-regulate metacognitive, motivational and behavioural processes by applying them effectively in the learning process (Zimmerman, 1986; 1989; 2000; Zimmerman & Moylan, 2009). Although during the last few decades several SRL models by different authors have been worked out, the common features are that SRL is a cyclical multiphase process and it consists of several subprocesses (Panadero & Alonso-Tapia, 2014; Panadero, 2017).

Teachers in Latvia have been introduced with the term SRL by the project "School2030" giving the following definition of SRL "I set short-term and long-term goals for my growth, implement them and analyse the course of my thinking and actions, manage my emotions and behaviour, and learn from mistakes." (Skola2030, 2019a), therefore, pointing out cyclical phases of SRL, cognitive, metacognitive and behavioural processes, however, motivation is not directly included there. The national project "School2030" offers a methodological material in a form of a digital handbook worked out by the team of educational experts and provides information and guidelines on introducing SRL in Latvia to four target groups: a) 1st–4th graders, b) 5th–12th graders, c) parents and d) teachers on how to introduce and work with the three phases of SRL (Skola2030, 2020).

According to the above mentioned definitions, this study analyses teachers' understanding on SRL based on the following categories: a) phases of SRL, b) cognitive processes (including metacognition), c) social emotional and behavioural processes and d) motivational processes, however, it is difficult to strictly separate all categories as SRL is a complex process that consists of several components which are interrelated, as, for example, previous researches have revealed that emotional and motivational regulations in a lot of cases are closely related and similar interventions could be used to support both of them (Edisherashvili, Saks, Margus, & Leijen, 2022).

Methodology

The SRL course

As a part of a research on SRL, a year-long teacher professional development course for in-service teachers of grades 7–12 was worked out to help teachers' gain a more detailed understanding about self-regulated learning and how to develop these skills in their students. The course was advertised during the 29th Latvian Association of Teachers of English (LATE) conference in August 2021, a two-day online teacher professional development event, attended by 165 English as a Foreign language specialists from all over Latvia, and through several regional educational councils.

Initially six groups were formed, three of them based on the regional location, two of them based on the school applications and one through the LATE advertised application. Although there were more applications, 119 teachers started the course. Any subject teacher of grades 7–12 willing to participate in the course could apply by completing a short Google Form in which applicants had to provide reasons for their motivation in the participation and confirm that they had got acquainted with the course requirements, for example, attendance. Teachers were informed that they could withdraw from the course at any time, but in order to receive the teacher professional development course certificate, participants were supposed to attend all input sessions and group discussions. If teachers for any reason could not attend the input session or the discussions, they could contact the course provider and receive the Zoom link to join the other group.

The participants were from different types of schools, such as elementary and secondary schools, gymnasiums, state gymnasiums and vocational educational establishments, representing all regions of Latvia and their age varied from less than 25 to over 60 years old, thus having different professional backgrounds, and teaching all the school subjects from native language to foreign languages, science subjects, arts and physical education. Additionally to teaching school subjects, teachers also had other

responsibilities, such as being a class teacher mentioned by 13 respondents, methodological board leader by 8 respondents, vice principal by 7 respondents, principal by 1 respondent and project coordinator by 7 respondents.

The course was based on four modules and each module consisted of a 4-hour input session through the Zoom platform with an active teachers' participation, then 1.5–2 months time to implement the discussed methods and approaches in their classrooms followed by an hour-long discussion session on the Zoom platform. In the information about the course, teachers were informed that data would be collected during the course with the help of Google Forms and group discussions, which would be used only in an anonymised and summarised format for the research purposes, and teachers expressed their consent about it.

Applicants could participate in the course only on the voluntary principle, as the course also included practical work with students, implementation of the acquired knowledge in practice and a lot of self-evaluation of the teacher's own practice. At the initial stage of the first module all the teachers received a code that was used all along the course and consisted of a few letters referring to the group and the participant's individual number, providing the opportunity for data analysis. General Data Protection Regulation and ethical considerations were followed and all the data were analysed anonymously and in a summarised format.

Statistical, quantitative and qualitative data were collected by completing semi-structured questionnaires using Google Forms at several stages during the course, for example, the pre-course questionnaire at the initial stage of the course, as well as regular questionnaires during each module and at the end of them, asking teachers to self-reflect on their knowledge, skills and competences, express their opinion, and rate their applied pedagogical practice.

The questions were formulated based on the literature analysis and referred to the theoretical content discussed during each module. The link to the Google Forms was provided during each online session and the questionnaires were completed during the sessions.

This article analyses the questions that refer to teachers' knowledge and beliefs about the SRL, asked at the beginning of the first module and the other data will be analysed in the future articles. The acquired data were analysed using Excel mathematical calculations.

Experience exchange event

The second part of the data were collected from the teacher experience exchange event, organised by one of the state gymnasiums in Latvia, where participants could join the event by completing a publicly available digital application form that required them to share their email for further

communication, name, surname and education institution they represent, students' age group they work with and the school subject they teach. Applicants were also asked to provide their good practice examples on developing their students' SRL skills. They were informed that data gathered through application forms will be used in research in an anonymised and summarised format. The experience exchange event was 90 minutes long and was composed of 3 parts:

Introduction – where the information about participants and their needs was summarised and the participants were introduced with a short theoretical background of the topic and the format of the event.

Experience exchange – where 6 teachers shared examples of their practice in the classroom on developing students SRL skills during short 5–7 minutes presentations, as well as answered participants' questions.

Conclusion – where the shared practice examples of all participants were summarised and an opportunity to comment or ask additional questions was offered.

344 teachers teaching students of all age groups from primary to secondary level and various school subjects, including nature sciences, mathematics, technologies, languages, health, physical education, social sciences, culture and art, as well as, school management and support staff applied to participate in the event.

Participants mentioned two main reasons for attending the experience exchange event, firstly, gaining new ideas on how to implement self-regulated learning in their lessons and, secondly, finding suggestions on enhancing students' motivation. During the application process, 143 teachers provided the topics on which they could share their good practice examples with the colleagues on developing students' SRL skills. The data were collected using Google Forms, then anonymized and analysed by coding the keywords with numbers, depending on how many times each keyword was used, and grouped according to the phases and processes of SRL and the content provided in the previously mentioned course.

Results and discussion

Data acquired during the SRL course

At the beginning of the first module of the SRL course teachers were asked to self-evaluate and rate how good their knowledge of self-regulated learning was. Teachers ($n = 119$) rated their knowledge in a 10-point Likert scale as this is a system of evaluation well known for students and teachers in Latvia, where 1 means (very, very poor), 2 (very poor), 3 (poor), 4 (almost average), 5 (average), 6 (almost good), 7 (good), 8 (very good), 9 (excellent) and 10 (outstanding).

Fig. 1 shows that although teachers are supposed to develop students' SRL skills, their knowledge of SRL is not sufficient. Teachers self-evaluated their knowledge from 1–9 and there were no teachers who thought that their knowledge was outstanding. 12 respondents rated their knowledge from "very, very poor" to "poor", which is considered to be an unsatisfactory rating in Latvia. The greatest number of teachers or 40 respondents rated their knowledge of SRL as average, which might not be enough to use efficient methods and strategies to help students develop their SRL skills.
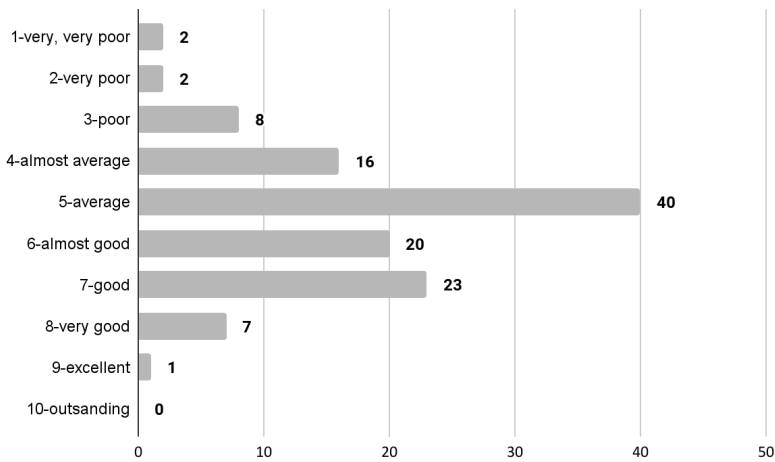
Figure 1. Teachers' self-evaluation of their knowledge of SRL

Proportionally it is depicted in Figure 2, which shows that 28% of teachers evaluate their knowledge of SRL from 1 (very, very poor) to 4 (almost average) which might be considered as insufficient in order to provide qualitative lessons and develop students' SRL skills.
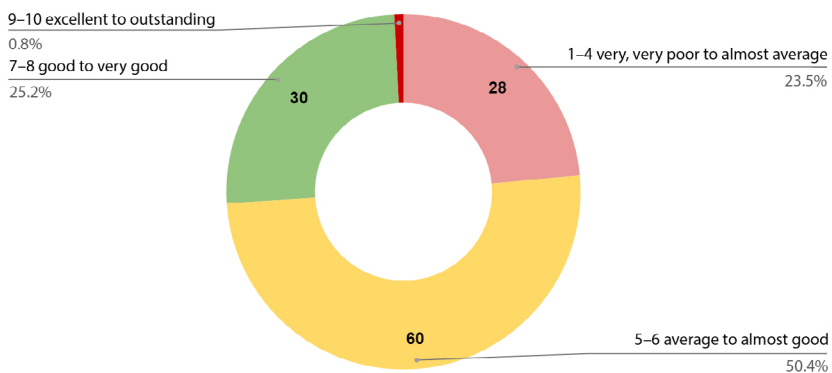
Figure 2. Teachers' self-evaluation of their knowledge of SRL (proportionally)

Half or 50% of the teachers, rate their knowledge of SRL as "average" or "almost good" which shows that those teachers have some background knowledge, however, they lack confidence about the introduction of SRL, only one fourth (25%) or 30 respondents are confident about their knowledge, but still would like to improve it, and only one teacher or 1% is sure about their knowledge.

In order to provide content analysis and identify teachers' beliefs and perceptions on SRL, an open ended question was asked to clarify what in respondents' opinion SRL was. The data were analysed by coding the keywords with numbers, counting how many times each keyword is used, grouping them according to the phases and processes of SRL (see Fig. 3) and the content provided in the course, and finally the data were visualised using Google Spreadsheets.
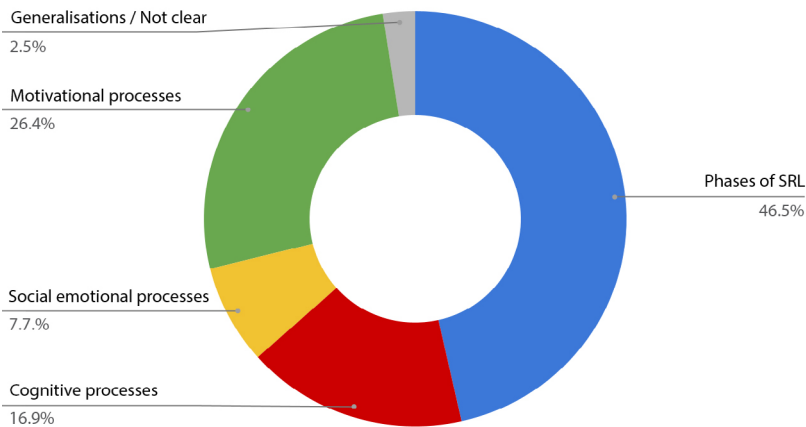
Figure 3. Keyword analysis on defining SRL according to phases and processes of SRL

Although according to the SRL theory cognitive, behavioural and motivational processes influence and intertwine with each other, the following grouping was accomplished also due to the course content of the 4 modules. Figure 3 shows that most often responses related to the phases of SRL (46,5%), followed by motivational processes (26,4%), cognitive processes (16,9%) and social emotional or behavioural processes (7,7%), but 2% of replies were very vague or teachers mentioned that they are not sure what SRL is.

Figure 4 depicts a more detailed analysis of the mentioned key words. Most often respondents mentioned subprocesses of the first two phases of SRL forethought and performance, where "monitoring and directing learning

in order to achieve a goal" was mentioned 64 times, which means by more than a half of the respondents, "goal setting and planning" – 52 times, while the subprocesses of self-reflection phase "self-evaluation and reflection" – were mentioned only 16 times. Thus, the data show that teachers' beliefs on what SRL is, are mainly associated with the subprocesses of phases of SRL and less importance is devoted to social emotional/behavioural and motivational processes.
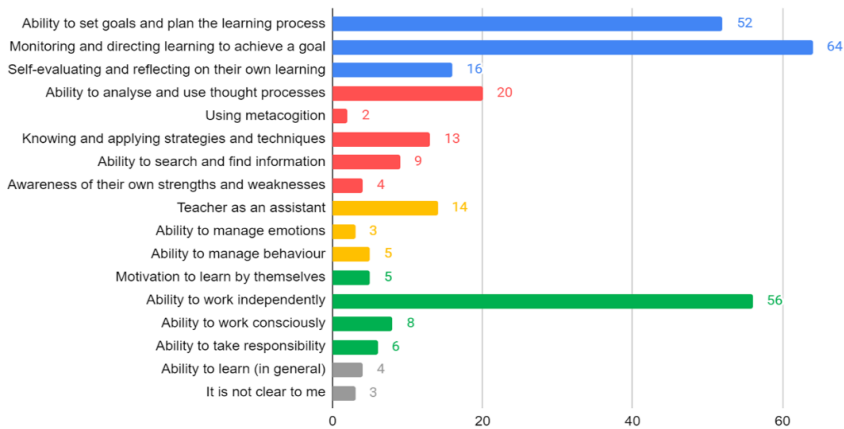
Note. Blue – phases/subprocesses of SRL, red – cognitive (metacognitive) processes, yellow – social emotional/behavioural processes, green – motivational processes, grey – generalisations/not clear.

Figure 4. Teachers' perception of SRL according to the keyword analysis

As another important indicator to define what SRL is, teachers mentioned students' "ability to work independently" which was mentioned 56 times. During the teacher professional development course the misconception was clarified that "working independently" is not synonymous to SRL and not always might mean that students possess highly developed SRL skills.

Data acquired from the teacher experience exchange event

The second part of the research analyses the data acquired from the online teacher professional experience exchange event, where six teachers from one of the gymnasiums in Latvia had prepared the 5–7 minutes long presentations on how they develop students' SRL skills (see Table 1). Five out of six presenters of the teacher experience exchange event had participated at the previously mentioned course on SRL and only the first presenter had not as she works at a primary level.

Table 1. Teachers' presentations at the teacher experience exchange event

Presenters	School subject	Topic of the presentation	SRL aspects presented
Teacher 1	Primary School	Systems for developing SRL skills	• Phases of SRL • SEL using pictogrammes • Raising students independence and responsibility • Use of ICT in the remote learning process
Teacher 2	ICT	Adjusting task requirements for developing students' SRL skills	• Phases of SRL
Teacher 3	Latvian	Project work	• Phases of SRL
Teacher 4	Mathematics	Achievable outcomes guide	• Phases of SRL – goal setting to reach achievable outcomes
Teacher 5	Career Consultant	Career planning	• Phases of SRL – needs analysis and goal setting
Teacher 6	Vice principal	Individual conversations for students' personal growth	• Student-Teacher-Parent-School systematic cooperation for students' personal growth • SEL support system

Teacher 1 (see Table 1) shared her experience on several ways how teachers could help students develop their SRL skills at the primary school level, by implementing the appropriate use of the phases of SRL, social emotional learning (SEL) by using pictogrammes, the use of ICT in the form of short videos during the remote learning process, and enhancing students' independence and responsibility through providing autonomy which is one of the main components of the self-determination theory intertwining motivation and self-regulation (Ryan & Deci, 2002).

Although Teacher 2 and Teacher 3 (see Table 1) teach different subjects – ICT and Latvian, they both elaborated on adjusting regular task requirements in order to make the tasks more interesting, involving cooperation and providing more autonomy in order to develop students' self-regulation following the phases of SRL. Although initially interest and self-regulation were viewed by scientists as separate concepts in educational, developmental and social psychology, in the last few decades scientists have proved that interest and self-regulation are closely interrelated with self-efficacy and provide a positive impact on the learning process (Hidi & Ainley, 2008) and help to maintain students' learning motivation (Cleary, 2018).

Teacher 4 (see Table 1) presented the use of checklists for reaching achievable outcomes in mathematics and Teacher 5 showed how the phases of SRL could be used in school environment and in career planning,

by working on needs analysis, goal setting and reaching the desired result. The last presenter, the vice principal, showed how the gymnasium has developed a profound system to implement SRL not only at the lesson, but at the school level in the multi-step conversations using a well worked out system and SEL support that are immensely important for developing perseverance, persistence and growth mindset (Dweck, 2009; Hochanadel & Finamore 2015).

Figure 5 depicts the good practice activities provided by 143 out of 344 online teacher experience exchange applicants. It is difficult to draw conclusions why other applicants did not provide their good practice examples, whether this was due to the fact that they feel unsure how to implement SRL in their work, or if there were any other reasons, therefore, teachers' confidence in developing students' SRL should be further researched.
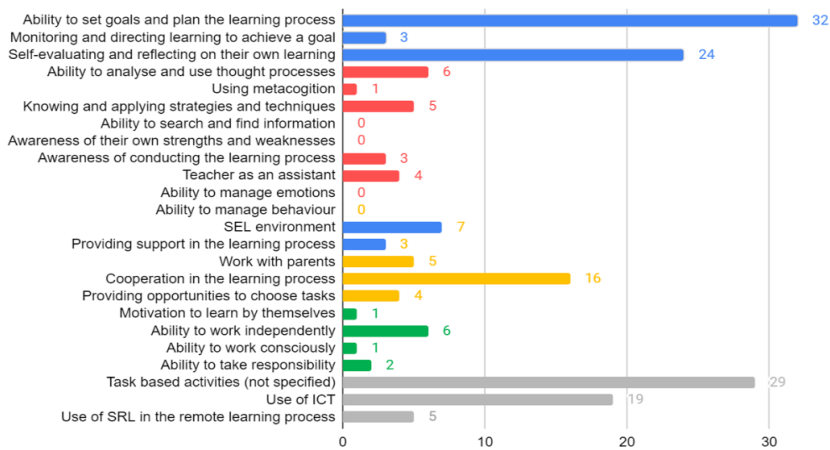
Blue – phases/subprocesses of SRL, red – cognitive processes, yellow – social emotional/behavioural processes, green – motivational processes, grey – the category not specified.

Figure 5. Educators' practice examples for implementing SRL

Figure 5 shows that most of the teachers' preferred and offered activities related to the subprocesses of the forethought phase of SRL, referring to "goal setting and planning" (32 responses), only 3 examples for the performance phase, and 24 responses on self-reflection phase. The results might suggest that although teachers understand the importance of students' SRL skills in the performance phase, as it was the highest result on teachers' perception on what SRL is (see Fig. 4), they cannot provide examples of good practice in fostering them. Next highest result or 29 responses

mentioned task based activities which were not specified, therefore, it is not possible to analyse it.

Similarly, teachers did not provide or provided to a small extent examples of good practice on such a) *cognitive processes* as "searching and finding information", "using metacognition" and "being aware of strengths and weaknesses", b) *social emotional/behavioural processes* as "ability to manage emotions" and "ability to manage behaviour", and c) *motivational processes,* such as "motivation to learn", "work consciously" and "work responsibly". These data might suggest some areas that should be further researched to gain elaborate understanding on teachers perceptions on working with cognitive, social emotional and motivational processes and ensure help to in-service teachers in Latvia by delivering professional development courses providing appropriate methodology.

Nevertheless, teachers' good practice examples show teachers' confidence in "developing students' cooperation skills" (16 responses) and providing students "opportunity to choose tasks" (4 responses), confirming that teachers are aware of how to introduce and develop students' cooperation and autonomy in the learning process. Besides that, 19 respondents mentioned that they could provide good practice examples on the "use of ICT" and 5 respondents on the "use of SRL in the remote learning process" and although ICT could be implemented in different SRL phases and processes, the data show the tendency that teaching and learning process had been influenced by the Covid-19 pandemic as the teachers are gaining confidence and offering examples of good practice on the use of ICT and SRL in the remote learning process.

Conclusions

SRL is a broad and multi-faceted term and its introduction is of great importance to any system of education in order to help students become confident and successful learners, therefore, teachers need to gain profound understanding about phases, subprocesses and processes of SRL, and probable interventions. The current research proves that not always understanding and beliefs of the concept mean that teachers have sufficient knowledge and skills in order to foster their students' SRL skills, as it was notified by educators' preferred activities. One of the reasons might be lack of sufficient in-depth methodological material on SRL and its implementation in the native language.

Since SRL, as a concept, has been introduced in the system of education in Latvia relatively recently, with the introduction of the new competency-based curriculum in 2016, educators' understanding of SRL, their beliefs and perceptions on its implementation should be further researched in order

to make scientifically based conclusions and suggestions on facilitating its successful introduction, so that teachers could professionally develop SRL skills in their students.

Therefore, several recommendations for the educational policy makers could be highlighted to provide pedagogical implications at pre-service and in-service stages. Firstly, the teacher professional development course should be provided to in-service teachers as they have not been introduced to this concept during their pre-service education. Additionally, pre-service teachers should gain a profound knowledge on SRL in order to be able to implement it in their future work. Another important point is that, teacher training should not only involve the in-depth theoretical course about SRL theory and its models, but also provide practical suggestions and implications on how teachers could perfect their students' SRL skills. Finally, further longitudinal studies should be implemented to provide research based data on the introduction of SRL in Latvia and the development of the students' SRL skills in the learning process.

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IMPLICATIONS OF STUDENT LINGUISTIC REPERTOIRES FOR TEACHING ENGLISH IN UNIVERSITY

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ABSTRACT

Despite the emphasis on the promotion of pluricultural/plurilingual skills clearly stated in the European Union (EU) policy (EC 2007, 2018), there is no evident concern for plurilingual awareness in many universities. Although studies on active multilingualism initially dealt with general education (see, e.g. European Centre of Modern Languages activities), there has been a growing research and initiatives with the focus on tertiary education system and the emphasis on methodological interventions. Since intercultural education has long been an EU priority (EC 2002), it is pertinent to address linguistic repertoires of students currently enrolled in the tertiary programmes and their implications for teaching foreign languages. Thus, the research object is linguistic repertoires of students currently studying at the University of Latvia (UL). Using language portraits as a research method with students in medicine and biotechnology in the context of English for Specific Purposes, and 3 philological programmes in the context of language studies respectively, the research aims at answering the following questions:

- How do UL students position English among other languages in their repertoire?
- Is there any difference between the positioning of English for students in different programmes?
- What are methodological implications for teaching English at the tertiary level?

The obtained data demonstrate instrumental significance of English and reveal variation in language repertoires of students in humanities and sciences as well as some minor differences among programmes. Overall, the results support the claim for addressing the so far underemployed plurilingual competence in teaching languages in university. The success of the language portrait activity as a tool to probe individual language biographies and intercultural dynamics of study groups as well as the discovered plurilingualism of the UL students suggest the necessity in modelling special tasks for raising and employing tertiary students' plurilingual awareness in a professionally meaningful manner.

Keywords: English for Specific Purposes, language portrait, linguistic repertoire, plurilingual awareness, tertiary education

Introduction

"According to the classical concept, monolingualism of a whole country or territories in a country is one of the key characteristics of a well-functioning and 'sound' nation state. [...] The use of the 'correct' language in the sense of the language of the nation [implies] solidarity with the community of all those living in the respective nation." (Gogolin, 2011: 230) Despite the one state language policy of most of the European states, "[r]arely did this way of representing uniformity actually match sociolinguistic reality, and ... there is a clear historical affinity between the standard version of the nation-state in Europe and a notorious—and often enough oppressive—monolingualism" (Kraus et al., 2021: 450). Closely linked to rampant industrialisation and growth of general formal education, monolingualism was a result of quite recent social, cultural, and ethnocentric developments (Lewis, 1977, p.22; see also Pavlenko, ed.). Although globalisation and increased migration helped multilingualism resurface in the second part of the 20th century, the ideal of a culturally homogeneous nation state has not lost its appeal for many European countries, the Baltic states including (Giordano, 2018). Language policy implementation not being the issue of this paper, it is nevertheless of note that "we are still living with linguistic wrongs" of the monolingual ideology and its products (Skutnabb-Kangas,1998:12).

Over the last decades, however, "multilingualism has been catapulted to a new world order" (The Douglas Fir Group, 2016: 19). Migration and transnationalism have changed Europe's cultural and linguistic scenery and helped the move from 'simple' to 'complex' diversity, with rich cultural configurations resulting from the interaction of historical forms of multilingualism and more recent patterns of linguistic heterogeneity (Kraus et al., 2021: 450). New exogenous layers of linguistic diversity, including "through the irruption of English as the de facto communicative vehicle of Europeanisation and global affairs" (ibid.: 453), has complemented the endogenous multilingual legacy of European countries.

The changes have affected education in general and presented multiple challenges to language education in particular, leading to the shift in perspective in all the fields concerned with additional language learning (Sembiante, 2016). The future is a multilingual one, and this realisation makes educators re-conceptualise language learning (Paris & Alim, 2017), acknowledge diverse linguistic and cultural skills of their students, and take up a "translanguaging stance" (García, 2017), with translanguaging being "an approach centered not on languages, but on the communicative practices of [multi]linguals" (Tsokalidou & Skourtou, 2020: 223). Multilingual speakers possess complex linguistic repertoires, which help quickly adapt to diverse sociolinguistic situations (Sembiante, 2016: 46) and

as such "should be envisaged and employed as a resource so as to facilitate learning and support pluriliterate development" (Meyer et al., 2018, as cited in Dafouz & Smit, 2022: 30). Making space for students to use all their linguistic resources opens "a myriad of learning opportunities" and "better enables us to teach complex content, which in turn helps students learn more successfully" (García et al., 2017: 196). However, despite a body of existing research substantiating numerous educational advantages of translanguaging (see, e. g., Tsokalidou & Skourtou, 2020: 222; Vyshnevska et al., 2021: 8, for detail), studies have revealed "that going against the grain of monolingualism and mono-culturalism is a great challenge for all" (Tsokalidou & Skourtou, 2020: 219) and the myth of the detrimental effect of using students' home languages when learning English is still prevalent (Sembiante, 2016: 48).

Although "[the] strength of English in education can go against multilingualism in some contexts", the development of bilingualism in national and regional languages has often been due to English added to the curriculum (Cenoz & Gorter, 2020: 301). The dynamic interrelationship of English and multilingualism being outside of the scope of the present paper, the role of English in higher education (HE) is difficult to overestimate. It is noteworthy however that "despite the increasing linguistic and cultural diversification of the university population, a monolingual English-only perspective has tended to prevail, both in institutional policies as well as in research into [English-medium education] programmes" (Dafouz & Smit, 2022: 30). The same attitude is traced in language teaching methodologies used in HE.

Applied since the end of the 19th century, the monolingual approach either radically minimises the use of students' mother tongues in the classroom as in direct or communicative language teaching or totally bans it through immersion. Presenting an effective alternative to the grammar translation method and rote memorisation, the approach was "proclaimed as incontestable and having irrefutable value in ESP teaching for most post-Soviet universities" (Vyshnevska et al., 2021: 2) and gradually turned into the most widely accepted one. However, the approach imposes the "ideal native speaker" as the ultimate model for learners and promotes the ideology of native speakerism favouring 'native-speaker' teachers and leading to political inequalities in English language teaching. Seen as a divisive force and in view of the changed HE, both ideals became hotly contested in the 21st century (Holliday, 2006).

The multilingual turn was so impactful that in the Companion Volume (CoE, 2020) of the Common European Framework of Reference for Languages (CEFR) – the arguably most influential international standard for describing language ability – changes were proposed to certain descriptors

referring to linguistic accommodation by "native speakers" (CoE, 2020: 24). With the vision of the learner as a social agent in the action-oriented approach, the profoundly modified aim of language education is no longer to achieve "mastery" of one or several isolated languages. "Instead, the aim is to develop a linguistic repertory, in which all linguistic abilities have a place" (CoE, 2020: 127). Distinguishing between multilingualism (the coexistence of different languages at the social or individual level) and plurilingualism (the dynamic and developing linguistic repertoire of an individual user/learner), the complete set of extended CEFR descriptors describe plurilingual/pluricultural competence as "a single, interrelated, repertoire that [plurilinguals] combine with their general competences and various strategies in order to accomplish tasks" (CoE, 2020: 30).

In line with the above, there have been implemented multiple initiatives, mostly at school[1] but in HE too[2]. The existing research testifies that in addition to complex learning needs, students bring a multiplied cognitive, experiential, cultural and linguistic diversity into classrooms, the diversity which may be also treated as a resource. For example, in the previous study by the authors of this paper (Bicjutko, Beļicka 2021), even partial avoidance of the English-native language(s) dichotomy in an ESP course resulted in learners' confidence boost and heightened linguistic sensitivity as well as proved conducive for mastering both specialised terminology and linguistic creativity.

One of the prerequisites for cultural interaction and promotion of plurilingualism is the creation of safe pedagogical space that can promote identity sense-making and cross-cultural exchange (Zaidi et al., 2016), with identity text as an educational strategy for its promotion (Cummins & Early, 2011). In turn, studies revealed that translanguaging is useful and efficient when pedagogical activities are designed thoroughly (Vyshnevska et al., 2021: 8), and one of the keys to support linguistically diverse international classrooms across subject-specific areas is to map specific learning contexts and to identify the different language repertoires at work (Dafouz & Smit, 2022: 41). Then, in the context of teaching English at university, the first step may be to examine students' linguistic repertoire. Thus, **the goal of this research** is to examine the perceptions of University of Latvia (UL) students concerning their multilingual repertoires with the aim of answering **the question:** what is the place of English in UL student linguistic repertoires?

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[1]   Language Friendly School Project at https://www.rutufoundation.org/language-friendly-school/ is a case in point.

[2]   See, e. g., the activities of EU University Alliances, *Sustainable Multilingualism* at http://uki.vdu.lt/sm/index.php/sm, the special issue of the journal Sustainability "Sustainable Multilingualism in Higher Education", etc.

Methodology

The research presented here belongs to a qualitative research paradigm and the analysis carried out involves a combination of theme-based multimodal and content analysis. The chosen tool is language portrait (Wolf, 2014; Busch, 2018), which is a widely known multimodal language awareness activity to assist language users to represent and reflect on their language experiences as well as to research heteroglossic practices (Coffey, 2015; Lau, 2016; Prasad, 2014). As qualitative research is fundamentally interpretative, the interpretation aims at representing the heterogeneity of responses through the prism of authors' personal and theoretical understanding.

Language portrait is a visual method "disrupting" traditional ways of thinking and talking about languages through enabling a person to see their experiences of languages "as a complex configuration of emotional impressions felt in the body" (Coffey, 2015: 504; also Busch, 2012: 19; Bristowe et al. 2014: 230). Easy to implement and conducive to classroom discussion, the language portrait activity is similar to identity text in creating identity-safe spaces and bringing languages of the community that may have never been addressed in learning (Cummins & Early, 2011). Promoting cultural exchanges, such safe pedagogical spaces are shown to improve student performance at school and help in developing professional identities in global health professions education (Zaidi et al., 2016).

Procedure

Before the activity, all students were informed and by completing and submitting the task agreed that their linguistic portraits would be anonymously and in an aggregated manner used in the research. They also agreed to sign their work for methodological purposes.

Participants were asked to think about their linguistic repertoire, i. e., all languages present in their lives, and, using multiple colours, to map them in the body-shape drawing (see the handout with shape and instruction in Appendix 1). It is of note, however, that obtained images may differ from real linguistic repertoires as any representation is affected by social discourses (Busch, 2012: 9). Still, they are valuable as culture-specific conceptualisations of embodied experience of language use and language learning comprise both "the internal perspective of the experiencing subject-body and the external perspective of the linguistically constituted object-body, the approach ultimately support[ing] a reflection of one's own linguistic repertoire" (Busch, 2018: 11). Since the aim of the present study was twofold, and that was to examine the linguistic repertoire of UL students as well as to heighten their plurilinguistic awareness, the activity consisted of

two steps, with the second one leading to pair and group discussion (see Appendix 1).

To aggregate and process the pictorial representations, certain generalisations had to be made, which mainly concerned reducing the marked body parts to more comprehensive categories. Thus, parts of the head (like forehead, mouth or chin) were interpreted as the head, parts of the trunk (be it shoulders or stomach) as the trunk, etc. Due to its significant metaphorical position, the only exception was made for the heart. There were many cases when students had mapped the same language on several parts of the body. In those cases, the total number of mentions and not of portraits was counted. The students were not instructed which side represented the right/left side of the body. For the analysis, it was assumed that the side with the raised arm was the right one. Finally, the Excel data analysis tool was applied to process the results across all the portraits students had produced.

Research Sample

The language repertoire was studied based on the language portraits drawn by 128 students of the University of Latvia, of them

- 89 students from the 1st year of the Professional Bachelor's Study Programme of Medicine, 1st year
- 22 1st year students of the Bachelor's Study Programme of Biotechnology and Bioengineering, 1st year
- 10 ERASMUS students and 4 students of the Bachelor's Programme of French Philology taking the course of English Grammar I, mixed years, starting from year 2
- 22 1st year students of the Bachelor's Study Programme of European Languages and Business, 1st year.

Results

Predictably, the pictorial depictions provided diverse data for analysis. As the number of the collected portraits did not allow for correlation analysis across the above-mentioned study programmes or for claiming statistically significant patterns in all the programmes, the calculation was done manually to provide for the initial estimate.

To obtain a better representation of the **number of languages** per student, the data is presented in ranges. The results show that most students (89%) had referred to 5–6 languages in their repertoires, with the rest of students referring to 3–4 languages and no student admitting their monolingualism. The mean in the medical programme was 5.6, in biotechnology – 5.4, ERASMUS + French philology – 6.5, English philology – 5.8. So, the high

numbers lead to belief that the students use several languages on a daily basis.

The **placement of the English language** is almost equally divided between the head marked by 24.3% of participants and the right arm marked by 23.8% of participants respectively. The heart appeared in only 4% of the portraits. For the medical students, English features most on the right arm (25.4%) and head (20.2%), followed by the trunk (15.5%) and right leg (11.2%), and hardly ever on the heart. In biotechnology, the head features in the top position (26.3%), followed by the trunk and right arm (13.6% each). Among the students of English philology, the head position prevails (36.4%), followed by both arms, namely, the left arm with 22.7%, and the right arm with 20.4% respectively). In ERASMUS + French philology, the right arm dominated with 27.8%, followed by the trunk (16.7%) and left leg (16.7%). The head position was mentioned in just 11.1% of the cases. Curiously, both for the programme of medicine and the mixed group of ERASMUS and French Philology, the right arm is a prevalent location for English despite the difference in average number of languages and programme orientation.

To spare the students from revealing sensitive data, they were not asked to state which language was their native one, and that is the reason not to assess the positions of the native language but to analyse **the placement of Latvian**, which is the state language, instead and compare it with English positioning. Thus, concerning the place of the Latvian language, the trunk comes first with 19.6%, the head ranks second with 16.8%, and the heart ranks third with 15.4%. The students of medicine placed Latvian on the trunk in 21.4% of all cases, in the head in 20.6%, and in the heart in 19.1% respectively. English philology students ranked the positions of Latvian as follows: 19.6% – the right arm, 17.7% – the head, 15.7% – the trunk, followed by the heart with 13.7%. In Biotechnology – 20.7% trunk or throughout the body.

Concerning the **colouring of the portraits**, no distribution across the study programmes will be presented here due to the heterogeneity of responses, no insistence on the use of colours in the instruction and occasionally limited access to colours. Still, a few traceable trends could be observed. Thus, for English, 28.6% of the participants selected blue, and 5.8% chose to picture the British flag instead. Although the participants were not asked to state their native language as mentioned above, nevertheless, approximately a half of all students had chosen to indicate it. Keeping in mind that Latvian might represent the native, the second or a foreign language, the variation makes it hard to account for colours. However, out of 109 mentions of colours, 28.4% had chosen Latvian to be red, 15.4% had picked the green colour (*Latvia is a green place, nature is*

green, but also – *a natural* (native) *language*), followed by 11.1% pink and 10.1% with a flag. Among other choices, there was also purple 2.8%. Due to the limited colour availability, it could be suggested that the idea behind all these choices is similar.

Discussion

The study reveals the prevailing multilingualism of UL students, with the results for students of sciences going beyond the stereotype of their linguistic backwardness. The difference between the students in English and French philology points at the domineering and limiting nature of English as a lingua franca. Overall, the activity proved to be useful in raising awareness of one's linguistic repertoire (not proficiency), "extend[ing] narrowly mentalist and functional conceptions of language competence [and] encourag[ing] participants to reflect on the affective relationship with different languages" (Coffey, 2015: 312). Although each portrait is unique, there are some discernible patterns like those observed in the previous research (e. g. Busch, 2018; Coffey, 2020).

Thus, in the collected language portraits, the structuring according to the parts of the body mostly refers to common metaphors, that is, the head as the place of reason, the heart denoting affect, the legs (and especially feet) for roots and support, and the hands symbolic of activity and social involvement with no particular difference between the left and the right one. However, there were students, who placed the better-known languages higher in the body. The size matters, with large and small surfaces for important and less important respectively. Most drawings show lines compartmentalising languages, and, therefore, four portraits acknowledging the fluidity of plurilingualism with floods and spills of colours are a welcome sign of the shift in the thinking paradigm. Among the iconic elements, national flags and/or their colours are used frequently, but the choice of colours themselves is mostly a matter of personal preferences, and as such might be revealed through the interpretation of the author.

With only a couple of cases of English in the heart, the location of this language points to no affect, and, predictably, it is the head for the students in English philology, linking it to cognitive strength and control. For science students, English carries more of instrumental significance, which is shown through its mapping on hands/legs. Although the data on colours is not fully reliable as a whole due to the limited access to colouring writing utensils, the colour blue for English is closely associated with the EU flag and may potentially hint at internationalisation. The chosen colour and comments such as *intelligent*, *possibilities*, *openness*, *I dream in*, *calm*, point to the important role of the language as a locus of power. Further description

of the English language as *a safety belt, all media intake, foundation, BrE-mouth, AmE – underwear, together with LV has taken me far, it's as a T-shirt without which you can't go out, I use it all the time when I do not have to use Latvian* requires no further interpretation.

As stated above, the question of native language was not raised in the task to avoid bias or unnecessary discrimination. Nevertheless, most of the respondents addressed this issue commenting on their choice of the respective body part, and, though rarely, of the colour(s). Thus, with 49% explicitly mentioning their native language, there are other cases, where it was implicitly suggested (e. g., *the core of me*; *from Smiltene, Vidzeme region*, etc.). The observable trend for Latvian is to place it in the heart and to choose red, purple, or pink for colouring. The straightforward association is with the country flag, though there may be another interpretation such as *dark-red blood in my veins*. The choice of red was explained as *the colour of warmth, the place where I grew up, I adore this language – my friends are Latvian*. Further, several students of medicine, although indicated that their native language is Russian, still referred to the emotional significance of Latvian in their lives – *it took me far even if I did not notice it, very important to express my emotions and my ideas, Latvian is my second skin* (vs Russian as the first one), *Latvian is the language of my country*. Supposedly, there might be an emotional attachment among non-Latvian mother tongue students too. Besides, as one Russian mother tongue student mentioned, the native language is in the trunk and the rest is built around it (the core-periphery metaphor). In this case the trunk, to a certain extent, might serve as an outgrowth of the heart. Also, there were several students from mixed families, who indicated both Latvian and Russian to be their native languages and did not separate them, mapping a green or white area for both languages together. As the same colour choice might represent diverse emotions, e. g., blue for Latvian was one case explained *as the air I breathe* and in a different case – *the saddest colour, to me Latvian sounds cold and unpleasant, it is the language I think in,* a further study is required for more comprehensive results.

Overall, what transpires from the analysis is the affective nature of language, and language policies and ideology as impactful of identity. Despite multiple benefits mentioned in the beginning of the discussion, the intensity and difficulty of the language portrait analysis is a serious impediment for using it in research. However, as a pedagogical activity language portrait is a promising ice breaker, promoter of discussion, as well as a means of profiling and mapping linguistic context in the classroom.

Learnings and implications for future practice

The activity of drawing the language portraits was conducted to raise the students' awareness about the languages they are aware of and use in their daily lives, however it turned out to be relevant beyond that.

- **language portrait not only an activity but a useful probing tool**

It allows not only to identify the languages the students possess in their repertoire, but also to understand their linguistic biographies and, to some extent, the emotional state and intercultural dynamics of the groups at hand. As a result of opening up emotionally, a rapport is created that facilitates further collaboration.

- **necessity in modelling special tasks for raising plurilingual awareness**

The activity suggests that students are very much engaged in the activity that lets them explore their own linguistic potential and identity. Moreover, the task can be completed individually and in groups. In the former case, the follow-up task with students explaining their portraits to their peers is paramount and particularly engaging if students talk to each other for the first time. Once the awareness has been raised, it is relevant that it is brought to action through professionally meaningful tasks.

- **introducing crosslinguistic activities to university English courses adds meaningful creativity**

Observations suggest that the students were very involved in painting and discussing their language portraits and were particularly happy to work with pencils in different colours, some of them stating that this reminded them of their childhood. Teaching ESP in university lacks creativity as testified by the students' general interest in the activity and request for similar activities. The received view is 'to teach serious matters seriously', the approach grounded in the beliefs about academic education and the ways of its acquisition as well as in the scarcity of the academic hours. Similar to Dafouz & Smit (2022), we believe that with evolving modalities of education, "consideration of the impact of several languages on the learning needs of our students and the teaching formats used need to take a much wider approach" (ibid., 41).

- **academic engagement through support of multilingual practices and identity affirmation**

The cognitive and linguistic processes involved in the language portrait activity are similar to identity texts, and, therefore, the creation of this multimodal representation is also an enabling sociological process, "a vehicle whereby students can repudiate negative stereotypes and simultaneously construct identities of competence that fuel academic engagement." (Cummins et al., 2015: 559). In turn, the start might lead to the adaptation of a pluriliteracies approach going beyond the stale EFL/EAP models. All

such practices should not be approached spontaneously as they require thoughtful design and piloting to adapt. One way may be the development of multilingual online databases and other digital tools allowing for the development of students' disciplinary literacies. As there is a continued diversification of students' language and cultural background in academia, there is a definite need (also voiced by the students themselves) in plurilingual activities in general and in teaching English in particular.

To sum up, the findings of this study suggest that providing pedagogical space using language portrait is a useful pedagogical strategy to raise plurilingual/linguistic awareness as well as to support cross-cultural education, nevertheless, its long-term impact on language learning requires further research.

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Appendix 1

Step 1.

> *Colour your language portrait using the figure on the left.*
> *Think about* **all** *the languages and dialects you speak, understand, recognise, learn, or would like to learn. Mind that your linguistic repertoire is much bigger than 2 or 3 languages. … The only question is where all these items are situated/placed in your linguistic repertoire.*
> *For each language or dialect, choose a different colour and body part and map it on the figure.*

Step 2.

> *Divide into pairs. Explain to your partner why you chose the colours you did and why you placed them the way you did.*

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AN IDEOLOGIZED AND A REALISTIC DISCOURSE ABOUT RURAL LATVIAN TEACHERS DURING THE STALINIST PERIOD: ANALYSIS OF THE CONTENT OF THE NEWSPAPER "SKOLOTĀJU AVĪZE" AND THE MEMOIRS OF ANDREJS DRIPE

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ABSTRACT

This paper examines an ideologically idealised and a realistic discourse about rural Latvian teachers during the late 1940s and early 1950s, as represented, respectively, in the newspaper *Skolotāju Avīze* (*The Teachers' Newspaper*), and in the memoirs of the former teacher and writer Andrejs Dripe. Dripe's memoirs date back to the 1990s, when diaries written by him after WWII were published. The texts are analyzed with the discourse-historical approach, with the aim and result being the identification of discourse among and about rural teachers. The newspaper *Skolotāju Avīze* was established to create a discourse about the global excellence of Soviet teacher which, nonetheless, did include positive and negative evaluation. The basis of this judgement was the extent to which teachers did or did not include themselves in the Soviet educational system and in the processes of Sovietisation. Dripe also divided teachers into positive and negative categories in a discursive manner. His point of view, however, emerges from his and his family's success in living and surviving in the Soviet system. The evidence suggests that discourse about teachers in such publications as *Skolotāju Avīze* and Dripe' memoirs cannot be identified or analysed without the contextual foundations of history, in this case the Stalinist period in Latvia.

Keywords: rural teachers, Stalinism, Soviet Latvia, Sovietisation, Soviet press, Soviet education system, discourse-historical approach

Introduction

The history of the teaching profession is among the most important topics in the scientific study of education, making it possible to comprehend the role of schools, the history of knowledge and that of educated people, as well as the dynamics of these components of society. Latvian historical

writing to date has not yielded much information about these subjects during the period of Soviet occupation, particularly from the viewpoints of social history and media history.

There did exist several studies in the Soviet era which praised Soviet society and its educational system (e. g., Builis, 1977; Cimermanis & Podnieks, 1985, Vīksna, 1986). Research in recent years has shown, however, that the history of education and its components during the Soviet period was much more complicated than was once thought (see Krūze & Vugule, 2010). Schoolroom practices and the social status of a schoolteacher had long-lasting influence and did not disappear immediately or during the first years after the collapse of the Soviet Union. To a greater or lesser extent, their influence can still be felt today (see Ķestere & Krūze, 2013). Within the newer literature on the history of pedagogy, I would like to emphasise several studies that have focused specifically on schools in Soviet Latvia. Bleiere (2013) analysed the post-WWII Sovietisation of general education. A very important contribution was the research done by Saleniece (2003a; 2003b) and Kopeloviča and Žukovs (2004) on the teaching profession and the training of teachers in Soviet Latvia. Also important is the work done by Kestere and Kalke (2018) on the visual presentation of teachers in Soviet textbooks, in the periodical press and photographs. Kestere, Stonkuviene and Rubene (2020) have written about the utopian constructs of the Soviet "new person" in textbooks. Rubene, Daniela and Medne (2019) have studied how the bodies and minds of left-handed children were disciplined with the use of Soviet-era pedagogical tools. Studies of another important element of the era – the extent to which schoolchildren resisted the Soviet occupation – found that that young people fervently upheld the idea of the restoration of Latvia's independence (Strods, 2001).

This paper analyses the representation of rural teachers in the newspaper *Skolotāju Avīze* (*The Teachers' Newspaper*; 1948–1991), which first began to appear during the Stalinist period. After the restoration of Latvia's independence, the memoirs of the schoolteacher Andrejs Dripe (1929–2013) were published in the 1990s. The purpose of the paper is to discover and analyse the dominant discourses about rural teachers during the Stalinist period, using both sets of texts. The research questions are these: what discourses were constructed about rural teachers in *Skolotāju Avīze* and by Dripe, what these two texts have in common, and how they differ.

Methodology

Two sources were chosen to conduct the present study. The first is the weekly newspaper *Skolotāju Avīze*, which was published by the Soviet Latvian Ministry of Education and the Committee of the Latvian Republic's

Education, University and Scholarly Institution Labour Union. The first edition of the paper was published on January 1, 1948, and it continued to be published throughout the entire period of Soviet occupation. The readership of this newspaper was made up of workers in the field of education. It served as an organisational and educational tool for the field, and as such laid out clearly the nature of the activities and value systems required of Soviet-era pedagogical workers. *Skolotāju Avīze* had a distinct ideological mission focused on the Sovietisation of the Latvian educational system. The articles that have been analysed in this research involve editorials as well as articles specifically featuring schools in the countryside. There were two or three such articles in each issue of *Skolotāju Avīze*, and these are analysed in the present research.

The second source for this paper is a series of memoirs published by Andrejs Dripe in 1993 and 1994 with the title *Bez skaistas maskas* (Without a Beautiful Mask). These volumes were based on diaries the author had kept in earlier years. Dripe was a very popular author in Latvia from the 1960s to the 1980s, and his novels were usually based on the lives of young people and the problems that they had in the process of growing up. In the published memoirs after the restoration of Latvia's independence, Dripe wrote about the period of WWII and the post-war years. The 3rd volume was subtitled *Skolotāja darba gadi* (The Years of Working as a Teacher) and contained Dripe's description of his first jobs at rural schools in the late 1940s and early 1950s. The books were very outspoken, and they allowed one to track the everyday lives and work of Soviet teachers in rural areas. Dripe's classes were focused on training schoolteachers at a time when there were great shortages of teachers for Soviet Latvian schools. High school graduates were admitted to the programme. In 1950, Dripe and his wife, Zigrīda began work at a seven-year school in Atašiene in the Krustpils District. One year later they had relocated as teachers to the Spaliņi Elementary School in the village of Palsmane in the Smiltene District. In 1953, Dripe was a teacher at the seven-year Ķempi school in the same village (Bērsons, 1976, 110).

The texts discussed in the present study are based on the discourse-historical approach (DHA), which requires comment on three fundamental concepts, namely, critique, ideology, and power. These are necessary components of a critical approach to the texts in order to uncover how they embody the ideology of the regime. An important role for DHA is to understand the socio-political and historical context of the way in which the texts were created. Another useful analytical instrument is the identification of discursive strategies. This helps to find coded discourses in the texts and their linguistic realisations. The author has relied on the work of Reisigl and Wodak (2009), who have spelled out the necessary steps for

revealing the ideological content of discourses as embodied in written texts. The proposed strategy involves nomination, predication, argumentation, perspectivisation and intensification/mitigation. The identification and description of these strategies helps to analyse both sets of texts and enables a discourse comparison between the *Skolotāju Avīze* and Dripe's account of what was involved in teaching in the Latvian countryside.

Results

Context

Soviet rule was re-established in Latvia in 1944/1945 as WWII came to an end. Occupation policies involved an all-encompassing implementation of Sovietisation. The term 'Sovietization' describes a process during which the occupied country's ideology, governance, economics, culture, and everyday life are integrated into or rendered similar to the model of the Soviet Union (Bleiere, 2018, 593).

Historians emphasise several elements in the post-war situation in Latvia. First, the cadre of teachers was replaced. Some Latvian teachers joined the flow of refugees who left Latvia and travelled westward because they feared the re-introduction of the Communist regime as the end of the war approached. People with many years of education and high social standing represented a substantial proportion of all Latvian refugees (Plakans, 2021, 31–40). In the autumn of 1944, the number of schoolteachers had dropped by more than 30% in Vidzeme and Kurzeme, in comparison to the 1940/1941 school year (Bērziņa, 1977, 39–40). Soviet Latvian schools fired teachers who might not prove loyal to the regime, and preference was given to those who had been educated in the Soviet Union. There was a great shortage of teachers, particularly outside of the capital city of Riga. In 1946, the training of elementary school teachers began at various high schools. Teachers for the 5th to the 7th grade were taught at teachers' institutes which accepted students who had completed their elementary education. Several special institutions of higher learning were established on the foundations of several of such institutes in the 1950s. (Krūze & Zigmunde, 2013, 115–117; Saleniece, 2003, 197–199).

The post-war years involved children who had been poorly educated in an inferior educational system, and had experienced such material problems as a lack of footwear, apparel and food among those who did attend school. Soviet Latvian schools mostly used textbooks from the USSR, translated from the Russian language. Latvian language and literature textbooks were written by people who were loyal to the Soviet regime. Even so, there continued to be shortages of textbooks in the first post-war years, and schools also were short of paper and writing implements.

The functioning of schools began to stabilise in the late 1940s, and that is when the mandatory seven-year education requirement was put into place (Bērziņa, 1977, 38–51).

In Soviet Latvia, schools established Young Pioneer and Komsomol units and actively encouraged children to join them, while teachers were similarly urged to join the Communist Party. By the late 1940s, there were Komsomol organisations in all high schools and most seven-year schools. During the 1944/1945 school year, there were 1,508 Komsomol members in Soviet Latvian schools, while during the 1952/1953 school year, there were 23,833, which represented 39% of the young people who were of Komsomol age (Bondarevs, 1987, 216). At the close of the 1944/1945 school year, 179 schools had Young Pioneer units with 30,313 members. By the early 1950s, most students were involved. During the 1954/1955 school year, an average of 61.5% of all children of the appropriate age were Pioneers, while in some schools the percentage neared 95%. Each school had a Pioneer director, and these people were trained in programs using the priorities of the Education Ministry (Špona, 1972, 107–112; Bleiere, 2013, 118). The Sovietisation policy saw schools as places where Soviet ideology could be inculcated, and the Soviet lifestyle could thus become an instrument that could be actively put to use.

The work of schools was also impacted by Soviet repressions. These generated a permanent atmosphere of fear and disorganised classroom work. Mass deportations on March 25, 1949, involved more than 44,000 people in Latvia. Structural analysis of the deportees conducted on the basis of documents in the Latvian National Archive, unfortunately, does not cover all of those who were involved in the 1949 deportation action, but there is evidence to show that 26.1% of those who were deported were children up to the age of 16. Surveys and reports from special settlement points show the names of 224 teachers (Āboliņa et al., 2007, 200). These data, however, are incomplete, because not all deportees filled out the necessary documents. The biographies of teachers were examined strictly by the Soviet regime lest they contain such compromising facts as active employment in the pre-WWII educational system. "Teachers needed to become loyal instruments of Soviet school policies," argues Saleniece (2003a, 306).

School-age pupils were nonetheless among those who during the postwar era were most actively involved in opposition to the Soviet regime. Strods (2001, 661–666) has written that this national movement involved two branches: (1) active avoidance, which meant refusal to be involved in social and after-school activities and refusal to join the Young Pioneers and Komsomol organisations; and (2) membership in groups manifesting active resistance. The aim of the resistance movement was the restoration of an independent and democratic Latvia.

Repressions against teachers and students, as well as the ideologization of educational processes and curricula, were the primary instruments of the Sovietisation of the school system in Latvia. The newspaper *Skolotāju Avīze* was part of this process. Dripe's memoirs, in turn, offer a closer look at how rural schools were Sovietised from the perspective of a young schoolteacher.

Discursive strategies

This section of the paper looks at texts from *Skolotāju Avīze* as well as the discursive strategies that could be identified in Dripe's memoirs.

The **nomination discursive strategy** is used to identify social actors, objects, events, processes, and actions. At the centre of the present study is the conceptualization of a teacher as a social actor. In the Soviet regime, the work of teachers was not limited to the transfer of knowledge and the rearing of children. Teachers were expected to help in the Sovietisation of society. *Skolotāju Avīze* insisted that "the teacher is the primary figure at school" ([S. n.], 1948b, 1). The newspaper had less to say about the teacher as the explicator of a specific subject area, and attributed greater importance to other roles which he or she was expected to play. A teacher was depicted, instrumentally, as a leader of a class, a principal of the school, and a leader of the Young Pioneers, as well as an organiser of various interest groups focused on nature, technology, tourism or sports. Teachers were also expected to work as 'agitators' (activists) and propagandists. The definition of the role of teachers, in other words, expanded beyond the boundaries of the school as such. The Soviet press discussed teachers in a discursive way as Soviet employees who were involved in local community life and took part in the ideological and organisational work of the Soviet system.

The nomination of rural teachers for these expanded roles in 1948 and early 1949 was the same as for teachers in cities. After the mass deportation on March 25, 1949, and the rapid approach of agricultural collectivisation, teachers became defined as people who facilitated the establishment of kolkhozes (collective farms). This role for them was clearly defined in an essay that was written for *Skolotāju Avīze* by the secretary of the Soviet Latvian Communist Party's Central Committee, Arvīds Pelše (1949, 1–2).

In his memoirs, Dripe, too, describes himself in instrumental ways. He was a teacher of certain subjects, a form-master (Latvian: *klases audzinātājs*), and an 'agitator.' Later he was an education supervisor. Describing everyday events at school, Dripe defined his colleagues on the basis of their instrumental roles – principal, education director, Young Pioneer leader, etc. In writing about the work of schools, Dripe emphasised the individuality of some of his colleagues, because individual characteristics had a key influence on the work of the school as a whole and on the relationships among teachers.

This allowed Dripe (1994, 24–25) to describe some colleagues at his rural school as "a chronic drunk," "a sad guy," "a chatterbox," and a "person for whom things stick to his fingers" (i. e., a petty thief). Dripe also wrote that the profession of a teacher in the countryside meant being as close as possible to the Sovietisation. People who thought that the regime was good and "tooted its horn" were described by Dripe (1994, 41) as "idiotic or blind servants of the regime."

The **predication discursive strategy** is used to define the discursive qualifications of social actors. *Skolotāju Avīze* used a black-and-white discursive representation of teachers, dividing them among positive and negative social actors. Teachers and principals who successfully handled ideological issues as well as their duties as principals, subject teachers or form-masters were positive actors. Also viewed positively were teachers who sought improvements in their political qualifications, who prepared for lessons, and who struggled to improve the performance of unsuccessful pupils and of those who were often absent from class or had quit school entirely. Other positive role models were teachers who assisted children in joining the Young Pioneers or the Komsomol. The newspaper regularly praised specific schools at which teachers were doing everything that the regime expected them to do.

Skolotāju Avīze did not hesitate at citing specific teachers by name. This served to highlight the correct way for teachers to behave, and also allowed teachers to receive praise for becoming involved in the Soviet education system and doing all the things that were expected of them. One article in the paper noted that 500 teachers in Riga and its surrounding areas had successfully passed tests at the Institute to Raise Qualifications. Several teachers from the countryside and small towns were noted in particular. *Skolotāju Avīze* reported that these teachers "understood their need to continue growing so as to successfully rear new builders of Communism" ([S. n.], 1950, 3). Similar lists of good teachers were also published in other issues of the newspaper. It is clear that this usage underlined the granting of an indulgence by the Soviet system. The regime had accepted such teachers as people who were loyal toward it. Praise in the periodical press could also facilitate the individual career development of teachers in Soviet Latvian schools.

It was true, however, that *Skolotāju Avīze* also published examples of negative work by schools and teachers. There were denunciations of principals, teachers, and form-masters. Sometimes entire articles were devoted to a single miscreant. The principal of a seven-year schools in Vidriži, Pēteris Strods, for example, was presented as a man who had been fired because he was a poor principal and teacher whose work was described as being harmful to Soviet youth (Kalns, 1948, 6). Negative descriptions

in the newspaper applied to teachers who were insufficiently dedicated to ideological work, whose pupils were very unsuccessful, who did not prepare appropriately for lessons, or who taught classes poorly.

In his memoirs, Dripe usually presented black-and-white portraits of teachers. He explained that the book was based on diaries that he wrote as a young man, noting that people in that age group tend to be categorical in their judgments (Dripe, 1994, 55). Dripe wrote positively about his work and that of his wife and of other colleagues. This assessment was based on lessons that had been taught well, as well as on artistic events in which students were involved, namely, theatrical performances and concerts by student bands or choirs. Negative characterisations were applied to teachers who did poor work, could not adequately explain classroom subjects, were quarrelsome, or engaged in petty arguments or intrigues. Dripe also admitted that teachers drank a great deal and often taught classes while drunk. In discussing the March 8 Women's Day celebrations at the school in Atašiene, Dripe (1994, 44) noted that the school was shut down for several days because teachers were just too drunk to do their work. Dripe did not particularly denounce drinking, writing instead that this was a normal social phenomenon of the period. Drunkedness was an everyday occurrence, even though it did make harder the lives of people at the school and the whole village.

The **argumentation discursive strategy** serves to justify and question claims of truth and normative correctness. The very first issue of *Skolotāju Avīze* argued that the Soviet system had the most favourable circumstances for the work of teachers, which meant that the regime could make serious demands of people who did that work: "No teacher in Latvia has stood in front of such a responsible and noble rearing job as is the case right now," the paper stated. "Never have teachers been able to work on behalf of the nation. This high level of consciousness and the great trust possessed by the people must inspire us to do major and successful work in rearing our nation" ([S. n.], 1948a, 1). The newspaper added that the profession of a teacher was much more important and respected in the Soviet system than had been the case in the "bourgeois" Latvian state. The special status that was granted to teachers by the regime justified the assignment to them of their basic tasks.

This norm-based superiority of Soviet teachers also involved volunteer work in 'agitating' for the Soviet system, the inculcation of Russian language skills, increased teaching of the Russian language to schoolchildren, as well as handling other similar tasks assigned by the regime. Russian language lessons and the popularisation of Russian culture were inalienable parts of Sovietisation, and were therefore part of the job of 'positive' teachers. As *Skolotāju Avīze* put it: "Teachers must do major work to broadly involve

the Russian language in extracurricular activities and everyday life. They must teach Russian songs, write letters, publish newsletters in Russian, read extensively in Russian literature, newspapers, and other periodicals in Russian [..], write business documents in Russian, speak to and meet more often with students from Russian schools, organise friendship evenings, etc., etc." ([S. n.], 1948c, 1). Among the public duties of countryside teachers was the creation of partnerships with local kolkhozes. This could involve the presentation of ideological lectures, organisation of amateur concerts, help with crop harvesting, supervision of the work of children at collective farms, and work with parents to convince them to send their children to school and to accept the legitimacy of the Soviet system.

Material considerations were involved in the justification of the special status of Soviet teachers. On April 2, 1948, the Soviet Latvian Council of Ministers approved Decision No 364 on the benefits and privileges of rural teachers. These were based on similar measures promulgated at the all-Soviet level. Directors of local institutions were instructed to provide teachers with free apartments, to cover heating and lighting costs, and to ensure the provision of hay. On February 2, 1949, the Council of Ministers approved another decision on the construction of housing for teachers in the countryside. *Skolotāju Avīze* insisted that such measures meant that the Soviet regime truly cared for people in this profession, and added that the decisions were indeed being carried out. District-level local governments that violated these directives were chastised.). By awarding material advantages, the regime sought to deal with teacher shortages in the countryside.

Dripe's memoirs suggested that the material support for Soviet teachers was effective. He recalled that he himself enrolled in a pedagogical class so that he would avoid mandatory military service and received the subsidy that was given to young teachers. The sum was 4,000 roubles, and that was enough money for Dripe to support his family. Equally important was housing. Dripe's first job was at the seven-year school in Atašiene, and he was given a room in a recently built wooden house, painted yellow. The house had previously been occupied by a teacher who had been deported to Siberia in a repressive act by the government (Dripe, 1994, 12). Dripe wrote several times about a shortage of promised firewood, which the school, despite instructions from the Council of Ministers, failed to provide. Sometimes Dripe and his wife had to steal wood from the nearby forest to keep at least some modicum of warmth in their apartment (Dripe, 1994, 35).

Dripe read *Skolotāju Avīze* and was bitterly ironic about the tasks the paper sought to assign to teachers and the criticism was levelled against teachers who were declared to be 'negative.' He wrote about teachers he knew who were put on the list of 'negative' teachers because they ignored pointless instructions from above. They refused, for instance, to give

unearned grades to students just to maintain the required grade point average. Writing about the work of teachers in the countryside, Dripe (1994, 68) described "enormous work loads after classes, trembling before inspectors each time that a failing grade was given to a pupil, the obligation to lie to people via various lectures and political classes, knowing that people knew the real truth and yawned while you were talking – is that not idiotic?" He (1994, 68) added that Soviet teachers reminded him of "hunted and trapped animals that always tremble about their tomorrow." Dripe's own motivation for continuing his job as a teacher lay in the pride he had about what he could teach to his students, but also in the fact that the state provided him with material support.

The **perspectivisation discursive strategy** speaks to the framing or positioning of the speaker's point of view. *Skolotāju Avīze* was a typical Soviet newspaper, and it functioned on the basis of principles used by all media in the USSR. The paper was owned by the state and it appeared in line with the formula prescribed by the first leader of the Bolsheviks, Lenin. The paper had to be a "collective organiser, collective agitator and collective propagandist," and in that fashion expounding the world view dictated by the regime. The media were used as instruments to bring about the social changes the regime required (Schramm, 1963, 116). *Skolotāju Avīze* presented the voice of the regime to its readership, issued commands and instructions, monitored their implementation, and designated schools and teachers as positive and negative social actors.

Dripe's memoirs presented his views about the early phases of his employment in the Soviet Latvian school system. At the conclusion of each chapter, Dripe offered commentary about how he now viewed what he had written in the earlier diary. He (1994, 57) admitted that the entries involved a great deal of subjectivity and observed that young people are maximalists and put forward categorical evaluations. The authenticity of his story is strengthened by photographs which the author took in the 1940s and 1950s. Dripe's memoirs make it possible to understand the great difference between the real work of rural schoolteachers and the depiction of that work in *Skolotāju Avīze*.

The **intensification and/or mitigation discursive strategy** is used to modify the epistemic meaning of propositions. It has to be said that this strategy is not used in the representation of rural teachers in *Skolotāju Avīze* or in Dripe's memoirs. Soviet newspapers intensified their discourse with directives and an instructive language style, both of which were mandatory. The language of the articles was completely businesslike, without any decorative elements that might have suggested a double meaning or uncertainty in a message. A decorative or artistic style of writing was totally unacceptable during the Stalinist period. *Skolotāju Avīze* made it perfectly

clear that the Soviet school system was the only place they could work as teachers, and that they therefore had to take into account everything that was written in the newspaper.

Dripe's memoir clearly showed its basic honesty. The author noted that he wrote the book when he was older than 60 years of age, and that was an appropriate age to remember how he "tripped through life" (Dripe, 1993a, 5). In the early 1990s, he felt a sense of disappointment about the fact that the Latvian state and society were not what he had hoped for earlier, when struggling for the country's independence. Writing his memoir allowed Dripe to flee from the tensions and political and social contradictions of the 1990s. He noted that the diary that he wrote as a young man was not polished, and that is why the book was titled "Without a Beautiful Mask." The simple language in the diary, the conversational style of the 1940s and the slang that was used at the time testify to the truth of his account.

Discussion and conclusions

The discourse-historical approach in analysing *Skolotāju Avīze* and Dripe's memoirs makes it possible to identify the primary discourses in the representation of rural teachers in both publications. It is true that the two discourses are quite different (see Figure 1 and 2).

Field of Action: Weekly «*Skolotāju Avīze*»

Genres: Editorials, Publications of Speeches, Feature, Informative Articles, etc.

Discourse 1: Soviet Teacher – the Best Teacher in the Word

Discourse 2: Positive Teacher

Discourse 2a: Supporter of Soviet Power
Discourse 2b: Performer of All the Duties of a Teacher
Discourse Discourse 2c: Distributor of the Russian Language
Discouse 2d: Provider of Students Success
Discourse 2e: Soviet Agitator and Activist
Discourse 2f: Object of Soviet State Care

Discourse 3: Negative Teacher

Discourse 3a: Disloyal to the Soviets
Discourse 3b: Bad Teacher
Discourse 3c: Education Worker in Republic of Latvia and during Nazi occupation

Figure 1. Discourses of rural teacher in "Skolotāju Avīze"
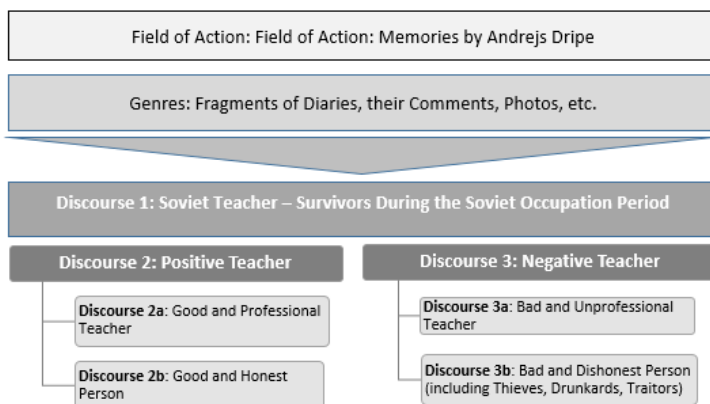
Figure 2. Discourses of rural teacher in Dripe's memoirs

Skolotāju Avīze always presented rural teachers as part of the Soviet teaching profession that, in official discourse, offered the best work opportunities and the most clearly defined status in the world. This discursive framework made it possible for the regime to place certain demands on teachers. *Skolotāju Avīze* divided teachers by reference to positive and negative traits. There were three sub-discourses in the description of negative teachers. The first concerned doubt and spoke of the lack of clarity about the possibility that the teacher might not be loyal toward the Soviet Union. The second used claims that negatively described teachers who did their work badly. They did not teach well, and they did not do things which the Soviet regime required. Such teachers did not raise children and young people to become Communists. The negative discourse about teachers often included their work in the education sector during the pre-war period of Latvia's independence or during the WWII Nazi occupation years. Such 'standards' frightened teachers and caused timidity. Negative descriptions of teachers often meant that they were fired from their jobs.

As noted earlier, discourse of a positive nature tended to be more frequent than its negative counterpart. Positive teachers who those whom the newspaper held up as models for others, with other teachers being urged to compare themselves to their 'positive' colleagues. A positive discourse about teachers had several distinct sub-discourses. The positive models were presented as being unquestionably loyal to the Soviet system, which meant that they participated in establishing and sustaining it. Teaching children in accordance with Soviet pedagogical requirements meant that positive teachers were shaping others to become part of Soviet society and helping to build Communism. Positive teachers also were faithful to Stalin as a national leader and to his policies. The next sub-discourse concerned

a teacher's pedagogical duties. This meant that everyday work for teachers was in line with the requirements of the regime. Teachers were expected to ideologize their students. Regular preoccupation with such activities shaped another sub-discourse about positive teachers – they were to be Soviet public activists and 'agitators.' There were two more sub-discourses that related directly to the teacher's work. One concerned teachers who popularised the Russian language and culture. Teachers were also expected to ensure success among their students. Many unsuccessful students threatened the teacher, who might well find himself or herself on the list of 'negative' teachers. Another sub-discourse was related to the claim that the Soviet regime was particularly concerned with the welfare of rural teachers. Free apartments, firewood, electricity, and hay were all presented in *Skolotāju Avīze* as self-evident component of the outstanding social status of teachers in the Soviet state. It was not discussed, however, as a way of dealing with a shortage of teachers.

The overall discourse about rural teachers in Dripe's memoirs can be divided into the representation of positive and negative teachers. In his eyes, positive teachers were the ones who truly worked with their students, gave grades that correlated with the student's knowledge, and tried to organise extracurricular activities that would help students to develop their personalities. This included art and sports. Dripe understood that teachers had to obey the dictates of the Soviet system, including work as 'agitators,' service on election commissions, and delivery of ideological lectures. Dripe discursively and positively wrote about those who did the work successfully. Dripe's discursive depiction of positive teachers included their ability to yield before the Soviet system and to live and survive within it.

The negative discourse about fellow teachers concerned those colleagues who made it more difficult for Dripe to live and survive under the Soviet occupation. It was important for him to protect his own life and that of his family, as he sought to ensure for them as many benefits as the system allowed. Dripe clearly presented himself as a conformist, and in order to survive, he had to choose a life that fit in with the Stalinist form.

Historical context is important to identify and understand the discourses about rural teachers that appeared in *Skolotāju Avīze* and Dripe's memoirs. The periodical press during the Stalinist period could not be understood read without contextualisation, because without context the press reports were simply disinformation about schools, the education system and teaching profession of the time. An understanding of the historical context is thus an obligatory pre-requisite to the analysis of discursive representation of these topics in both the Soviet press and in the memoirs of participants.

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THE UNDERSTANDING OF ACADEMIC INTEGRITY IN PRIMARY SCHOOLS

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ABSTRACT

Integrity has always been projected as a positive value. Academic integrity is one of the key aspects of the teaching/learning process, which is connected to the principles of ethics in addition to being genuine, honest and reliable. This is the basis for sustainable knowledge as well as a prerequisite for success. The study has been developed with the aim of assessing the understanding of learners and teachers in relation to academic integrity and exploring types of academic dishonesty and the factors affecting it during the primary education stage in Latvia. The study has explored concepts of academic integrity, dishonesty in theoretical literature and binding normative documents in Latvia, as well as the factors influencing them, and the correlation with ages and character features, and forms of academic dishonesty have been discussed. The type of research design is a case study, so the results of the study are not generalizable. The empirical part is based on the survey; the participants were teachers working in the primary education stage (157) and 345 students of Grades 4–9. The results obtained show that students and teachers do not have a shared understanding about the concept of academic integrity and its importance because no common guidelines have been developed for promoting academic integrity. The data also reveal that one quarter of teachers and more than half of the surveyed students have never encountered the issue of academic integrity in their experience. The main types of academic dishonesty mentioned are verbal communication, looking at someone else's work; the main reasons noted are the lack of knowledge and skills, not enough time spent for preparing for a test and desire to obtain a good mark.

Keywords: academic dishonesty, academic integrity, pedagogical process in primary school, students, teachers, values, virtues.

Introduction

Integrity as an ethical category is a valued quality in any time and place. Integrity involves behaviour which complies with the moral norms. Integrity has always been a topical issue in the educational environment; however, at present the educational space of Latvia lacks a common, profound understanding of the concept "academic integrity". Terms such as

cribbing, copying off, cheating, plagiarism, etc., sound more understandable and are more well known. The issues related to the policy of academic integrity and its understanding at the national level are also mainly discussed in the context of higher education. Yet, undeniably, these issues have been topical at all levels of education and in the most diverse educational institutions (Drinan & Gallant, 2009) since the beginning of the formal education approach (Arnold et al., 2007).

The problem of academic dishonesty as the opposite to academic integrity has become especially relevant during the remote teaching/learning process which began on 12 March 2020, when the emergency situation was announced in Latvia, which resulted in the organization of the teaching/learning process on-line (Regulations on amendments of instructions of CM No. 103 of March 12, 2020 "On announcing the emergency situation", 2020)). This problem has not disappeared with the restart of the in-person pedagogical process. In order to maintain maximum academic integrity, teachers prepare several versions of tests and envisage creative tasks so that assessments are as objective as possible (Rozenberga, 2020).

The issue of academic integrity has been also raised in the Guidelines of Education Development in Latvia 2021–2027, "Future skills for the future society", which state that during this period it is planned "to strengthen keeping to the principles of academic integrity in higher education, continuing to educate all the involved parties and to develop the resources of shared use" (Latvijas Vēstnesis [The Official Publisher of the Republic of Latvia], 2021, 124). This fact proves that the issue of academic integrity has been raised at the national level; however, there are still different uncertainties and questions as to why this topic is raised only in the context of higher education although the beginnings of such behaviour can already be seen at the preschool and primary education stages.

The issues of academic integrity need to be actualized in the context of elementary and primary education, connecting this with the characteristics of children's age groups, as well as the new competence approach to the teaching/learning content "Skola2030" [School2030] and the virtues incorporated in it – responsibility, diligence, honesty, temperance and fairness (Skola2030, 2018). The aims of the present study are to discover the understanding of learners and teachers in relation to academic integrity, as well as to explore and analyse the most typical forms of academic dishonesty and the factors affecting it during the primary education stage in Latvia. The research question of the study is: "What is teachers' and students' understanding of academic integrity, the ways in which it manifests and the factors affecting it in primary education?"

Methodology

The study has been performed to find out students' and teachers' understanding of academic integrity, the ways in which academic dishonesty manifests and the factors affecting it during the primary education stage in Latvia, as well as to find answers to the questions raised about the problem: "Why is it necessary to raise issues related to academic integrity during the primary education stage?" and "What is teachers' and students' understanding of academic integrity, the ways in which it manifests and the factors affecting it in primary education?".

The type of research design is a case study, so the results of the study are not generalizable. Based on methods applied in the study, this study is considered non-experimental because in the empirical part of the study no impact is exerted on the respondents – the teachers and students (Geske & Grīnfelds, 2006; Geske & Grīnfelds, 2020).

The survey was chosen according to the aim and research questions of the study, and the intention was to explore students' and teachers' understanding of academic integrity, as well as the ways in which academic dishonesty manifests and the factors affecting it. The results obtained can improve the educational aspect of the teaching/learning process, in addition to the development of students' ethical and moral values in basic education.

A questionnaire was chosen as the survey method. Questionnaires were designed for teachers working in Grades 1–9 and students of Grades 4–9. The data were collected using the Google platform "Google forms" during the period from August 2021 until October 2021. The survey was completed on a voluntary basis. The questionnaires were filled in by 35 teachers working in Grades 1–3, 36 teachers working in Grades 4–6, and 86 teachers working in Grades 7–9, as well as 180 students from Grades 4–6 and 165 students from Grades 7–9.

In order to summarize the statements obtained about the understanding of academic integrity in primary education, the data processing software programme IBM SPSS Statistics 22, the independent samples T test and Excel 2013 Office 365 were used.

Results

The concept "academic integrity" has several definitions in the educational sphere of Latvia, while academic dishonesty is comparatively less discussed. The explanations for these concepts incorporate a common understanding of their importance, but some insignificant contextual differences can be observed because each of them is adjusted to the needs of the concrete cultural environment or the institution.

When exploring the available definitions in the context of this study, academic integrity is considered one of the key values of the teaching/ learning process, which is connected to principles of ethics as well as being genuine, honest and reliable. This is the basis for sustainable knowledge as well as a prerequisite for being successful (Riga Technical University, 2019; Mārtinsone et al., 2016; Regulations on academic integrity at the University of Latvia, 2021). Therefore, academic dishonesty as the opposite of academic integrity is considered a dishonest and unethical action towards oneself and others which results in depriving of the possibility of learning, improving skills and receiving education that accurately reflects academic achievement (Riga Technical University, 2020; Blau & Eshet-Alkalai, 2017).

Educational institutions in Latvia are able to develop their own internal regulations that do not contradict the Satversme of the Republic of Latvia, and can freely choose if these regulations will also include issues of academic integrity policy at school. Due to this reason, no precise information is available as to how many schools in Latvia have incorporated the sequence of activities, which define the action to be taken in cases of the violation of academic integrity in their internal regulations. Article 54 of the law on education defines that the learner's duty is to keep to the internal regulations of the educational institution. Thus, the educational institution is responsible for how its internal academic culture is formed (Law on education 1998).

Academic integrity is also closely connected with character and moral education, because one of the goals of character education is to develop personal values and virtues for sustainable participation in the globalized world, as well as to promote the free development of a virtuous character (Harrison et al., 2016).

The importance and topicality of character education and moral upbringing in the context of education in Latvia is substantiated by the fact that these issues have been raised in the Guidelines of Education Development (Latvijas Vēstnesis [The Official Publisher of the Republic of Latvia], 2021, 124), in the project "Competence-based approach in the teaching/learning content" (Skola2030, 2018), and the regulations of the Cabinet of Ministers No. 480, approved on 15 July 2016, "Guidelines on learners' upbringing and the procedure of evaluating the information, teaching/learning materials, tools and teaching/learning and educational methods" (Latvijas Vēstnesis [The Official Publisher of the Republic of Latvia], 2016, 141), which define 12 virtues that must be cultivated in learners – responsibility, diligence, courage, honesty, wisdom, sincerity, empathy, temperance, self-possession, solidarity, fairness and tolerance.

In order to achieve the educational goals of the teaching/learning content set by the country, values and virtues are incorporated as one of

the three threads, along with the teaching/learning domains and transversal skills. Children and young people learn the values not only within the family or society, but also in the educational institution. Therefore, schools and teachers can help students to develop habits rooted in values, as well as form and consolidate them by creating the appropriate conditions (Skola2030, 2019).

The results of the studies prove that schools which are based on values set high goals and show considerably higher success in the academic, professional and social field. As the body of the school's moral norms, principles and ideals is defined by the display of the collective character of all the staff of the educational institution, then it is important that every member of the school's community understands the nature of character to its core and is able to reflect it in the ways of thinking, attitudes and actions of the school (The Jubilee Centre for Character and Virtues, 2017).

In relation to the issue under study, it is important to note students' age characteristics that could influence the understanding of academic integrity, as well as the ways in which it manifests and the factors affecting it.

The educational institution during the youngest school age (6–11 years) is a new environment and the student's authority is a teacher who, while employing different activities, has to hold the student's attention (Rayner et al., 2005). It is essential that the teacher as an authority is also the example of academic integrity. Equally important for learners is the formation of relations with peers that can affect whether a child under the influence of others will start violating academic integrity (John & Robins, 2021; Lessard & Juvonen, 2018). At this age, the child develops the skills of problem solving and motivation. This is the time when the student has to form the opinion that academic dishonesty is not a solution, but avoidance of the problem and depends on motivation (Kalvāns, 2018; Pintrich & Schunk, 1996).

During adolescence and youth (11–16 years), in turn, the characteristic cognitive, psychosocial and emotional development explicitly shows how the individual has grown during the previous stages. This period is characterized by the beginning of puberty, which affects the student's physical well-being and self-regulation of emotions (Sanders, 2013). Special attention should be paid to who is the student's authority and with whom he/she develops relationships. Self-esteem consolidates at this age, so the teacher plays an essential role in promoting the student's personality growth and self-respect (Brown & Larson, 2009; Coleman, 2011). With the increase in the volume of information and cognitive load at this age, an academically dishonest action could be advanced. Mechanical memory dominates in adolescents, so logic and the development of intentional memorization and reproduction are of great importance, because when memorizing in such a way, one can look

for interconnections among elements of information. Therefore, different strategies for systematizing the information and common requirements are important in the teaching/learning process (Latvijas Vēstnesis [The Official Publisher of the Republic of Latvia], 2018; Schneider, 2010).

Different types of the manifestation of academically dishonest actions are well known among school and university students. They have been used in different periods for a long time and have been prevalent at all levels of education (Davis et al., 1992). When summarizing these methods, they could be divided into four main groups: assistance from other people, bodies and the surrounding environment, technologies and other methods. However, it should be mentioned that the rapid development of technologies has substantially increased the possibilities for learners' academically dishonest actions. The use of technologies in cases of academically dishonest action has become especially topical during the remote teaching/learning process (Lederman, 2020; Newton, 2020). It is increasingly difficult for teachers to establish cases of academically dishonest action, which results in the received assessment not being objective (Bilen & Matros, 2020).

The academically dishonest action takes away the possibility from the learner to master what the teacher, who has prepared concrete learning content to be acquired or exercises and tasks, has intended. Based on the information available in theoretical literature, it is possible to state that regular cheating and academically dishonest action deceive that part of society which considers that the marks and diplomas received confirm a definite level of students' knowledge, skills and achievements (Davis et al., 1992).

Due to these reasons, the authors of this study consider that it is necessary to analyse the normative documents of Latvia to ascertain whether they comprise issues related to academic integrity only in the context of higher education or if there are some definite regulations and recommendations that also refer to the stages of preschool, elementary, primary and secondary education.

Several documents that actualize and enumerate manifestations and motives, as well as the possible consequences of academically dishonest actions and recommendations for preventive activities, are available regarding Latvia.

The Guidelines of Education Development in Latvia 2021–2027, "Future skills for the future society", raise several important aspects:
- strengthening the observance of principles of academic integrity in higher education;
- the importance of the observance of principles of academic integrity for ensuring the quality and confidence of education, as well as for recognizing qualifications in Latvia and internationally;

- the necessity for establishing a system of academic integrity and information that would incorporate both the specification of legislation and consolidation and development of technological solutions for improving the quality of students' work (Latvijas Vēstnesis [The Official Publisher of the Republic of Latvia], 2021, 124).

The authors also conclude that in this document academic integrity is viewed in the context of higher education, but in terms of content it is more important because it reflects the topicality of academic integrity and its relationship with the European education space, as well as more precisely defining and actualizing the shortcomings of this issue and discussing necessary improvements in the education system of Latvia.

The target audience of the "General guidelines of academic integrity" developed in the Erasmus+ project is not only students, but the whole academic community (Riga Technical University, 2020).

The authors of the study conclude that a proportion of these guidelines are generalized, but they deserve a positive assessment as they give examples of characteristics and are appropriate for application to a country, as well as indicating the necessary adjustments for satisfying the needs of different study and research fields. However, these profoundly elaborated materials do not mention even once any other stage other than higher education. The only thread that links it with another stage of education is the term "academic person", explained in the dictionary of concepts pertaining to academic integrity (Riga Technical University, 2020), which urges the reader to think that it refers to both the preschool and elementary school teacher and any other teacher or person who is engaged in educational and/or research activities.

In the question for teachers "Have you in your professional work encountered the concept 'academic integrity?'" 114 (72.6%) of 157 respondents 114 gave the "yes" answer and 43% (25.5%) "No" (see Figure 1). The authors of the study consider the fact that ¼ of teachers in their previous experience have not encountered the concept of academic integrity despite being in the academic sector and representing an educational institution surprising.

The teachers participating in the survey mentioned "verbal communication" as the most frequent way of manifesting academic dishonesty in the group of Grades 1–3 (42.9% selected "often" and 20% "very often"). As the second most common method in the same age group, teachers indicated "looking into somebody else's work" (54.3% "often", 5.7% "very often"). In addition, 91.4% of respondents mentioned in their answers that in their pedagogical experience with Grades 1–3, they have never observed cases when students send/ask test questions to someone who is not in the classroom.

Have you in your professional work encountered the concept
'academic integrity'?
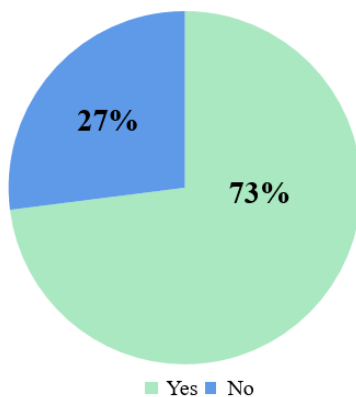
Figure 1. Teachers' responses

The most frequent method for academic dishonesty in the group of Grades 4–6 mentioned was verbal communication (50% selected "often", and 16.7% "very often"). Teachers noted looking into someone else's work as the second most common way (44.4% "often" and 16.7% "very often"). Of the surveyed teachers who work in this age group, 77.8% of respondents mentioned in their answers that in their pedagogical experience they have not observed cases where students use a recording that they have prepared in advance and listen to it using headphones.

Teachers working with Grades 7–9 noted looking into the work of another person (58.1% have chosen "often" and 15% "very often") as the most frequent way of manifesting academic dishonesty.

Summarizing the answers given by all 157 respondents about all age groups, the most frequently noted academic dishonesty activities during the primary education stage were "looking into someone else's work" (54.1% "often" and 12.7% "very often") and "verbal communication" (42.7% "often" and 17.2% "very often").

Of the surveyed respondents, 36 or 22.6% answered that the educational institution they represent have developed documents for cases of academic integrity being violated, while 40 or 25.5% gave a negative answer. The majority of teachers (81 or 51.6%) are not informed as to whether their educational institution has such rules. The results prove that approximately ½ of the surveyed teachers are not aware of the existence of such documents.

Through further analysis of the data, it was clarified whether and what type of any connection existed between the questions "Has your educational institution developed documents for cases of academic integrity being violated?" and "To your mind, does the educational institution need

a common procedure that defines the sequence of actions in cases of academic integrity being violated?" To discover the link, the authors included answers from respondents who had given only "Yes" and "No" to the question about whether there are such regulations in the educational institution. The outcomes reveal that such a connection exists and that teachers consider that such regulations or documents are needed. The independent samples T test was applied and the results obtained, Sig. (2-tailed) = 0.002 < 0.05, mean that the connection is statistically significant. The dictionary of academic integrity terms explains the concept of academic integrity, which notes that it is a consistent system of values, which serves as a guideline for decision making and performing actions (Riga Technical University, 2020). Thus, the information included in the explanation of this concept has to be taken into account in the educational institutions of all levels in Latvia when developing the education policy of the school and the system of internal values, as well as the assessment procedure.

The most important factor affecting academic integrity mentioned in respondents' answers, was "insufficiently timely preparation", which was indicated by 142 respondents or 90.4%. In turn, the least influential one mentioned by 101 or 64.3% of teachers is "peers' opinion".

The authors of the study wanted to find out whether the argument derived from the analysed scientific literature, relating to the fact that as the learner matured the risks of manifesting academic dishonesty increased, would be confirmed in the results obtained in the survey. When the results were transformed into numbers and visualized, the data confirm that the older the group of learners, the more frequently observed the manifestations of academic dishonesty (see Figure 2).
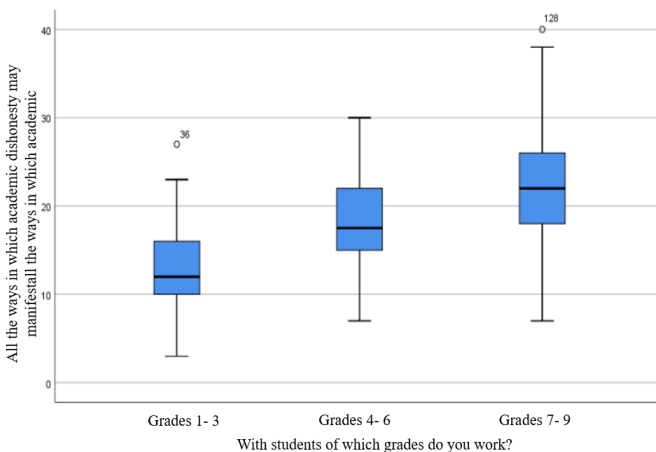
Figure 2. Increase in academic dishonesty

In their answers about who should promote academic integrity, teachers stated that it should be class and subject teachers, as well as school administration and the education policy in the country, in addition to society in general and parents. The teachers' answers emphasize that this is a topical issue on the national level.

In response to the question "In which of the indicated age groups, in your mind, does the violation of academic integrity become topical?", 107 teachers (68.2%) stated that it becomes relevant in Grades 7–9, 33 (21%) in Grades 4–6 and 9 (5.7%) in Grades 1–3.

The results of the students' survey representing Grades 4–6 and Grades 7–9 of the primary education stage in different educational institutions in Latvia.

The question "Have you ever encountered the term "academic integrity?" found that 26 (14.9%) students in Grades 4–6 gave the answer "Yes" and 148 (85.1%) "No". In turn, in Grades 7–9, 25 (15.2%) have encountered the concept "academic integrity", and the answer "no" was given by 140 (84.8%) respondents. The obtained data prove that this issue is little actualized at schools (see Figure 3).
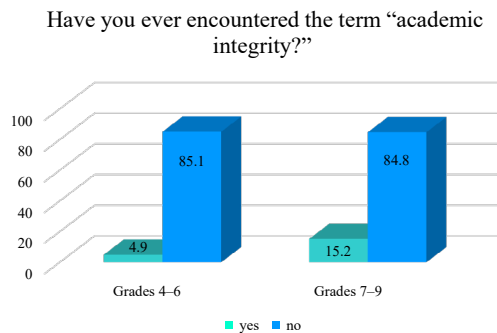
Figure 3. Students' responses

To summarize the answers to the question about which of the mentioned violations is the most appropriate for the definition of academic dishonesty, students in Grades 4–6 indicated "asking the test question to somebody who is not in the classroom" and "leaving the classroom in order to crib", noted by 91% and 88% of the respondents, respectively. According to them, the most inappropriate for this age group were "verbal communication" and "non-verbal communication", indicated, respectively, by 38% and 41% of the surveyed respondents. In turn, students of Grades 7–9 mentioned "the work is done by someone else instead of the student" and "using the crib" as the most appropriate manifestations of academic dishonesty, as chosen by 49.7% and 46.7% students. Students of this age group described "verbal

communication" (27.3%) and "non-verbal communication" (23.6%) as the least appropriate.

When answering the question "Do teachers at school act similarly if the student violates academic integrity?", 37 (20.7%) students of Grades 4–6 gave a positive answer "Yes", 49 (27.4%) stated "No" and 93 (52%) answered "I am not informed". Seventeen students (10.3%) of Grades 7–9, in turn, responded "Yes", 64 (38.8%) selected "No" and 84 (50.9%) respondents were not informed about it.

The question "Does the educational institution need a procedure which defines the sequence of actions in cases of violating academic integrity?" was answered as follows: 79 (44.9%) students of Grades 4–6 considered that it is necessary, while 15 (8.5%) responded "No" and 82 (46.6%) respondents indicated that they have not thought about it. In Grades 7–9, 52 (31,5%) students stated "Yes", 39 (23.9%) "No" and 74 (44.9%) had not thought about it (see Figure 4).

Does the school need a procedure which defines the sequence of actions in cases of violating academic integrity? (%)
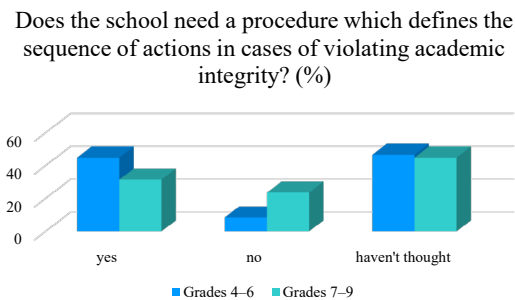
Figure 4. Students' responses

In response to the question "How often, to pass the assessment, do you act dishonestly?" 105 students of Grades 4–6 (58.7%) indicated that they have never done so. In turn, 57 (31.8%) students maintained that they act dishonestly approximately once a month, 11 (6.1%) approximately once a week, and six (3.4%) answered that they regularly do so (every time there is an assessment). In Grades 7–9, 63 (38.4%) respondents answered that they had never acted like that. However, 72 (43.9%) students claimed that they act dishonestly approximately once a month, 22 (13.3%) approximately once a week, and seven (4.3%) answered that they regularly do so (every time there is an assessment).

The authors of the study wanted to clarify the factors affecting academic integrity (character features, lack of knowledge and skills, insufficiently timely preparation, motivation, peers' opinion, that the set priority is the received assessment and not the knowledge and skills, values in the family).

The most significant factor in Grades 4–6 was "insufficiently timely preparation", mentioned by 115 (63.9%) respondents (see Figure 5).

The least influencing one in this age group was "character features", indicated by 80 (44.5%) students (see Figure 6). The most significant factor in Grades 7–9 was "insufficiently timely preparation", noted by 114 (72.6%) respondents. The lack of knowledge and skills as an equally influencing factor was mentioned by 112 (70%) students (see Figure 5). The two least important factors mentioned by students were "values in the family" by 84 (54.2%) students and "character features" by 87 (55%) students (see Figure 6).

The most significant factors affecting academic integrity (%)
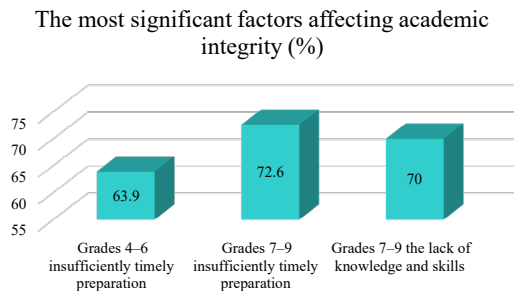
Figure 5. Students' responses about the most significant factors

The least influencing factors affecting academic integrity (%)
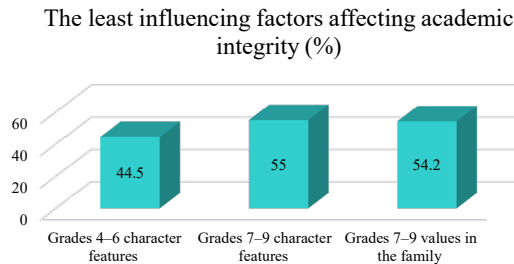
Figure 6. Students' responses about the least influencing factors

Discussion

The analysis of the teachers' and students' survey pointed to some serious problems and challenges not only in school practices, but also in teacher education. The adult acting as an example is one of the most important means of pedagogical activity. If, according to the survey data, ¼ of respondents (teachers) have not encountered the concept "academic

integrity" in their professional work, then they are not able to promote its understanding in students. Thus, the issue of academic integrity should receive more attention in the education process of future teachers. It is important to educate future teachers and acquaint them during their studies with the professional norms of teacher's ethics so that when starting work the new teacher can act accordingly and meaningfully promote the understanding of honest actions in learners.

It is necessary at the national level to establish a common code of academic integrity in primary schools. At present, there is no shared approach developed in the schools of Latvia for preventing dishonest action, thus students do not have a clear notion about the consequences. Similarly, a common approach should be developed to the question of what is considered dishonest action. The data obtained in the study show that one of the reasons for such behaviour is students' lack of knowledge and lack of understanding about what is and what is not academically honest action (for example, the student is aware that the use of cribs is a violation of academic integrity but does it despite that). Not all students consider honesty a value. An answer given by a student in the questionnaire: "If students cheat smartly, then it's cool", opens this issue for discussion. One of the goals of the law on education is to ensure the possibility to develop one's mental and physical potential in order to become an independent and intelligent personality, a member of the democratic state of Latvia and of society in general (Latvijas Vēstnesis [The Official Publisher of the Republic of Latvia], 1998). A member of society in whose system of values one such as "honesty" is not instilled, developed and refined cannot make decisions in the shared interests of the whole society.

The authors of the study see the possibility to raise the issues of academic integrity in the context of elementary and primary education, connecting them to the characteristics of the children's age, as well as the new competence-based approach in the teaching/learning content "Skola2030" and the virtues incorporated in it – responsibility, diligence, honesty, temperance and fairness (Skola2030, 2018).

Conclusion

The concept of academic integrity in Latvia is mainly discussed only in the context of higher education but, undeniably, it is topical in all levels of education and in the most diverse educational institutions. The relevance of this concept in Latvia is substantiated by the Guidelines of Education Development 2021–2027 and the project "Competence-based approach in the teaching/learning content" implemented by the National Centre for Education. Entering into the remote teaching/learning process in 2020

has promoted the importance of understanding of academic integrity and observance of it.

1. The review of theoretical literature leads to the conclusions that academic integrity is influenced by character features, a lack of knowledge and skills, insufficiently timely preparation, lack of motivation, the emotional pressure made by peers, the view that the set priority is the received assessment, and values in the family.

2. Both teachers and students in the empirical study indicated insufficiently timely preparation as the most important factor affecting academic integrity.

3. The analysis of theoretical literature allows for concluding that the ways in which academic dishonesty manifests can be divided into four main groups: assistance from other people, bodies and the surrounding environment, technologies and other methods that combine a set of different actions.

4. Teachers mentioned "looking into someone else's work" and "verbal communication" as the most frequent manifestations of academic dishonesty in the primary education stage. However, students in Grades 4–6 claimed that they most frequently have performed such violations as "writing down the necessary information in a personally most suitable place" and "the use of a crib", while students of Grades 7–9 indicated "writing down the necessary information in a personally most suitable place" and "participation in another person's violation of academic integrity".

5. A shared understanding of the importance of promoting academic integrity in the educational environment is needed. The data of the survey reveal that 27.4% of teachers have never encountered the concept of academic integrity in their professional experience, which serves as evidence that teachers lack information. Irrespective of this fact, the answers they have given confirm that the factors affecting academic integrity analysed in the literature review are relevant.

6. The majority of surveyed students do not consider all the ways of academic dishonesty listed in the questionnaire as dishonest actions and only note some of them, which can be explained by student's age characteristics and their previous experience in performing academically dishonest actions.

7. A consciously made choice to act academically dishonestly increases in accordance with the age, yet the action is also affected by different factors. Respondents mentioned the following as the most relevant – a lack of knowledge and skills and insufficiently timely preparation. The student can prefer academically dishonest action, accepting it as the only logical possibility in order to receive a positive mark in a school subject and be moved to the next grade.

8. Academic integrity is a topical and relatively little researched topic in Latvia. The authors of the study see a perspective in the in-depth exploration of this topic and consider that academic integrity should be put as a strategic and priority value in the educational institutions of all levels in Latvia.

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DIFFERENT ASPECTS OF EDUCATION AND TEACHING SYSTEMS TO ENSURE HIGH ACHIEVEMENT FOR 4th GRADE STUDENTS AND 15-YEAR-OLDS

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ABSTRACT

Student high achievement in different countries are the main topic in every Organisation for Economic Co-operation and Development (OECD) Programme for International Student Assessment's (PISA), International Association for the Evaluation of Educational Achievement (IEA) Progress in International Reading Literacy Study (PIRLS), IEA Trends in International Mathematics and Science Study (TIMSS) testing cycles. Increasingly relevant for many countries becomes the high achievement for their students in order to be able to provide high quality education and to be able to prepare students for their future studies in high-level competence. The aim of the research is to analyse national education and learning systems, standards and curriculums, teachers' recruitment, teachers' induction and the autonomy over classroom activities, including teaching methods teachers use in the classroom, how they plan and prepare lessons, in order to identify possible factors that could affect Latvian learners achievement by comparing countries who have higher student achievement than Latvian students or have the same achievement level or situation in OECD PISA, IEA TIMSS and IEA PIRLS surveys. In the analysis it is taken into account that in Latvia the approach of the competencies in the content of studies is only gradually introduced since 2021, it will be possible to fully compare results of Latvia with high-achieving countries only at the next research cycles.

Keywords: *the education system, IEA TIMSS, IEA PIRLS, high achievement, OECD PISA, students' achievement, students' assessment*

Introduction

Each country wants their education system to be at high quality. Countries which have participated in the studies to evaluate it and found ways how to improve it. That is most important that for small countries which think about development and investment. It is necessary that these small countries could compete with others bigger countries.

Education quality means that the students could show skills and knowledge that are defined in each stage and how well they can use these skills and knowledge in real life situations of education studies' view. Other countries try to find out the reasons why students from some countries can reach that others cannot.

The aim of the article is to analyse national education and learning systems, standards and curriculums, teachers' recruitment, teachers' induction and the autonomy over the classroom activities, including teaching methods teachers use in the classroom, how they plan and prepare lessons, in order to identify possible factors that could affect Latvian learners achievement by comparing countries who have higher student achievement than Latvian students or have the same achievement level or situation in Organisation for Economic Co-operation and Development the Programme for International Student Assessment (OECD PISA), International Association for the Evaluation of Educational Achievement Progress in International Reading Literacy Study (IEA PIRLS) and IEA Trends in International Mathematics and Science Study (TIMSS) surveys. In the analysis it is taken into account that in Latvia the approach of competencies in the content of studies is only gradually introduced since 2021, it will be possible to fully compare the results of Latvia with high-achieving countries only in the next research cycles.

Many countries who participates in OECD PISA, IEA TIMSS and IEA PIRLS surveys have national curriculum and other normative documents that describes the learning approach and besides required knowledge, core skills and values, have indicated competences that students should learn in order to finish primary education. The core of the education reforms, which were held over the past few years in many countries, is to develop students' competence in learning to learn and to develop 21st Century competencies and skills for their future life.

The primary school curriculum in the past few years has been overseen and changed according to students' needs for further life in order to teach in school not only the knowledge and core skills, but also life skills and values. The subject areas that the primary school curriculum includes are different among countries. For example, in France there are five subject areas – languages to think and communicate; methodologies and tools to learn; the training of the individual and the citizen; natural and technical systems; world representations and human activity (EURYDICE, 2021b). In Latvia there are seven subject areas – language; social and civic; cultural understanding and self-expression in art; natural sciences, mathematics; technology; health and physical activity (Regulations Regarding the State Basic Education Standard and Model Basic Education Programmes, 2018). In Lithuania there are seven subject areas – moral education; languages;

mathematics; natural sciences; social education; arts; information technologies; technologies; physical education (Centre for Quality Assessment in Higher Education, 2022). In Hong Kong there are eight subject areas – Chinese language education; English language education; mathematics education; science education; technology education; personal, social, and humanities education; arts education and physical education (Education Bureau, 2021). In Taiwan are eight learning areas – language arts; mathematics; social studies; natural sciences; arts; technology; health and physical education; and integrative activities (National Center on Education and the Economy, 2021b). In Australia there are eight subject areas – English; mathematics; science; health and physical education; humanities and social sciences; the arts; technologies and languages (Australian Curriculum, Assessment and Reporting Authority). In Czech Republic there are nine subject areas – language and language communication; mathematics and its application; information and communication technologies; man and the world; man and society; man and the nature; arts and culture; man and health; man and work (Vlčková, 2015). In Singapore there are ten subject areas – English; mother tongue language (available for Chinese-speaking, Malay-speaking and Tamil-speaking students); mathematics; science; art; music; physical education; social studies; and character and citizenship education, and from 2019 – coding class (National Center on Education and the Economy, 2021a).

Learning areas are different among countries, but progress can be seen in subject integration and a holistic approach to curriculum objectives. The learning approach and curriculum focus on students' ability to be successful in their life and would be better prepared for their future (Ministry of Education. Singapore, 2021).

High-achieving countries have different approaches to monitoring curriculum outcomes, teachers' education and professional development opportunities, teachers' teaching methods and approaches to curriculum outcomes, and working with students with special needs or different levels of skills and knowledge. Authors define hypothesis that higher students achievements was influenced by

- Teachers qualification;
- Work with students with low achievements and talented students;
- Students that enjoy to learn a specific field;
- Country well-being level.

Methodology

In the study there are used data from OECD PISA 2018, IEA PIRLS 2016 and IEA TIMSS 2019.

Data analyses were made between countries, which participated in all of these three studies. PISA samples are fifteen years-old students, but PIRLS and TIMSS the fourth graders.

Sample size: each country participating in these studies needs a plan for defining its national target population and applying the sampling methods to achieve a nationally representative sample of schools and students (OECD, 2019, IEA, 2017; IEA, 2020). For example: for most countries, the TIMSS precision requirements are met with a school sample of 150 schools and a student sample of 4,000 students for each target grade. Depending on the average class size in the country, one class from each sampled school may be sufficient to achieve the desired student sample size (IEA, 2020).

Country's average scores were taken as a base data to find achievement's differences between PISA reading average and PIRLS average, TIMSS maths average and PISA maths average, PISA science and TIMSS science average.

Afterwards, countries were divided in four groups for each field – reading, maths and science. High-High (HH) – all countries which have results above mean score in both studies in each field. Like reading in PISA and PIRLS, maths in PISA and TIMSS, science in PISA and TIMSS. High-Low (HL) – High in PIRLS or TIMSS, but low in PISA. Low-Low (LL) – Low in both PISA and PIRLS or TIMSS, and Low-High (LH) – Low in PIRLS or TIMSS, and High PISA (see in Fig. 1., Fig. 2 and Fig. 3.).
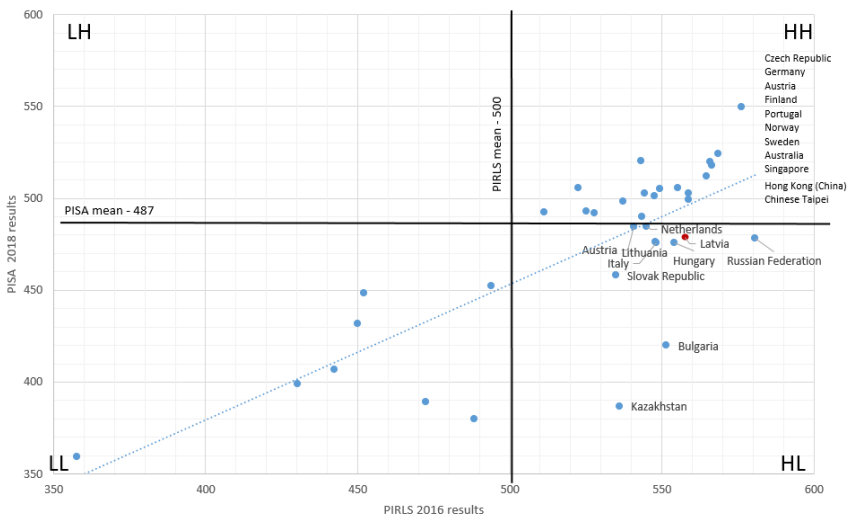
Figure 1. Reading Achievements in PISA 2018 and PIRLS 2016
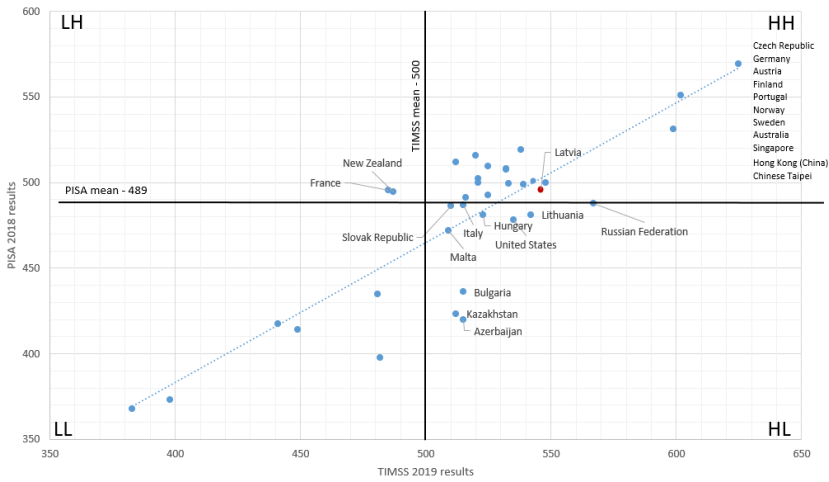
Figure 2. Maths Achievements in PISA 2018 and TIMSS 2019
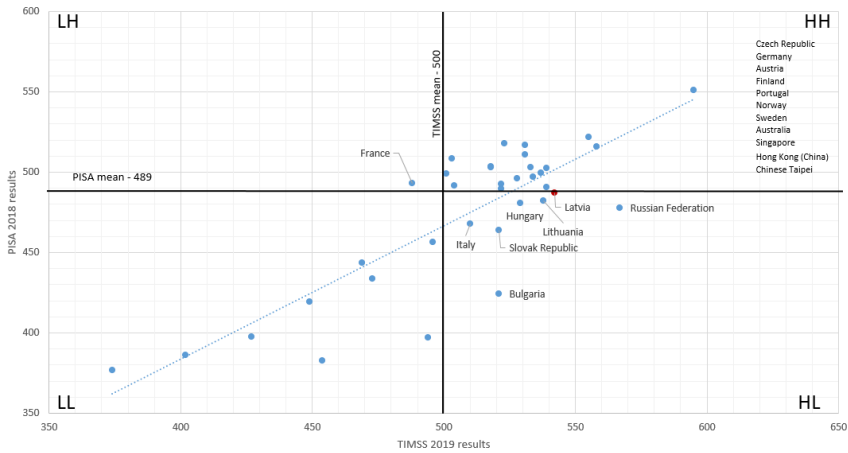
Figure 3. Science Achievements in PISA 2018 and TIMSS 2019

Then there were used just those countries which were in one of the three groups – HH, HL or LH. Factors that could be the reasons for students' high or low achievements in some studies, were found between these countries.

Most countries have high scores in PISA and PIRLS or TIMSS as well and high scores in PIRLS or TIMSS and low scores in PISA. Just France has a high score in PISA, but low in TIMSS, the same situation is in New Zealand but just for Maths (see in Table 1).

Table 1. Countries achievement groups

Group	Country
HH	Australia
	Austria
	Chinese Taipei
	Czech Republic
	Finland
	Germany
	Hong Kong (China)
	Norway
	Portugal
	Singapore
	Sweden
HL	Russia
	Bulgaria
	Hungary
	Latvia
	Lithuania
	Slovak Republic
LH	France

Then researchers analysed information in literature based on these groups to find education development possibilities.

Results and Discussion

Globalisation, rapid technological development, demographics changes, the emergence of new professions in the labour market are only some of the key driving forces of the current times we are living in and which will shape our future. Education and curricula need to adapt to these changes to meet today's needs and equip students with skills and knowledge they need for the 21st century. Curricula defines the knowledge, skills and attitudes, which are often embodied in competences that students are expected to acquire. Latvia will introduce a competences-based approach to curriculum content from 2021, which will be phased by 2023 at all levels of the education system. Competences in the curriculum are also defined in Singapore (Ministry of Education. Singapore, 2021), Taiwan (Hung, 2019), Finland (EURYDICE, 2022c), the Czech Republic (Digital Community and

Innovation in Adult and Basic Skills, 2019), Austria (EURYDICE, 2021a) and Bulgaria (EURYDICE, 2022b), but their implementation varies. The education reforms in Austria develops education standards that focus on the subject-specific competences in order to develop individual competence assessment. The individual competence assessment is a set for academic diagnostics and it is outlined to survey subject-related and cross-curricular competencies of students (EURYDICE, 2021a). Australia has a different approach to students' achievement – there is a national Curriculum for schools, which has been developed by the Australian Curriculum, Assessment and Reporting Authority (ACARA). ACARA develops learning outcomes that are common across all schools from kindergarten to year 12 and as a result of the development of The National Assessment Program – Literacy and Numeracy (NAPLAN) as an annual assessment for students in Year 3, 5, 7 and 9. NAPLAN includes four areas: reading, writing, language conventions and numeracy (Australian Government Department of Foreign Affairs and Trade; Australian Curriculum, Assessment and Reporting, 2021).

Defining the competences required for the curriculum is an important step to help the students to develop the necessary skills, attitudes and knowledge. However, the preparedness of teachers to organise and manage the learning process is also important. For example, Australian professional standards for teachers help teachers to understand and develop their teaching practice and expertise across four career stages in order to bring a bigger impact on all students (Australian Institute for Teaching and School Leadership). Australian teachers can use different teaching practices to promote students' achievement and engagement. In addition, teachers use a particular teaching practice according to the year level of the student, school characteristics and class characteristics (Vassallo, Daraganova, Zhang, Homel, 2017). In the other countries, teachers uses different teaching practices to meet the learning outcomes of the curriculum, except the Slovak Republic where teaching methods can be chosen by themselves, but at the level of school methodological commissions elaborate methods for individual subjects in collaboration with teachers (EURYDICE, 2021d). In the countries where students achive high achievements, also teachers' profession is rated higher in the society. For example, the prestige of the teaching profession is high in Singapore and Hong Kong. In these countries only the best students become teachers and Taiwan future teachers need to pass qualification examinations before taking practical education training in schools (Ministry of Education Republic of China (Taiwan), 2021), but in Germany in-service teacher education remains underdeveloped and have many issues (Terhart, 2019) although German students show high scores in international surveys. Low prestige of the teacher's profession in society is in Latvia and Lithuania (EURYDICE, 2021c; OECD 2014).
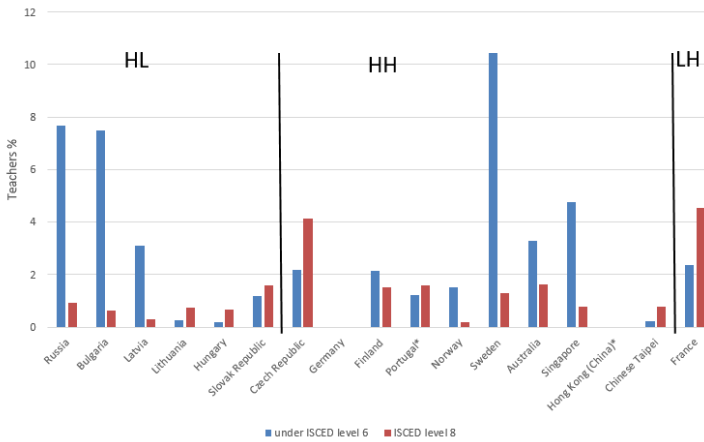
Figure 4. Achievement groups' countries' Teachers qualifications

One of the factors that can be used is **teacher qualification** and data shows that higher qualifications of teachers are in HH group and LH group. There are more teachers with education on ISCED level 8 (see in Fig. 4). It can be concluded that to become a teacher can be achieved through a bachelor's or master's degree and, in some countries (for example, Austria), teachers have mentors in their first year of service (EURYDICE, 2022a). Future teachers in Taiwan need to pass a qualification examination before undertaking practical education training in schools (Ministry of Education Republic of China (Taiwan), 2021). However, countries analysed and made changes in teachers' education approach. Rapid changes that happen in education are challenging and preparing the future teachers is not only about knowledge and core-skills. Some issues in teacher education that need to be addressed are also in countries with high students achievements, for example, in Singapore (Loh, Hu, 2019). Teachers' qualification and professional development have a big impact on students' achievements – that is one of the crucial factors. If a country frequently monitors students' achievements and offers teachers methods and instruments for improvement there are more chances that students and teachers will improve their performance as it is. For example, in Austria (EURYDICE, 2021a). Teachers' professional development is significant for everyday practice to achieve better results. In Latvia teachers need to spend 36 hours in three years in professional development activities (Regulations on the education and professional qualifications required of teachers and the procedure for developing teachers' professional competence, 2018). Comparing the time that teachers need to spend in the professional development activities, in Latvia teachers need to spend less time in these

activities compared to Singapore – 100 voluntary hours of professional development per year (Bautista, Wong, Gopinathan, 2015).

Data shows that most of the fourth graders in the most of the countries can reach the highest achievement level. The highest level at PISA reaches more students from HH countries. The same situation is with the lowest level. More students in the lowest level are in HL countries. That could mean that HH countries better **work with low-level students and provide more help to students to develop their talent**. When analysing education systems and curricula and teaching approaches, high-achieving countries pay more attention to the students who need extra help and to the gifted students. Hong Kong has a special approach (learning programmes) for the gifted students (Education Bureau, 2022a) and also Singapore has a gifted education programme to help the gifted students to realise their full potential (Ministry of Education. Singapore, 2022), but Finland has not only special programmes for the gifted students, but also special schools and camps (Tirri, Kuusisto, 2013). Hong Kong also has school-based after-school learning and support programmes for the students who needs additional help (Education Bureau, 2022b).

When looking at work with the gifted students and work with the students who need extra support, it is also important to look at the inclusive education. Class sizes are smaller for students with special needs and their needs are different. In Lithuania, from 1 September 2024, children with disabilities and special educational needs will be able to attend the nearest mainstream school to their place of residence and will be admitted on an equal basis with other students. The amendments to the Education Law strengthen equal participation in education for persons with different abilities and learning needs, implementing the principle of inclusion in education. Most students with special educational needs are educated in mainstream schools together with their peers through inclusive education (European Agency for Special needs and Inclusive Education, 2020). In France, a law of 28 July 2019 (Law No 2019-791 of 26 July 2019: Pour une école de la confiance), is specifically dedicated to strenghten inclusive education, establishes that inclusive education is part of initial teacher training (European Agency for Special Needs and Inclusive Education, 2019). Whereas in Germany special education teachers have to study special program for this qualification and need to choose two subject areas relating to special education (European Agency for Special Needs and Inclusive Education, 2020). Inclusive education and work with students who have special needs are more common nowadays and teachers and school leaders need to bring close attention to these students and how to help them achieve their potential.

TIMSS and PIRLS has shown that HH, HL and LH countries fourth graders more enjoy learning reading, maths and science (see in Fig. 5, Fig. 6,

Fig. 7), in PISA that kind of data was not. To analyse learning approaches and curricula, not widely countries focus on students enjoyment learn specific subject, although during Covid-19 pandemic, some of the countries analyse the data from students and the teachers about online learning and what have caused most of the stress during this time (for example, Law, Yee, Ng, Fong 2022; Tan, Chua, 2022; Lin, Chen, Liu, Chang, 2022).
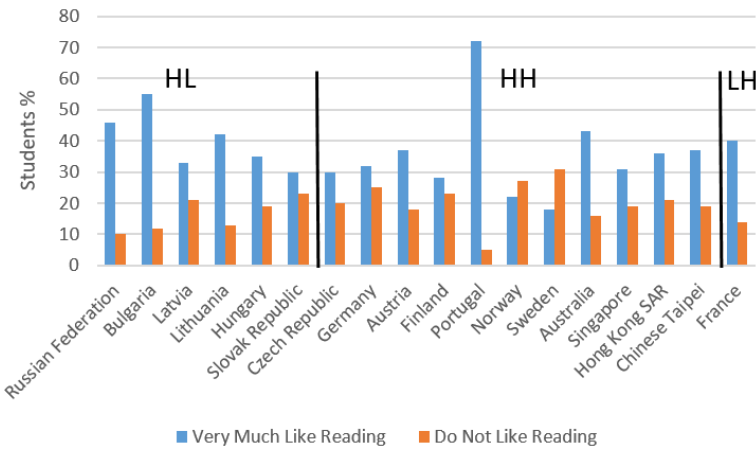
Figure 5. Students count % who very much like or do not like reading in PIRLS 2016
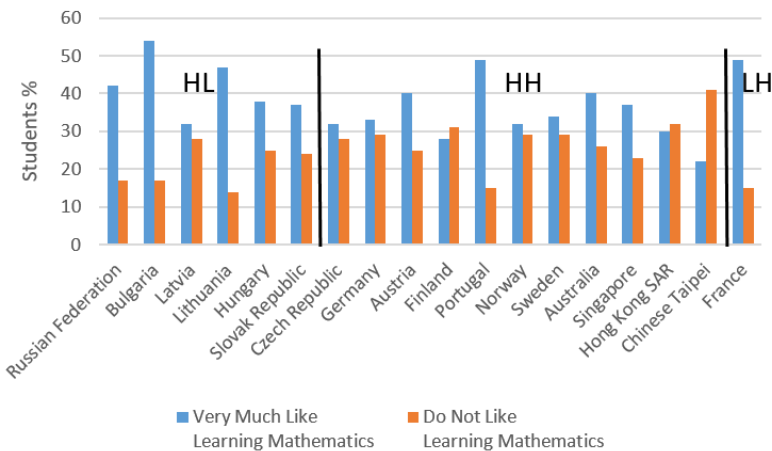
Figure 6. Students count % who very much like or do not like learning mathematics in TIMSS 2019
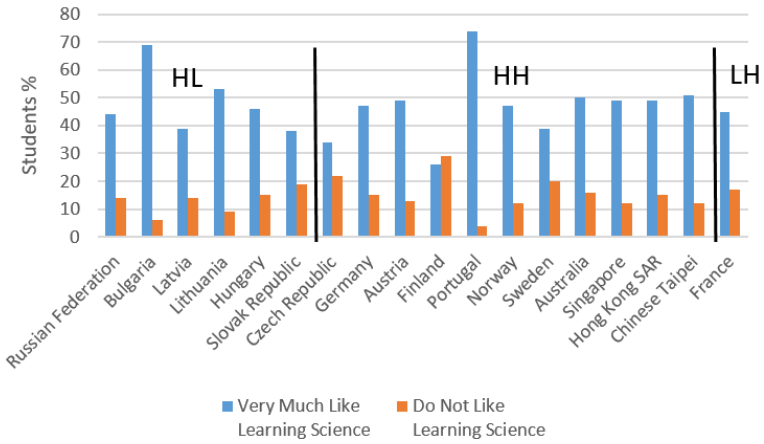
Figure 7. Students count % who very much like or do not like learning science in TIMSS 2019

Well-being is related to income. Data shown (see in Fig. 8) countries with higher GDP are countries from the HH group. That means that the countries can provide the education that develops students' skills in younger classes. It is harder to do in older classes. There is a need for motivated teachers to find out ways to motivate students. That is less possible in countries with lower GDP as data shows.
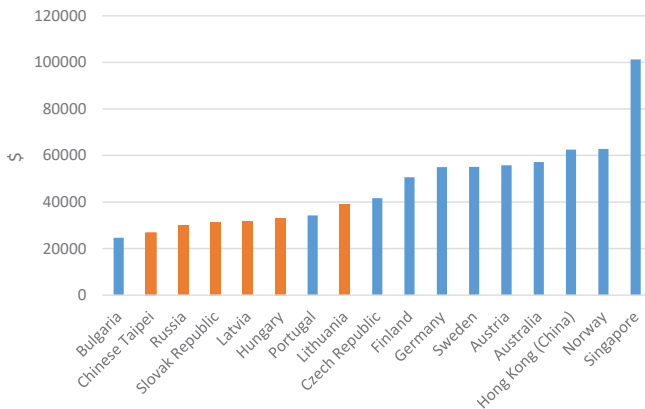
Figure 8. GDP per citizens

Note: Blue color – HH countries, Orange – HL countries

Conclusions

In the analysis national education systems, teaching approaches, teacher education and professional development opportunities, and student achievement, it is necessary to identify the factors that contribute to the students achievement at the national level, taking into account OECD PISA, IEA TIMSS and IEA PIRLS student achievement. The higher is the level of teachers' education, the higher the level of students' achievement. As countries are working hard to improve teachers' education and are constantly making changes to the curricula and competences that students are expected to acquire, there is also a positive impact of these reforms and changes on teachers' preparation and readiness for new approaches and curriculum outcomes. It should be indicated that the Australian NAPLAN test (Australian Government Department of Foreign Affairs and Trade) shows what students need to improve and helps teachers to achieve better results as they are prepared.

Comparing Latvia with others countries, another factor of high student achievement that needs to be addressed is working with talented students and those who needs extra support. Countries that pays extra attention to these students show higher results in international studies (e. g. Hong Kong, Singapore, Finland). It should be noted that not all countries have developed separate approaches or programmes for these students, but they still show high achievement. This can also be explained by the different teaching approaches, in which work with the gifted and the approach to each student is integrated into the daily lessons. In Norway, for example, formative assessment is used, which allows feedback to be given individually to each student and in communication to parents what needs to be worked on (EURYDICE, 2022d).

In conclusion, the hypothesis can be partially confirmed, as high student achievement is found in countries with high levels of teacher education (ISCED level 8). Also in these countries work with talented students and those in need of extra support, albeit implemented in different ways (as separate curricula or embedded in daily classroom work). Furthermore, more developed countries with higher gross domestic product (GDP) have higher student achievement. International research data also shows students' willingness to study particular subjects and its relationship with achievement, but this cannot currently be theorised, as there are not enough studies to ascertain students' views on this. In order to fully understand what influences students' high achievements in these countries, in the future we need to analyse more information about what teachers and students are doing in the class that gives an important impact on their achievements, because education systems, learning approaches, used methods in classes

are similar, but students' scores vary. That brings to the possibility that there are other relevant factors that could indicate these differences, apart from culture and prosperity, which were not indicated in this study.

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USING QRIDI PROGRAM TO PROMOTE THE COOPERATION BETWEEN TEACHERS AND PARENTS

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ABSTRACT

Successful cooperation and collaboration between teachers and school parents are essential for the development of students, their successful learning process, and academic achievements. This cooperation and collaboration between teachers and parents are essential to creating it successfully, setting responsibilities and rights for each educational partner. Important question- how to build this cooperation respectfully and engage students in this cooperation to reach academic success and educational objectives mentioned in educational documents.

The Qridi education program, created in Finland, is a tool for promoting teacher cooperation with school parents that saves teachers' time in communicating with their parents. The program is based on a teacher's planned and supervised training process, through regular school evaluations, students' self-assessments, and learning to observe the work of another classmate, which is also available to parents, and through continued training at home, parents can continue the school teaching process.

The purpose of the study is to assess the Qridi program's effectiveness in teacher collaboration with parents. Methods used for the study are literature analysis using the SALSA method as data analysis method, survey for teachers and survey for parents as data acquisition method, and data analysis with descriptive data analysis method.

Analyzing survey data, it was clarified that teachers can significantly reduce the time spent on communication with parents without losing the quality of the communication, teachers, and parents are satisfied with using the Qridi program, that it is user-friendly, it was easy to start to work with it and that communication for both parties has improved.

Keywords: *collaboration in educational process, educational objectives, educational partners, educational process, teacher and parent cooperation*

Introduction

In a useful and effective educational process, student academic skill performance depends on the cooperation and collaboration process with all educational partners included. (Imants, Van der Wal, 2020). This

cooperation and collaboration have coherence as an important factor for students to achieve academic competencies and skills (Landeros, 2011). When parents are engaged in the day educational process and have cooperation and collaboration from home to school, students have higher academic achievements, but improvement in emotion and social resilience, also behavior conduction (Hughes, Kwok, 2007).

The aim of the study was to reveal the effectiveness of using the Qridi program between teachers and parents. To accomplish this aim, a systematic literature analysis was done that detected what was an effective collaboration between a teacher and parents, as well as a survey of teachers and parents using the Qridi program and conducting data analysis of the Qridi program.

The theoretical framework of the study consists of studies on the use of different programs to promote cooperation between teachers and parents, as well as studies on cooperation between teachers and students, particularly in terms of changing conditions.

Parents, just like students, are important educational partners in schools. The relationship between teachers – students and parents and a shared vision of setting educational objectives is very important in the educational process, also – not only to set common goals but to achieve these goals and discuss different steps and possibilities of how it was done.

Qridi program

The Qridi program has been created in Finland and is currently (the year 2022) used by more than 70,000 users in more than 10 countries. This program was developed in close cooperation with teachers and students from different universities. It is unique because it can be used to evaluate and teach 21st-century skills while at the same time assessing students' behavior, the use of knowledge, skills, attitudes, and will in the educational process. The tool has especially been designed for guidance and the evaluation of continuous learning (Qridi Reviews, 2022).

The Qridi program is certified by the Education Alliance of Finland (EAF) stressing the main benefits for three educational partners when using the Qridi program – for students learning is active, not passive, students can evaluate themselves and get feedback from classmates, teachers, and parents, 21st-century skills, rehearsing and knowledge constructions, tasks can be made and done individual or collaborative. Using the Qridi program, students are practicing to give and get feedback, observe and evaluate his/her learning process, express ideas and listen to other opinions, and set learning goals together with teachers and parents. (Qridi – The Learner-Centered Platform, 2021).

Qridi is a digital platform for students, teachers, and parents, an easy-to-use tool that allows all parties involved in the educational process to plan,

monitor, and evaluate learning in an inspiring and active way. Students and their parents are actively involved in all stages of the educational process, taking into account the guidance provided by the teacher or parents. Parents can also create their own tasks when their children study at home. There are clearly defined goals, results to be achieved, evaluations, and feedback that can be provided by a teacher, classmates, or parents. Students, parents, and teachers can also analyze what is already done and see the next steps that have to be done. Data analysis for every task and every student is an assistant for teachers and parents in conversations about students' achievements or some problems.

The program can be used for different ages, there are interfaces that are friendly for smaller students and some for teenagers and even adults or university students.

Each student has a profile that can analyze not only learning achievements but also self-evaluation, and evaluations from teachers and classmates, and use these data in conversations with parents. Parents, teachers, and school administrators also have access to this data (Education Alliance Finland, 2018)

An essential part of the Qridi program is the analysis tools, where the teacher can quickly and effectively assess not only the stage in which the student is currently present but also create different schedules to be used for the analysis of teachers themselves, in negotiations with school administration, students and parents. There are several tools that can be used for every educational partner – task list tools with different assignment possibilities and adaption to other digital tools and learning platforms, journal tools for reflection, information can be written or another format – video or audio files, photos, teachers can give easy feedback to this reflection, evaluation tool – assessment of lesson or daily work.

Qridi contributes to learning and development by making a child's self-assessment an essential part of the school and home learning process, particularly relevant for Covid-19, where one week of school training can take place and a remote learning process is carried out in the next. The Qridi program strengthens the knowledge of the student, highlights the strengths, traces every step in the learning process beyond teachers, but also for parents, as a tool for the vision of teachers and parents on their daily achievements, which in some ways facilitates the work of a teacher in regular day-to-day communication with parents, because of the daily learning achievements can be tracked and analyzed it in conversation with teachers, for example, at the end of the semester (Qridi – The Learner-Centered Platform, 2021).

Qridi and other educational programs

There are several more programs comparable to the Qridi program – Alps, Pupil Progress, Learning Ladders, Evidence Me, Kinteract, Socrative, Mark Mate, Earwig, Edu Mate, Assessor by askEddi, Curriculum Maestro, Really School, and others. Schools can choose these programs not only to help teachers to get ready for lessons but to communicate with students and their parents. Students benefit from using educational programs as a more interesting way of learning, getting an assessment, setting educational targets, and practicing digital skills. Parents can follow every step of their children's education process to assist them when and if it is necessary, and also contact teachers.

Covid pandemic period and studying partly remotely detected the necessity for different educational programs to help all educational partners. In 2022 many educational programs are available, adapted for learning 21st-century skills and different school subjects, after-school lessons, for teachers to plan, assess, and organize educational processes with a wide range of materials for each subject, especially digital materials, for school management – classroom management, management, making timetable and others. Many of these programs are available for parents with parent access (Qridi, Evidence Me, Learning Ladders, Kinteract, and others). Programs can be used with different devices (phones, computers, tablets, digital blackboard), they are custom for Apple or Android, Mac, or Windows systems and are user-friendly. Some programs have different user languages (Learning Ladder, Socrative and others) but mostly there is one language – English. It is an opportunity to practice English in different school subjects and to implement interfrontal links via subjects. Almost every educational program provides a free trial for 1 month, after which the price for one year varies from 50–500 EUR per year, regarding the number of users, available options, and other terms.

Some educational programs are studied (Qridi, Alps, Learning Ladder, Kinteract, and others) in different case studies in several countries that examine the use of these programs for educational partners, their cooperation and collaboration, and academic skills and success for students.

The effectiveness of some educational programs compiled in Table 1, assessing 3 main features of the program, student age range, user language and user reviews valuations, using a comparison from "EdTech Impact" that combines wide information and valuation of educational programs and gives advice to program developers (EdTech Impact, 2022).

Table 1. Comparison of different educational programs

Educational program	Description (EdTech Impact, 2022)	3 main Features	Student Age Range (years)	User languages	User reviews valuation (EdTech Impact, 2022)
Qridi (founded in 2015, Finland)	The educational digital tool created for the evaluation, a user-friendly interface for learning 21st-century skills, knowledge, will, and attitude	Assessment; Collaborative learning; Setting goals	5–7 8–10 11–13 14–16	English Finnish Swedish Estonian	4.8 form 5 (46 reviews)
Alps (founded in 2001, UK)	An easy and accessible digital tool to check students' progress giving you back precious time to take action where needed. Alps Connect is your partner in accessible, actionable insight across the year.	In-Year Tracking; Student-Led Analysis; Student, Subject, Whole School And Group Analysis	14–16 17–18	English	4.7 from 5 (44 reviews)
Pupil Progress (founded in 2016, UK)	Digital tool for teachers and parents to receive individual reports for students, summary reports, and live classroom data	Exam Board Specific Tracking; Individual Student Reports; Class Level Attainment Analysis	0–4 5–7 8–10 11–13 14–16 17–18	English	4.9 from 5 (39 reviews)
Learning Ladders (founded in 2014, UK)	Supporting digital tool for teaching and learning, data analysis, high – quality resources	Early Years; End Of Term/Year Reports; Resources; Homework	0–4 5–7 8–10 11–13 14–16	Arabic Chinese English French German Italian Japanese Korean Spanish	4.6 from 5 (24 reviews)
Evidence Me (founded in 2010, UK)	A digital educational tool for assessing students' observation, analyzing the impact of the learning process and development	Auto Suggesting Of Objectives; Dedicated Parent App; Different Report Types	0–4 5–7 8–10 11–13	English	4.8 from 5 (7 reviews)

Continued from previous page

Educational program	Description (EdTech Impact, 2022)	3 main Features	Student Age Range (years)	User languages	User reviews valuation (EdTech Impact, 2022)
Kinteract (founded in 2015, UK)	Digital educational platform with evidence-based learning and teaching	Evidence-Based; Assessments; Powerful Reporting Monitor And Track Progression	0–4 5–7 8–10 11–13 14–16 1 7–18	English	4.5 from 5 (4 reviews)
Socrative (founded in 2012, Canada)	Digital educational app with fun elements and an easy process of assessment to evaluate and monitor student achievements	Assessment; Quick Marking; Grading; Reporting;	0–4 5–7 8–10 11–13 14–16 17–18 19+	Chinese English French German Italian Spanish	4.45 from 5 (68 reviews)
Mark Mate (founded in 2016, UK)	A digital educational tool for teachers with digital methods for assessment and data to evaluate students' success	Give Student Feedback; Administer Assessments Reduce Workload	0–4 5–7 8–10 11–13 14–16 17–18	English	4.5 from 5 (32 reviews)
Edumate (founded in 2019, UK)	Digital educational tool previous known as ClassMaster helps teachers to create worksheets, tests, and other materials for interactive assessments	Classwork; Homework; Assessments	5–7 8–10 11–13 14–16 17–18 19+	English	4 from 5 (7 reviews)

After analysis of different educational programs, it is identified that these tools help teachers to evaluate and assess students, check student progress, and give feedback to ensure evaluation and quality of the educational process. Several tools facilitate the process of preparation for lessons with a wide range of learning material and educational technology tools including different subjects. Analyzing data from these educational programs, school management and teachers have explicit reviews about students' academic success, knowledge, and skills to use this information to improve the education process and to communicate with parents about their children's educational success or problems. Different educational program reviews reveal satisfied evaluations from teachers – improved educational process, wellbeing, giving feedback, easy assessment, collaboration with students and parents; from parents – comprehensible assessments and feedback from teachers, collaboration and communication with teachers. Analyzing the age range of students using educational programs starting from preschool to university detect digitalization as an important educational process to achieve academic knowledge, skills, and competencies.

Program development and adaptability to different languages indicate the necessity of using these tools not only for improved and advanced educational processes but also for clear evaluation processes, assessments, and easy communication with parents.

Teacher and parent cooperation

The theoretical framework of the study consists of research on the use of different programs to promote cooperation between teachers and parents, as well as studies on cooperation and collaboration between teachers and students, particularly in terms of changing conditions (Covid19 pandemics and others).

Parents, just like students, are important educational partners in schools. Parents are their children's first educators and they share knowledge with their children through engagement in everyday activities and play, and they continue to support their children's learning process. (Goodall, Montgomery, 2014). The principles and rules for the cooperation of educational partners – teachers, students, and their parents have been established, but the result of successful cooperation with a common educational goal is one of the cornerstones of an effective learning process that promotes student learning achievements. (Imants, Van der Wal, 2020). It is also highlighted that the cooperation between these three educational actors is the key to successfully achieving the overall and individual educational objectives of each educational partner (Gonzalez-Mena, 2011). Important is the student-teacher-parent relationship. They all actively participate in setting learning targets and accompanying the learning path of their children. By means

of different classroom activities, the experiment seeks to improve student engagement and provide feedback on their learning progress (Kapsalis, et al., 2019).

The collaboration of teachers, students, and parents is the best recipe for success in today's world (Depaepe, 2014), therefore, cooperation based on a common learning target at each school is an effective tool in modern education and a forward-looking perspective that is suitable for students when educational partners cooperate. In the 21st century, cooperation and collaboration in education have been studied from different perspectives and also from different educational partner sides: a teacher – a student, a teacher – a student parent, a teacher – a teacher, a student – a student parent. In the future, cooperation is working together when each other helps to study (Slavin, 2014). Such cooperation not only improves learning achievements and performance but also makes the friendship between students, work more successfully, and fit into the school and classroom environment. It is essential that such cooperation also results in improved students' self-confidence. A shared vision of the educational target among the different partners in education contributes to an increase in motivation (Slavin, 2014). Cooperation in studies often is described as a joint trip for a teacher and student, as well as students' parents, where all involved parties in this journey share a common vision and a common goal (Hattie, 2009). The shared vision of the objectives of the education cooperation partners is defined as joint action aimed at achieving common objectives (Johnson, Johnson, 1999). Cooperation is an essential 21st-century skill, not only in education, where, in different collaborative situations, partners' study processes can not only partly replace each other but also have a positive impact on each other, also to improve learning achievements, and jointly promote positive feelings (Johnson, Johnson, 2014).

Family-centered care (Hardman, et al., 2017) is one of the solutions for children's academic and social skill development in teacher – parents collaboration. In this collaboration services are provided by teachers in ways that are flexible and responsive to family needs, concerns, and priorities, also parent and child diversity are celebrated and recognized. Decisions making occurs in a collaborative partnership between parents and professionals, reflecting family rather than professional goals.

The Ecological Model of the Brofenbrenner (Brofenbrenner, 1975, 1977) describes the closest microsystem to the student, where both the child's family and teachers are present in the nearest field. It describes the importance of this cooperation in the learning process of every education partner. In the model systems theory, the development of students is determined by different levels of the environment and the assessment of educational objectives in the future should be based on different levels of the environment, ranging

from the family and school environment to different cultural values, laws, and customs, and on the interaction of this environment (Brofenbrenner 1979, 1986, 1994). The studies revealed that the closest microsystem to the student, in which the family, school and teachers, classmates, and friends contribute to the achievement of educational objectives (Brofenbrenner, 2001), provided that all these participants in the microsystem cooperate and agree on common objectives to be achieved in the education of the student (Brofenbrenner, Morris, 2006).

Cooperation between all partners involved in the education process is a keyword through which common educational objectives should be developed for all partners in education (Gonzalez-Mena, 2011). In the educational system, there are three family engagements overlapping circles – family, school, and community (Frey, Alvarez, 2013) and this collaboration must be systemic, integrated, and sustained. There are several core values of family engagement with teachers and schools (Chavkin, 2017) starting from the idea that all families want the best for their children, all families have strength, and all families have the capacity to support their children. Also, respect for differences is essential, relationships and trust are central, families and schools should be equal partners, shared leadership is critical and engagement is more meaningful than involvement. Collaborating with parents is the only way to achieve true success. (Chavkin, 2017)

Nowadays parents are becoming teachers, researchers, advocates, and school activists (Johnson, 2011) so the only way to have cooperation that is valuable for every educational partner is to collaborate in a way that is aimed at children's academic and social skill development.

Methodology

This research is a case study with a specific subject, no generalization about this topic should be done. The problem statement of this research is communication and cooperation problems between teachers and parents as educational partners in the education process. The research question: How the use of the Qridi program promotes teacher collaboration with parents? The purpose of the study was to check the Qridi program's effectiveness in teacher collaboration with parents (see Result section of this research).

The theoretical frame of the study forms research about different programs to promote the cooperation between teachers and parents (Kapsalis et al., 2019), the partnership between teachers and parents (Jose, et al., 2020; Kambouri, et al., 2021), cooperation and collaboration between teachers and parents (Malik, 2021; Halpner, et al., 2021).

Several methods were used to discover the problem of research and answer the research question (see Table 2).

Table 2. Methods used for the research

Method	Details	Results
Literature analysis (the year 2011-2021) using the SALSA method (Booth, et al., 2016) as a data analysis method	SALSA method (Search, Appraisal, Synthesis, and Analysis) of different research and educational programs	33 units of documents, literature and sources were analyzed for this research, shown in the reference section of this article
Survey for teachers and survey for parents (Berends, 2006) as the data acquisition method	December 2021; online Questions about using the Qridi program, cooperation between teachers and parents before and after using the program; Teachers and parents selected from school using the Qridi program	24 respondents – Teachers (see results Survey – teachers) 284 respondents – Parents (see results Survey – parents)
Data analysis with descriptive data analysis method (Wolvius et al., 2021)	Detailed survey data analysis using data analysis to answer the question of the research	Analyzed data are compiled and explained in the result and conclusion section of this research

Results

The questions for teachers and parents were created with the purpose to answer the question of this research – how the use of the Qridi program promotes teacher collaboration with parents? To detect the way of collaboration, survey questions were made after literature analysis to reveal teachers' and parents' opinions about time consumption for communication before using the Qridi program and after and satisfaction with program use. There was an open section in this survey to learn more about teachers' and parents' experiences using the Qridi program. 15 respondents – teachers shared their experience using the program and first-month impressions, describing program planning tools and possibilities to use devices in the educational process, also promoting teachers' digital and organizing skills. 159 respondents – parents informed about their experience, commenting on the educational process and teachers working more than using the program, stressing that the program is user-friendly and easy for communication with teachers.

Survey – teachers

A survey for teachers using the Qridi program was conducted at the end of December 2021 to clarify their assessment of the program and its utility of the program in day-to-day work.

The survey involved 24 teachers working with students from grades 1 to 6 and working daily with the Qridi program from September 2021 throughout the school year 2021/2022 year after completing training.

There were 4 questions asked to evaluate time for communication with parents before using the Qridi program and when using it, time for preparation for everyday lessons, satisfaction with communication with parents, and satisfaction with the Qridi program.

Questions for teachers state the consumption of time for communication with parents and preparing for lessons before using the Qridi program and using it (see Table 3).

Table 3. Teachers' time consumption using the Qridi program

	Before using Qridi	Using Qridi
Time for communicating with parents, hours per week	10	7
Time for preparations for lessons, hours per week	18	18

This research states that using the Qridi program significantly reduces time consumption when teachers are communicating with parents – 3 hours per week. If parents themselves can find the information about their children's achievements, evaluation, and study progress, there are fewer questions that must be asked of the teachers, also it is easier for teachers to show and explain the educational process using Qridi data.

The time for preparation for lessons has remained unchanged, teachers comment on the need for time for the program to be learned and implemented in their daily school lives. Using the Qridi program is additional work to other documentation, but with the Qridi program, works can be scheduled in time, entered before school lessons, and the program is user-friendly and comprehensible.

Teachers point out that using the Qridi program has increased their satisfaction in communicating with parents if on average 52% of teachers indicated they were satisfied with communication with school parents before using the Qridi program, and 68% of teachers admit that their communication with parents has improved. Also, 71% of the teachers said that they are satisfied with the daily use of the Qridi program. It must be noted that the use of the Qridi program is a school-defined project in which all teachers must be involved.

Survey – parents

The survey of parents was carried out by 284 parents, whose children are studying in classes 1-6 and using the program from September 2021 in the everyday learning process.

Parents' survey notes that there has been a time reduction on average of 30 minutes of the time they consume in communication with teachers and recognize that there are significantly fewer issues using the Qridi program. Parent involvement in the educational process shows that parents want to know about the success and achievements of their children and want to be proper educational partners.

It is noted that parents need about 2 hours time to learn the program, and help from program developers and users instruction on a variety of topics is also essential.

85% of parents are satisfied with the use of the Qridi program and they highlight the convenience of using the program on different devices.

Teacher and parent satisfaction with communication

52% of teachers were satisfied with communication with parents before using the Qridi program. After using the program for 4 months, teachers note that communication with parents has become more effective and open and 68% of teachers state that they are satisfied with communication with parents.

68% of parents were satisfied with communication with teachers before using the Qridi program. After using the program for 4 months, 72% of parents state that communication has improved and is more effective.
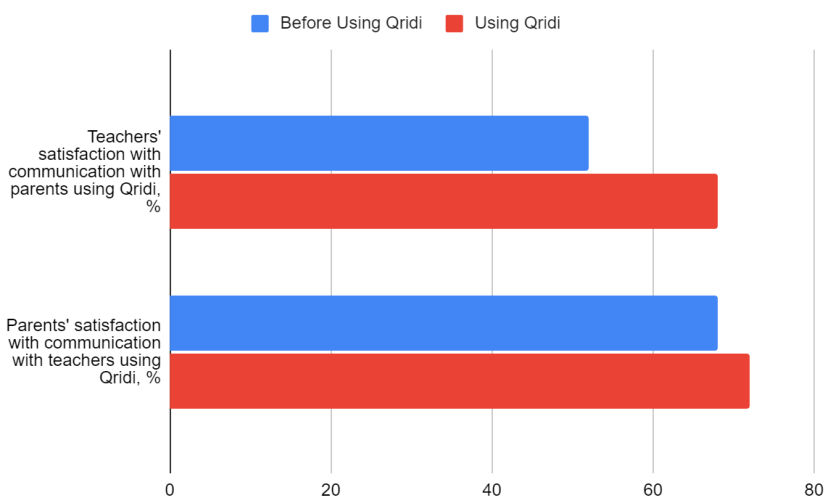
Figure 1. Teachers' and parents' satisfaction with communication

Some of the respondents note that communication with other educational partners (both – teachers and parents) can be valued as good. After using the Qridi program the educational process is more transparent and communication is easier and simpler than it was before. Parents and teachers stress that if there are common topics and discussions after Qridi data analysis, the communication is easier, both educational partners are more satisfied and there is a lack of time consumption that is important not only for teachers but also for parents.

Conclusions

Using Qridi, teachers can significantly reduce the time (up to 3 hours) spent on communication with parents without losing the quality of the communication. Learning, teaching, and assessment are visible not only to students but also to parents. The key success factor of the program can be defined by the relations between children and adults, students and teachers, and students and parents. Students and parents' feedback shows a great level of trust. Teachers indicate that Qridi is an excellent organizational tool to use for everyday work.

Teachers also point out that Qridi is a convenient tool for planning and organizing the learning process to be used in day-to-day work, especially at a time when training can be carried out remotely and rapidly, the use of the Qridi program would remain unchanged.

It is important to point out that the use of the Qridi program has improved the digital skills and skills for teachers to collaborate not only with parents but also students – in setting the target of the lesson or topic and fair assessment of the performance of their classmates.

Parents acknowledge that the Qridi tool is essential in evaluating the educational achievements of their children, answering many simple questions, and increasing parents' confidence in the quality of teacher work, evaluations, student assessment, and a modern learning process in general.

Both teachers and parents point out that communication and collaboration using the Qridi program requires less time, there are certain questions to discuss with teachers, and communication is more open and transparent.

There are several more tools like the Qridi program to help teachers to communicate and collaborate with parents that can help in their everyday work and place collaboration at a new- higher level. Comparing alternative programs to the Qridi using SWOT analysis, the Strengths of the Qridi program are its user-friendly interface, implementation of evaluation practice as everyday educational development, and effective and easy communication and collaboration with parents; Weakness – the program can be started to use for children from 5 years, preschool phase is missing,

Opportunities – wide range of development, starting from interactive materials, connecting different subjects, and Threats are different more educational programs with comparable structure and functions.

Recommendations for teachers and parents is to look at the educational process from one perspective – children and their educational objectives. The Qridi program might be a good and easy help to start a trustful, open conversation, using data from children's academic achievements. Every step to these academic achievements can be analyzed, it is best possible to cooperate if every educational partner speaks the same language. More important – the educational process can be done at school and continued at home. Qridi is an excellent tool for better cooperation and collaboration for teachers and parents that helps to move this cooperation to a new level – that is more open, clear, and understandable to every educational partner.

Answering the research question – teachers and parents are satisfied with using the Qridi program, that it is user-friendly, it was easy to start to work with it and that communication for both parties has improved.

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DATA OF STUDENTS' SKILLS AND ACADEMIC ACHIEVEMENT ASSESSED DURING COVID-19 INDICATE RISKS FOR INEQUALITY

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ABSTRACT

International research reports have indicated inequality risks for students' future success due to COVID-19 pandemic, including risk of dropping out of school and risk of learning losses. Group differences in students' skills and opportunities have been revealed way before pandemic, and the pandemic itself can contribute as a facilitating factor for the increase of these differences. In this research 952 students in the 9th grade were assessed during distance learning in Latvia. Data were analysed regarding group differences, as well as students' decisions about continuing education after the primary school. Results show that: 1) Students who had participated in individual face-to-face consultations showed lower verbal and nonverbal reasoning skills, lower grades in four previous study semesters, and had parents with lower education compared to students who had not participated in individual consultations, indicating the importance for such individual support mechanisms for the students facing difficulties; 2) Students with lower parental education level had lower average grades in four previous semesters, lower verbal reasoning and nonverbal reasoning abilities, self-management and problem-solving skills; 3) Girls had higher average grades in all four consecutive semesters and higher problem-solving and self-management skills, compared to boys; 4) Pandemic affected students' decisions about continuing studies after the 9th grade mostly for those students who had thought about changing the school or the location of school.

Keywords: *distance learning, inequality, continuing education, skills, grades, gender*

Introduction

Soon after the global COVID-19 pandemic started several reports were issued that warned about potential learning losses, inequality risks and even risks of dropping out of school for the vulnerable groups of students (e. g., Azevedo et al., 2020; Kaffenberger, 2021). The pandemic and distance learning might have increased the differences that students had already had before it and might have influenced students' decisions about continuing education. According to UNICEF report (UNICEF Office

of Research, 2018) typical reasons for inequality in education are socio-economic aspects, including parental education, place of living and the school, gender disbalances, and also individual abilities, such as cognitive abilities. Previous research confirms group differences regarding parental education, individual abilities and other factors, such as gender (Duckworth & Seligman, 2006; Goulas and Megalokonomou, 2020; Idris et al., 2020; Kampa et al., 2021). Difficulties in these various domains may further increase risks of worse life outcomes, such as poorer education and work options. Research also highlights the factors that are associated to dropping out of school: both socioeconomic factors, individual factors, as well as effectiveness of teaching methodologies (Barragán-Moreno & Lozano-Galindo, 2022).

Research on educational and psychological aspects during the pandemic has been focused on various aspects, such as students' individual attitudes, well-being and academic outcomes (e. g., Hacatrjana, 2022; Scott et al., 2021), as well as risks of not returning to schools after the pandemic (UNESCO, 2020), and these results indicate that there were variations in how students and education systems (Barron Rodriguez et al., 2021; Lindblad et al., 2021; Morgan, 2022) dealt with distance learning. For some students it was easier to deal with distance learning than for others (Hacatrjana, 2021a). Data on experiences of distance learning situation at the very beginning of the pandemic in Latvia showed that in general the satisfaction with the education process was acceptable, in the meantime also indicating several challenges for all included parties (e. g., difficulties to learn independently for the students or lack of felt support) (Ministry of Education and Science of Latvia, 2020). In Latvia, students generally have rated their available technologies as sufficient to carry out distance learning (Hacatrjana, 2021a), but it must be noted that they were using various devices for studying, including laptops, tablet computers and even smartphones, which also had to be shared with other family members that might have affected the effectiveness of studying and their attitude to study. To conclude, it is important to further investigate how the experiences during the pandemic affected students' decisions about continuing their education and thus maintaining further opportunities for studying and getting better jobs in the future.

As mentioned before, distance learning might have left a larger influence on some groups of students, compared to others. For students in the final grades of basic or secondary education (9th or 12th grades in Latvia, respectively) the situation was particularly intense because they usually had to take the state exams at this stage of education. However, due to the pandemic there were changes in how these exams were organized, for example, in the spring of 2021 the usual exams after the 9th grade

were replaced with "diagnostic tests" in the same subjects (mandatory for Mathematics and Latvian, optional for other subjects) (Cabinet of Ministers Republic of Latvia, 2021). It is important to note that in Latvia's education system students finish basic (also called "primary") school at the end of the 9th grade (Cabinet of Ministers Republic of Latvia, 1998). They can then choose further options for studying, for example, at general education secondary schools (also called "high-schools"), gymnasiums with at least two profiles of specialization (e. g., focusing on humanities or exact sciences), and vocational schools with an option to also learn a profession. Choosing the most appropriate track or type of school is important at this stage of students' life as it may affect their further work or study opportunities. Also, to be omitted to gymnasiums or other schools, students often have to take extra entrance exams, thus showing their skills, motivation and persistence. That is the reason why the end of the 9th grade can be viewed as a turning point for some students and is overall an important stage in students' lives, therefore it is especially important to study experiences of these students.

Based on the previously mentioned factors that relate to inequality risks in education (UNICEF Office of Research, 2018), the current research included the assessments of students' skills and cognitive abilities, grades, parental education level and other aspects that could potentially indicate differences, and assessments of the experiences of students that may have led to changes in decisions about continuing school. The current research focuses on finding inequality risks of students based on their assessment and exploring how the pandemic affected students' decisions about continuing education. Thus, the two main research questions are: 1) What are the group differences found in the data of students that may indicate risks for further inequality? 2) How were students' decisions and attitudes about continuing school after the 9th grade affected by the pandemic?

Methodology

Sample

Students in the 9th grade (at the end of school year 2020/2021) participated in the study, $n = 952$, 502 girls and 435 boys (several participants had not indicated gender or age), aged from 14 to 17 years ($M = 15.38$; $SD = 0.54$), from various public schools in all regions in Latvia.

Materials

1. *Problem-solving skills* were evaluated with a self-assessment questionnaire with 10 items on two scales: 1) Solution development and evaluation (6 items) and 2) Flexibility to change solution (4 items), originally

showing internal consistency of respectively $\alpha = 0.79$ and $\alpha = 0.71$ (Hacatrjana, 2021b). Each item had to be rated on a scale from "Never" to "Always" (0 to 5 points) based on how often the student performed the mentioned activity (item examples: "When solving a situation or doing a task, I change my solution if I understand that it is not appropriate", "When I have finished a task, I think about what worked well and what didn't.").

2. *Self-management questionnaire* was used to assess students' skills to organize themselves and their daily learning. It consists of six items (for example, "I write down all the tasks in a certain place"), that originally showed good internal consistency of $\alpha = 0.77$. Each item had to be rated on a scale from "Never" to "Always" (0 to 5 points) (Hacatrjana, 2021b).

3. *Nonverbal reasoning abilities* were measured with a short version (10 items) of Sandia Matrices test (see Harris et al., 2020) using figural matrices tasks where the individual has to understand the patterns existing in a set of figures and choose what kind of symbol continues the pattern, internal consistency was $\alpha = 0.72$.

4. *Verbal reasoning abilities* were measured with a short verbal analogies test (10 items) (Kretzschmar, Hacatrjana and Rascevska, 2017). In the test one pair of words and the first word of the second pair is given (for example, "snow – to ski" and "ice – …") and the participant must understand the relation between the first pair to give an answer to the second pair. Internal consistency of the test was $\alpha = 0.81$.

5. *Academic achievement* was measured by gathering the average grades of students in the last four semesters (autumn 2019 to spring 2021). Thus, it was possible to analyse the grades longitudinally in retrospective, including the period before the pandemic to serve as a baseline measurement. Grades can vary from 1 to 10 (maximum grade) in Latvia.

6. Several additional questions were asked about the subjective experience during distance learning: a) to rate their perceived difficulty to deal with the distance learning situation, b) to rate if the technological means available to them were sufficient for studying remotely, c) to answer if they had been to an individual consultation with a teacher to tackle their difficulties.

7. Demographic questions were asked to students: gender, age, the language they mostly spoke at home, the level of parental education (from "1-Finished primary school" to "6-Doctoral degree").

8. To gather students' attitudes and experiences about how distance learning and pandemic affected their decisions about their further studies after the primary school a) an open-ended question was asked about their decisions and b) they were asked to retrospectively indicate

quantitatively to what extent they had decided to continue their education further after the primary school a year ago and at the time of the assessment.

Procedure

Data was collected directly from students (with questionnaires) and from the schools (by gathering average grades of students). Students completed all the questionnaires online using testing platform www.exploro.lv during a specially organized online lesson for each class. All data were collected in an anonymized form using an individual code for each student. At the beginning of the project an informative letter was sent to parents to allow or disallow their child's participation in the study.

Results

The first aim of the study was to look for group differences that might indicate inequality risks. The second aim was to assess how the pandemic and distance learning was related to students' decisions about their further education after the 9th grade. Both quantitative and qualitative analysis methods were used to analyse the data. First, the analysis of group differences is presented.

Group differences in the data of students indicating risks of inequality

First, descriptive statistics were calculated for the indicators measured in the study (see Table 1). In addition, Kolmogorov-Smirnov indicator showed that distribution was not normal for any of the measurements ($p < 0.05$).

Table 1. Descriptive statistics of the measured indicators

	N	Min	Max	*M*	*SD*
Education level of parents	908	1.00	6.00	3.39	1.23
I have felt difficulties to deal with studies during distance learning	952	0.00	5.00	3.01	1.29
Technologies available to me are sufficient to study remotely	952	0.00	5.00	4.30	1.00
Nonverbal reasoning	764	0.00	10.00	4.76	2.65
Verbal reasoning	868	0.00	10.00	5.34	2.92
Self-management	931	1.00	30.00	16.38	6.07
Solution development and evaluation (problem solving)	937	0.00	30.00	15.08	5.13
Flexibility to change solution (problem solving)	937	0.00	20.00	12.69	3.45

Further, differences between groups were assessed between students who had participated in an individual consultation or had not participated in one, using the Mann-Whitney criterion (see Table 2). Participation in such consultations indicates that a student had accumulated difficulties in dealing with study tasks and applied for extra help.

Table 2. Differences between students who had participated or had not participated in individual consultations

	Students who did not attend consultations		Students who attended consultations		
	M	SD	M	SD	U
Education level of parents	3.46	1.23	3.17	1.19	67057.00**
I have felt difficulties to deal with studies during distance learning	2.97	1.31	3.11	1.23	80441.00
Technologies available to me are sufficient to study remotely	4.30	1.00	4.32	1.01	83603.00
Nonverbal reasoning	4.95	2.59	4.12	2.76	42579.00**
Verbal reasoning	5.52	2.87	4.78	3.00	59945.50**
Self-management	16.38	6.09	16.37	6.04	80342.50
Solution development and evaluation (problem solving)	14.91	5.14	15.59	5.09	75224.00
Flexibility to change solution (problem solving)	12.78	3.47	12.42	3.40	76923.50

**$p < 0.01$

As it can be seen in Table 2 results show that students who had participated in individual face-to-face consultations showed lower verbal reasoning skills and nonverbal reasoning skills, had parents with lower education compared to students who had not participated in an individual consultation. In addition, they had statistically significantly lower mean grades in all four previous study semesters (based on a mean score calculated from grades in Latvian, Mathematics and English) ($U = 25265.50$ to $U = 28186.50$, $p < 0.01$ in all cases).

Next, to assess the group differences, based on parental education level, Spearman correlation coefficients were analysed. Results show that parental education level is significantly related to nonverbal reasoning ($r =$

0.16, $p < 0.01$), verbal reasoning ($r = 0.17$, $p < 0.01$), self-management ($r = 0.07$, $p < 0.05$), solution development and evaluation ($r = 0.09$, $p < 0.01$), flexibility to change the solution ($r = 0.21$, $p < 0.01$), and mean grades in four previous study semesters ($r = 0.32$ to $r = 0.35$, $p < 0.01$). It shows negative correlation to student's subjectively felt difficulties during distance learning ($r = –0.10$, $p < 0.01$).

Next, gender differences were calculated using Mann-Witney test and it shows that girls had higher results in verbal reasoning ($U = 84654.00$, $p < 0.01$), self-management ($U = 83398.00$, $p < 0.01$), solution development ($U = 96078.50$, $p < 0.01$), flexibility to change the solution ($U = 88177.00$, $p < 0.01$) and higher grades in all four previous semesters (the highest $U = 37752.50$, $p < 0.01$), however also reporting higher felt difficulties during distance learning ($U = 90194.00$, $p < 0.01$) when compared to boys.

Decisions about continuing education during the pandemic

Next, the second aim of the study was to explore how students' decisions about continuing education after the 9th grade in a traditional face-to-face high school were affected by the pandemic. Both quantitative and qualitative analysis methods were used to answer this research question.

The students' ratings about the extent to which they had thought about continuing to study further at high-school retrospectively one year ago (2020) and at the time of assessment (2021) were compared. Based on Wilcoxon test, students' confidence about continuing studies had dropped ($Z = –3.12$, $p = 0.01$; $M = 2.08$; $SD = 0.89$ "a year ago" and $M = 2.00$; $SD = 0.98$ in 2021). The difference is not large, but it is statistically significant.

Further, qualitative analysis is presented regarding students' experiences and thoughts about continuing school. Content analysis was used to examine how the decisions about further education and continuing their education were affected by the pandemic, based on the views of students themselves and their statements of their unique experience (Shannon & Hsieh, 2005). The initial analysis indicated that the answers express three various views of experience and then they were coded according to these three types of experiences reflected in the students' statements: 1) decisions about studying further were not affected; 2) decisions were slightly affected (or the situation gave some thoughts about ways of learning in general); 3) decisions were highly affected. Several answers were coded as not having the necessary information to conclude about the particular research question. Further these types of students' experiences are presented in detail.

Decisions about further education were not affected by the pandemic

For some students the distance learning and the pandemic did not change anything in their decisions about future education, based on their own self-reflection. It must be noted that a part of students that have stated that their decisions were not changed by the pandemic, had also written that they had previously not even considered studying in another school.

> *I still think of going to traditional high school (with face-to-face learning) after the 9th grade.*
> *I had already decided that after primary school I would continue my studies in high school, and I had not changed my decision. I think that in high school we will be able to study in face-to-face again.*
> *My opinion has not changed. I see more benefits from face-to-face training. First, socialization. Also, in the future I think to work in the workplace with people (where communication is required). Secondly, the opportunity to communicate with teachers immediately (instead of waiting for an answer to a written question).*

Decisions about future studies were slightly affected or the experience had initiated thoughts about learning in general

For another part of the students the distance learning experience gave some thoughts and conclusions about the most appropriate way to study in general. Their ideas about future were either affected to some extent or the pandemic made them rethink or doubt their ideas about future, but not majorly changing their decisions. There is a polarity in the experience of students, as some students realized that distance learning is not suitable for them, or they realized how important and crucial face-to-face learning and socializing is. Whereas some students enjoyed the benefits of studying individually at home and can envision this as their future.

> *Although I am already used to studying distantly, I realize that I can learn a lot of more in person. In the future, I really want to study in face-to-face settings.*
> *I liked distance learning because I can concentrate better to work, there is no noise. I would like to continue to study remotely.*
> *I realized that I needed to plan more and motivate myself to study distantly, but I still want to go to a distance school to be able to work in parallel.*
> *I would like to connect my life with a job where I could work remotely.*

Decisions about further education were highly affected by the pandemic

Some of the students had noted that distance learning and the pandemic itself majorly affected their thoughts and decisions about their future and

their willingness to change the school or to travel to another city during the pandemic. Also, the option to choose vocational education was affected as practical workshops in schools were limited.

> *Due to the pandemic, I am much less motivated to continue studying. I have always wanted to go to school with an arts track, but I did not have the opportunity to go to preparation courses, so this goal now seems impossible. There is less and less hope that I will study where I wanted.*
> *I used to plan to continue my studies in high school in Riga [the capital of Latvia], but after the pandemic and distance learning I decided that I would stay in my current school.*

We can conclude that not all students felt that their decisions had been affected by the pandemic. Mostly, the situation was hard for those students who had previously thought about changing school, for example, going to a larger city or to a school with a specific track. On the contrary, the decisions were less affected for those who had not thought about changing school or going to another city.

Discussion

Due to COVID-19 pandemic many students worldwide experienced disruptions in their education, bringing new challenges to deal with, and also increasing inequality among different groups of students and options available to them (Azevedo et al., 2020, Kaffenberger, 2021). The pandemic highlighted vast differences in students' opportunities provided by parents and schools (e. g., Goulas and Megalokonomou, 2020), and affected their motivation. The current research had two main aims: 1) to explore group differences in 9th grade students' skills and attitudes that indicate risks for inequality, and 2) to assess whether students' decisions about continuing their education were affected by the pandemic based on their own reports.

In respect to the first aim, results clearly indicate that there are major group differences found in the current sample of students from Latvia. For example, there are significant gender differences in the grades in all semesters, favouring girls. Girls also scored higher on self-management and problem-solving assessments indicating a more self-organized and systematic approach to learning individually, that is in line with previous research about girls' grades and self-discipline (e. g., Duckworth & Seligman, 2006), and other skills, for example, collaborative problem-solving (OECD, 2017). This may be one of the reasons of lower male proportion later in higher education (CSB, 2021).

During distance learning period it was allowed for students in Latvia to have individual consultations if they were facing difficulties with learning. Results show that students who had participated in individual face-to-face

consultations showed lower verbal reasoning skills and nonverbal reasoning skills, had parents with lower education compared to students who had not participated in an individual consultation, also they had statistically significantly lower mean grades in all four previous study semesters. The results show that these students had struggled even before the pandemic. Altogether this indicates the importance for such individual support mechanisms for the students in need even in the hard times and distance learning because they clearly performed lower compared to those that did not attend consultations. However, it was interesting that students' self-reported level for available technical means to carry out distance learning was not significantly different, similarly to the results self-assessment measurements of self-management and problem-solving skills. Altogether, the current results confirm previously established role that cognitive abilities play regarding academic achievement (e. g., Hacatrjana, 2022; Kampa et al., 2021). Not tackling the challenges some students have with learning early enough may lead to even larger discrepancies and the students might find it harder to grasp increasingly complex curriculum, leading to risks of dropping out of school. These results support the need for individual support mechanisms that are timely enough to avoid further inequality.

The current research results are also in line with previous research on the importance of the parental education level – another factor that may lead to lack of support, lack of seeing education as valuable for their children, and lack of extra learning opportunities offered to children (e. g., Barron Rodriguez et al., 2021; Delès, 2021; Goulas and Megalokonomou, 2020; Idris, Hussain and Nasir, 2020). This all inevitably may lead to inequality that is based on the child family's socio-economic circumstances. The combination of these aspects – individual abilities of the child and parental factors – is crucial for an effective development of the child's skills (Flores-Mendoza et al., 2021). Lower skills, grades and the felt support leads to lower confidence about their skills and lower motivation to pursue higher educational goals.

In respect to the second aim of the study, it was confirmed statistically that students reported they were less likely to continue learning in a traditional (face-to-face) high school compared to their retrospective thoughts before the pandemic, though the difference was relatively not large, indicating that there was probably a minor portion of students who had considered either other options for education (e. g., distance education) or not continuing it at all. Based on previously issued calculations, Europe countries were not among those with the highest risks for students not to return to school (UNESCO, 2020), altogether giving a promising picture of the situation on Latvia. However, the qualitative analysis of students' statements gives a deeper insight into this issue, showing that the situations and attitudes

varied significantly among students with different aspirations. Generally, it can be concluded that opposing views appear in the answers: a part of students found it easy to learn independently at their own pace at home and they had not experienced major problems with their further plans for studying. Sometimes these plans had been just to continue to study at the same district school and not to change school at all, thus, to keep the *status quo*. But for the other part of the students the distance learning and general restrictions brought significant challenges, for example, they were not able to attend special courses to prepare for a specific entrance exam at a specific gymnasium, or they did not want to go to live and study in another city because of the sense of unsafety during the pandemic. This indicates inequality risks towards students from rural areas or smaller cities. Interestingly, a part of students that have stated that their decisions were not changed by the pandemic, had also written that they had not even considered studying anywhere else after finishing basic school. It confirms that for a large part of students it is typical to stay at the same school after the 9th grade, often without having to take any entrance exams to get into another school. To conclude, students' personal statements provide a crucial insight into the various experiences of students and about how these experiences formed their decisions about continuing their education after the 9th grade and about learning in general.

This research has several limitations. First, it must be noted that self-assessment and retrospective report approach was used for several of the measurements (for example, students had to remember what their opinions about continuing school were a year ago). However, assessment tests were also used, for example, to assess cognitive abilities. In addition, students' grades were gathered in cooperation with schools, thus providing precise data about their academic achievement. Therefore, the researcher tackled the possible issue of validity. Results showed significant differences based on the attendance of individual consultations, however, schools had various approaches to organizing these consultations, so it has to be considered when analysing the results. It is clear that researchers have to continue monitoring students' skills, academic achievement, among other important aspects, to provide science-based conclusions to schools and policy-makers on how to deal with the consequences of the COVID-19 pandemic and distance learning and how to tackle the possible inequalities for students.

Conclusions

The current research shows risks for inequality of students that may leave further consequences in their lives, especially for students with lower parental education and with accumulated difficulties in studying (e. g., lower

grades already before the pandemic and in the previous semesters). Study also revealed gender differences showing higher results for girls that might be explained by self-discipline. Pandemic brought difficulties in learning for some groups of students, and there are risks of discontinuing education as a result. It can be concluded that a part of students needed individual extra support because of difficulties to deal with learning, therefore individual support mechanisms are crucial during such crisis. Students' decisions about their future and continuing school were also affected, and these decisions might have a further effect on their future, for example, if a talented student decided not to go to a specific school to another city because of fear of unsafety. A part of the students tended to stick to the schools where they had already been learning and not to change them. Schools and the education system in general must be flexible in such crisis not to lose talented students, especially from rural areas. This also applies to vocational schools as for some students it might be very important to learn professional skills, but the learning had been disrupted in the pandemic.

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LESSON PLANNING AND ORGANISING STRATEGIES FOR MAINTAINING STUDENTS' FOCUS DURING COMPUTER SCIENCE LESSONS

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ABSTRACT

The first part of the research was conducted in November and December of 2020 as described in the author's Term Paper "*LESSON PLANNING AND ORGANISING STRATEGIES FOR MAINTAINING STUDENTS' FOCUS DURING COMPUTER SCIENCE LESSONS IN FORM 4*".

The aim of this Paper is to expand upon the scope of the research, to evaluate and discuss the developed recommendations on how various lesson planning and organising strategies can help to maintain students' focus.

The second part of the empirical study described in this Paper included a questionnaire, an interview with two Computer Science teachers from general education schools and a Computer Science teacher from an international school.

It was found that there are several factors that have an impact on the focus of the students. It was concluded that the teacher must keep up with what the students are interested in, and students must be inspired to learn instead of having to learn mainly because they must achieve certain grades. However, since teachers may face several challenges when it comes to implementing different strategies, cooperation with school leaders, school administration and parents is crucial. From the second part of the study, it was found that it is significant that teachers are not micromanaged, that there is a set curriculum teachers and students can follow. Positive communication and trust in the whole school community is important when it comes setting up students for academic success. Whether teachers can implement different recommendations for keeping the students' focus depends also on outside factors that depend on the school, therefore, it is important for teachers, school leadership, administration, and parents to all work together.

Keywords: Computer Science lessons, extra-curricular programming activity, lesson planning and organising strategies, education system, curriculum

Introduction

All students should be provided with opportunities to achieve academic success. Overall, students learn less if they do not focus during the lesson but keeping the focus of the students can be challenging. Additionally,

the classroom environment and other factors that the teacher cannot control can negatively impact the focus of the students. However, achieving academic success requires focus (McQuown, 2011). Changes in the new educational standard allow schools to teach Computer Science from Form 1, but for the most part Computer Science in Forms 1 to 3 is integrated into other subjects, however, in the academic year of 2020 and 2021 in Form 4 Computer Science was taught as a separate subject for the first time (Skola2030, 2019). There are many reasons why students may struggle to remain focused during the lessons, but there are several recommendations teachers can apply in lessons to keep the focus of the students.

The author of this Paper investigated how various lesson planning and organising strategies can help to maintain students' focus during Computer Science lessons in Form 4 in her University of Latvia Term Paper "*LESSON PLANNING AND ORGANISING STRATEGIES FOR MAINTAINING STUDENTS' FOCUS DURING COMPUTER SCIENCE LESSONS IN FORM 4*" (Holberga, 2021). The Term Paper was presented in the University of Latvia, Students' Council Student Scientific Conference in November of 2021, additionally, the article of the Term Paper is published in the Conference's collection of articles. After the Students' Scientific Conference, the author continued to expand upon the research, to evaluate the usefulness of the recommendations created for her University of Latvia Term Paper. This article aims to evaluate and discuss the created recommendations.

The research method for the Term Paper had included a case study that involved the author's self-evaluation and reflections of her Computer Science lessons and Programming extra-curricular activity, additionally, an interview with a Computer Science and extra-curricular programming teacher was conducted (Holberga, 2021). It was concluded that the environment, available technology, and materials has a huge influence on the quality of teaching and learning (Holberga, 2021). Many different factors that influence whether students will be able to focus during Computer Science lessons, but not all of these factors can be influenced by the teacher (Holberga, 2021). There are many recommendations that a teacher can implement in the lesson, so the students remain focused.

According to the following authors: Oganisjana (2012), Balsons (1996), Dameron (2018), Banks (2014), Gerschler (2012), Voterhauzs (1999), Goundar, (2014), Reeves (2015), Gottschalk (2019), for students to focus during the lesson:

- The teacher must be able to adapt and improvise, as well as be enthusiastic about the subject, know how to use their voice and silence most effectively, use different methods, provide and ask for feedback,
- The material and tasks during the lessons should be interactive, interesting, diverse, and divided into smaller steps,

- The students must be active, motivated and follow the classroom rules, feel safe, as well as be able to connect the new material to what was learnt previously,
- The physical environment must be comfortable, easy to move around in, and set up according to ergonomic guidelines, also, the students should be able to see and hear the teacher.

Undoubtedly, there are many guides and tips on how the teacher can plan and organise the lesson to keep the students focused. However, due to several different factors these recommendations are not always implemented during the lessons or at school. Evaluating the implementation of recommendations is significant because to improve the quality of education one must not only try to implement or create recommendations, but also evaluate the effectiveness of these recommendations, whether the guidelines the author created can be applied to a wider range of teachers and subjects. There are several recommendations and advice on what teachers must do, but it is crucial that these recommendations and advice receive feedback. Therefore, one of the goals of this Paper is to evaluate whether other teachers are able to implement the author's recommendations.

Methodology

The research for this Paper was conducted in December of 2021 and January 2022. Data collection methods included a questionnaire and interviews.

Hence, the questionnaire was sent out to education students, teachers and education students who work as teachers. The questionnaire consisted of three parts. In the first part the respondents were asked basic questions about themselves. In the second part respondents evaluated how often they encountered the challenges listed below. In the third part the respondents evaluated how successfully they were able to implement the recommendations. The aim of the questionnaire was to expand research upon the challenges that teachers face when it comes to keeping the students focused and to evaluate whether teachers can implement the recommendations on how to keep the students focused during the lessons.

Firstly, the respondents had to tick whether they are studying in one of the teacher study programmes, working as a teacher or both. The respondents had to check their age group: 18–25 years, 25–29 years, 30–39 years, 40–49 years, 50–59 years, 60 years and more. Additionally, the respondents chose which subjects they are studying to teach or teach at a school: Latvian, English, Maths, Psychology, Design and technology, Art, Music, Biology, Chemistry, Physics, Geography, Physical Education, Health studies, Culturology, Social studies, History or other. Also, which classes

the respondent teach and their work experience (if applicable). The author took into consideration the basic information about the respondents when analysing their answers.

Moreover, the respondents had to evaluate how often they have encountered the listed problems during lessons or how often they think teachers encounter these problems. The respondents evaluated the statements on a Likert scale of 4 to 1, 4 meaning "nearly in every lesson" and 1 meaning "never". The statements were based on problems that the author and the interviewee from the first part of the study encountered when teaching. The aim was to determine how common are these challenges:

1. the tiring of vocal cords,
2. lack of learning material,
3. the physical environment of the classroom does not follow ergonomic guidelines,
4. there is not enough time to receive feedback from the students about the lesson during the lesson,
5. explaining instructions to students individually takes up a lot of time,
6. the students do not take the teacher seriously because the teacher is young,
7. the students do not follow behaviour rules during the lessons,
8. a lack of technology or technical support in the classroom,
9. not enough time to teach all the mandatory content (Holberga, 2021).

Additionally, respondents could write down any other challenges that they had encountered. The challenges respondents had to evaluate were based on challenges faced by the author and interviewee from the first part of the research, the aim of the questionnaire was to investigate how common are these problems amongst other Computer Science teachers and teachers of other subjects.

Furthermore, the respondents had to evaluate whether they are able to implement these recommendations into their lessons or do they think that teachers are able to implement these recommendations. The respondents evaluated the statements on a Likert scale of 4 to 1, 4 meaning "implemented in nearly every lesson" and 1 meaning "fail to implement". The respondents evaluated whether they are able to or whether they think teachers are able to:

1. stay up to date with the interests of the students and adapt the learning material to the students' interests,
2. at the beginning of the semester explain the classroom rules, behaviour rules to the students and stick to them,
3. explain the instructions to the students at the beginning of the lesson before students start working,

4. teach students time-management skills,
5. use a "motivation system" such as giving points to students and then rewarding them accordingly to the points,
6. using the voice effectively to avoid the tiring of vocal cords,
7. include elements of gamification such as points, competition in the learning process (Holberga 2021).

Also, the respondents could write down any other recommendations that they implement during the lessons and were thanked for completing the questionnaire. The recommendations the respondents had to evaluate were based on the research the author had done for her Term Paper "*LESSON PLANNING AND ORGANISING STRATEGIES FOR MAINTAINING STUDENTS' FOCUS DURING COMPUTER SCIENCE LESSONS IN FORM 4*". The aim was to acquire feedback on the recommendations.

The interviews were conducted in January 2022. The aim was to learn about the teachers' experience at school, how teachers are supported and deal with challenges. Additionally, the author aimed to discuss previous findings and to learn what support teachers need overall, when encountering the challenges rated as the most common in the questionnaire. Also, the interviews aimed to gather feedback on the rating of the recommendations. The interviewees included two general education Computer Science school teachers and one Computer Science teacher from an international school.

Overall, the interviewees were asked:
1. what forms and subjects they teach,
2. for how long they have worked as teachers,
3. what challenges they have faced during lessons,
4. how they manage to overcome these challenges,
5. for recommendations on the challenges that teachers encountered the most often based on the questionnaire.

The author discussed the ratings of challenges and recommendations from the questionnaire to receive further feedback from Computer Science teachers with different teaching experiences.

Results

The questionnaire was completed by 55 respondents. 40% of the respondents work as teachers, 26% are studying to become teachers, 34% study and work as teachers.

For all the challenges and recommendations, the author coded the answers from 1 to 4, and calculated the average rating. Those who work as teachers rated that the most common problems that they encounter as: the tiring of vocal cords (2.77), a lack of time to receive feedback from the students about the lesson (2.73), and individually explaining instructions

to students taking up a lot of time (2.73). Those who study and work as teachers rated the tiring of vocal cords (2.9) and the students not taking the teacher seriously because the teacher is young (2.7) the highest. With an average of 2.63 were rated the classroom not being set up according to ergonomic guidelines, and a lack of time to receive feedback from the students about the lesson. However, those who were only studying as teachers rated that they think individually explaining instructions to students takes up a lot of time (3.07), but with a 3.0 the following was rated: the tiring of vocal cords, the classroom not being set up according to ergonomic guidelines and a lack of time to receive feedback from the students about the lesson. A few respondents listed other challenges such as: a lack of technology, lack of positive cooperation with parents, students taking time off from school due to COVID-19.

Those who work as teachers rated that teaching students time management skills (2.1) and using a "motivation system" (1.7) were implemented the least during lessons, but using the voice effectively (2.77) and explaining instructions to all of the students at the beginning of the lesson (3.05) were implemented the most often. Those who study and work as teachers rated effectively using the voice (2.2) as being implemented the least, but at the beginning of the semester explaining the classroom rules and sticking to them (3.1) was rated as being implemented the most often. Those who study as teachers rated that they think teachers are usually able to at the beginning of the semester explaining the classroom rules and stick to them (2.57), and to explain instructions to all the students at the beginning of the lesson (2.43). However, teachers usually struggle to teach students time management skills (1.86) and effectively use their voice (1.93).

A few participants listed other recommendations not mentioned in the questionnaire such as: having students help lead the lessons, using humour, making lessons fun, differentiating activities.

Nevertheless, it is also important to look at the differences in ratings between the education students, teachers and education students who also work as teachers. Figure number 1 shows the differences between how the ratings of the encountered challenges differ. The challenge numbers correspond with the numbered challenges described in Methodology.

The values 1.0 until 3.5 were chosen for the graph to clearly illustrate the differences. Due to falling in the middle and crossing the other lines, the yellow line showing the rating of students who are also teachers does not have numerical values for each point. The biggest difference is between how the groups rated the 6th challenge in the questionnaire – the students not taking the teacher seriously due to the teacher possibly being young. Overall, this is a challenge encountered by young teachers. The students rated explaining instructions to students individually as the greatest

challenge, while teachers and education students who work as teachers rated the tiring of vocal cords as the one they encounter the most.
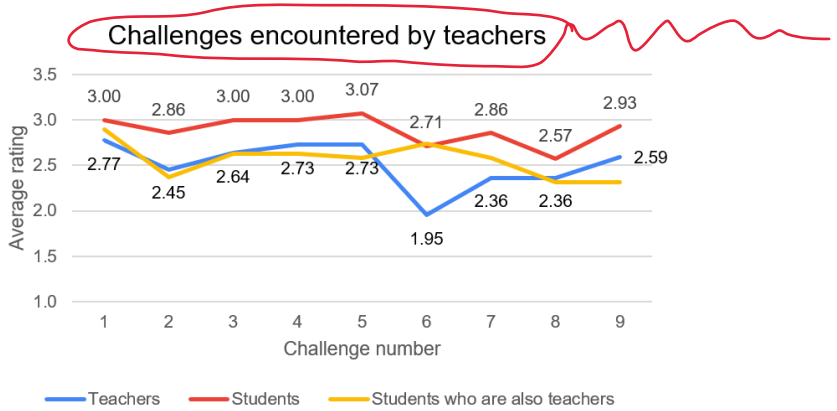
Figure 1. Challenges encountered by teachers

Moreover, a few differences can be seen when comparing the evaluation of recommendation implementations in Figure 2. The recommendation numbers correspond with the numbered challenges described in Methodology.
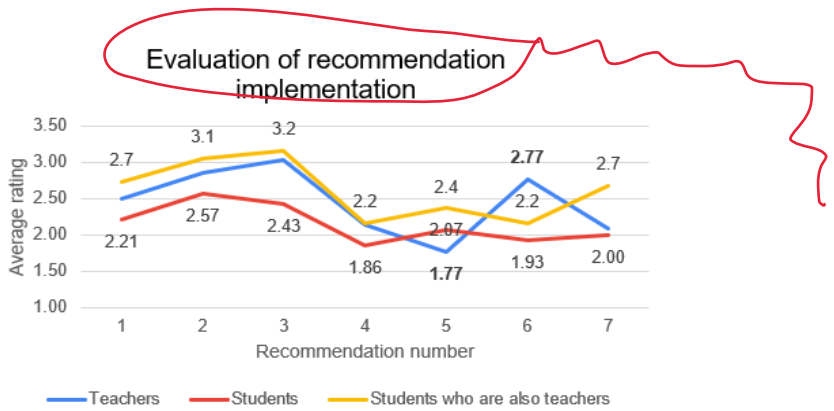
Figure 2. Evaluation of recommendation implementation

Also, the values 1.0 until 3.5 were chosen to clearly illustrate the differences. Due to falling in the middle and crossing the other lines, the blue line showing the rating of teachers does not have all numerical values attached. Overall, students rated that they think that teachers less often

can implement these recommendations. Teachers rated that they nearly never use a motivation system (1.77), while students who are also teachers and education students rated this recommendation higher. Students who are also teachers rated that they nearly always are able to explain the instructions to the students before they start work (3.2).

Also, the author interviewed three Computer Science teachers. The aim of the interviews was to learn about the teachers' experience at school, how teachers are supported and deal with challenges. Since there are several factors that a teacher cannot control, support is crucial.

Firstly, Teacher X was interviewed, the aim is to learn about the teacher's experience at an international school, how teachers are supported and deal with challenges at an international school. Teacher X had taught maths for 7 years in the United States, but at the time of the interview had been teaching Computer Science for the International General Certificate of Secondary Education (IGCSE) in forms 9 and 10, and the International Baccalaureate (IB) in forms 11 and 12 at an international school for one year. The teacher stated that the main difference is that IGCSE and the IB programme are each a two-year curriculum where everything is planned. Computer science is diverse, one must be knowledgeable in those fields to teach them. The respondent explained that at the international school students bring their own devices, but back in the States the computers were provided by the school due to being in a low-income area and were admin locked. Due to being a Computer Science teacher the respondent had to also teach Maths. When asked what challenges the respondent has encountered when teaching Computer Science, the respondent explained that during distance learning due to COVID-19 some colleagues struggled due to a lack of digital skills. Teacher X faced challenges while teaching programming – how to teach it online and how to make it easier and interesting for students. When asked "What new challenges do you think teachers face now due to the COVID-19 pandemic?", the teacher stated that when one is used to teaching in a room in person one must get used to teaching online, but Computer Science can be taught online as well. The teacher must understand the students, link the learning material to the interests of the students.

Also, the author asked: "From my questionnaire it can be concluded that very common challenges include: the tiring of vocal cords, not having enough time to ask for feedback from the students for the lessons, explaining instructions individually to students takes a lot of time." Teacher X commented that it is hard to motivate the students, but one must remember that a lesson is not a lecture, students need to interact with each other, students can also be teachers, explain in their own way. The author inquired: "There are several things that teachers can do such as explain the

classroom rules to students, explain instructions at the very beginning, but what do you think prevents teachers from applying the recommendations in the classroom? What hinders the teacher's ability to deal with different challenges and problems in the classroom? Do you manage to apply all the tips and tricks that you have been taught?" It must be noted that the international school has small classes, the smallest having 4 students and the biggest having 13 students, the students are more motivated and get to choose classes, are not pushed to be there. The teacher must learn from others, if the teacher does not have time for feedback the teacher still must be observant to figure out what works better during the lessons. Unfortunately, due to be used to playing video games students do not read instructions. Google Classroom can be used, it is structured and easy to read. It is beneficial for the teacher to have a routine. The respondent commented that students who come from lower socioeconomic backgrounds experience more stress. Overall, the respondent explained that there are outside factors that prevent the teacher from implementing different recommendations in the classroom.

Additionally, the author questioned: "How can the school director, administration support teachers? How can the parents of the students support teachers?" Teacher X stated that in the international school parents have a lot of influence, have the support of the people in the charge, trust the teacher, when the teacher need help, they can ask. Also, the teachers are not micromanaged, the school leadership realize that the teacher has experience so he or she knows what should be done. Also, short classes and short breaks are helpful for the teacher to get everything ready. The situation at the international school is unique – the motivated students are the majority.

The author wished to learn: "From my questionnaire there are things that teachers might not manage to do – teach students time management skills, give points to motivate students. Do you manage to do this in your lessons?". The teacher responded that having the course structured is helpful. This also helps students develop time-management skills as the course structure has all the dates on there, IB has an internal assessment, the teacher must tell the students due dates and give time to work on it. It is also important for students to be reminded of deadlines. Unfortunately, grading papers takes up a lot of time. The respondent commented that Maths and Computer Science are both systems, but systems can be taught like games.

The aim of the interview with Teacher Y and Teacher Z was to understand the challenges teachers face and what support is needed. Both teachers were interviewed together due to them being married. Both teachers work at general education schools. Teacher Y teaches forms 7,8 and 10, has led

an extra-curricular activity for two years and worked at a school for 6. Teacher Z teaches Computer Science to forms 4 through 8 and form 11, was a substitute teacher for a year and has been teaching for three years. Teacher Y stated that they encountered the following challenges: students struggling to follow classroom rules and safety rules for the COVID-19 pandemic. Teachers may struggle to prepare if suddenly their class must be taught online. The interviewees commented that they feel like male teachers are respected more in the classroom. The interviewees advise teachers to remain calm when encountering different challenges.

Moreover, when the author asked about what challenges in their opinion teachers faced due to the COVID-19 pandemic the interviewees agreed that it was getting students to follow COVID-19 safety guidelines. The author asked: "How can the school's leadership and administration support teachers?" Teacher Y answered that the colleagues who were trusted, were the easiest to turn to. Trust between colleagues is very important. The management had made it mandatory to fill in a questionnaire about possible improvements, what support they need. Teacher Z commented that the administration acknowledging and providing positive feedback for the teacher is helpful.

Additionally, it was inquired: "How can the parents of the students support the teachers? How can parents be motivated to support teachers?". Teacher Z stated that the teachers should not be micromanaged and as professionals be left to do their job. The parents providing positive feedback is also important. Teacher Y shared that is important to communicate with the parents so there are no misunderstandings. If the parents of the class are able to talk, they can talk to each other and to the teacher, if the parent is calm about the school environment, then the relationship with the parents is better. For example, when there were parents' evenings, teachers sat in the school, unfortunately it was unpaid time, but on the other hand this was the opportunity to come talk with the teachers for the parents. Lack of positive communication is an issue.

Furthermore, the author also asked: "There is several suggestions that teachers can follow to motivate students to focus on their lessons, which do you think are preventing teachers from implementing recommendations to keep their attention in their lessons? From the author's questionnaire things that teachers do not manage to do – teach students time management skills, give points to motivate students. Do you manage to do this in your lessons? How can students be taught time management skills and be motivated?". Teacher Y shared that it is a lot of work. Teacher Z commented that the teacher must create the specific requirements, divide the points and allow students to start with the easiest. If the teacher will be calm and remind the students, they will also be able to complete everything. Students

must be aware of the course requirements and deadlines. To overcome the strain of vocal cords the teacher can for example clap her hands until students pay attention. Students will follow the classroom rules if they respect the teacher, otherwise it is difficult for students to act appropriately in the lesson if for example they misbehaved in the previous one. Teacher Z recommends if students write, they do not speak, they make notes in the computer to remember something they write down, for example, they describe the drawing tools in the program, etc. If needed the teacher can use a microphone. Teacher Z stated that the first year was difficult because he experienced voice strain. The teacher must take breaks – use free time in-between lessons to rest. Perhaps, a legally paid rest day or bonus would help the teachers not burn out.

Discussion

Seemingly the results depend on the individual situation of the teacher – the subject they teach, their teaching experience, the school environment itself. Overall, it is important to consider the comparison of the answers provided by those who work at school and those who do not, as recommendations are not always developed by those who work at school. There could be several reasons why the ratings differ in the questionnaire. It is possible that a part of the respondents has not attempted to implement the recommendations in the lessons. Whether the teacher is taken seriously by the students seemingly does not only depend on their age. Perhaps, smaller groups of students are easier to manage. From the questionnaire and interview it can be concluded that those who do not work at schools, do not assume that the straining of the vocal cords is a prevalent challenge faced by not only new teachers. Perhaps, students who are also teachers, rated that they are able to explain instructions nearly always at the beginning of the lesson due to their time management skills. Possibly, younger teachers and education students attempt to implement and assume teachers implement a motivation system, because using a motivation system may require elements of gamification which is relatively new. The way the students rated the recommendations were perhaps based on their own experience at school and perception of teaching. It is also important to investigate the assumptions of those who do not work at school, to discover the differences between perception, opinion, and reality. When creating recommendations, it is significant that the opinion and experience of teachers is taken into consideration.

Due to the interviews taking place in 2021 and 2022 several challenges teachers faced were related to COVID-19. The interviewees mentioned that a lack positive communication between the parents and teachers can lead

to problems. Also, the teacher should not be micromanaged. This could lead to stress for the teacher and other negative feelings, which in turn could negatively impact their work. All interviewees also stated the importance of a set curriculum, deadlines and that it is important to remind the students of these deadlines. The interviews highlight the different effects different school systems and policies have. The type of school can determine which recommendations teachers are able to implement in their lessons. Teachers who teach small classes or groups may encounter less challenges than those who teach bigger classes. However, in some subjects even though the class usually is split in two, due to a lack of teachers this is not always possible. Teachers may struggle to overcome challenges due to the number of students in the classroom. Also, teachers may experience more voice strain if there are more students in the class. It is important for the teachers to understand their students and remember that a lesson is not the same as a lecture. Since there is not always enough time to receive feedback, it is important that the teacher is observant of how the students are feeling and acting in the lesson. However, there are also factors that the teacher does not really control. Having a set curriculum will allow the teacher to manage and plan their time, which in turn will also help students develop time management skills. Having small classes allows the teacher to pay more attention to each student.

Overall, the results of the questionnaire and interviews show that there are common challenges that teachers face and similar reasons why different recommendations might not be implemented, but not all of them can be impacted by the teacher. That is why it is crucial that the school leadership and administration investigate the problems teachers encounter and how can teachers be supported.

Conclusion

From the second part of the study, it can be concluded that it is crucial that school leadership, administration and parents support teachers. The school administration and leadership must show interest in what the teacher is doing and show appreciation for the teachers' work. Positive communication is very important. The teacher should not be micromanaged by the school or parents. The parents should trust the teacher. There should be a planned-out curriculum with clear deadlines and criteria. Additionally, teachers must learn and use different strategies to rest one's voice during lessons. Having a set curriculum and small classes alleviates the workload teacher must do outside the classroom. The teacher must understand the students' needs and wants and be observant. Also, the school's leadership and administration must make the teacher feel

appreciated. Positive communication in the workplace and with parents is also crucial, the teacher should be able to ask for help. Also, parents should trust the teacher. For the school leadership, administration, and parents it is important to not micromanage the teacher. From both parts of the study, it can be concluded that the school as a community should focus on building trust not only between the students and teacher, but also between the teachers and parents, and school administration to ensure the quality of education students receive.

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GAMIFICATION ELEMENTS IN ENGLISH LESSONS TO ENCOURAGE YOUNG LEARNERS' COMMUNICATION IN A FOREIGN LANGUAGE

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ABSTRACT

Communication is a part of people's lives. Speaking with each other is one of the most general ways of communication. If in one's native language speaking skills are acquired naturally in the due course of a person's development, in a foreign language speaking has to be learnt in a more purposeful manner. Furthermore, it has to be noted that not always speaking means communication as the latter entails its specific strategies. Therefore, people, who find communication problematic in their native language, may look upon communication in a foreign language as a challenge. It is because besides personality traits and communication strategies, people have to know vocabulary, pronunciation and grammar of a foreign language. The authors of the present study being involved in teaching English as a foreign language and its methodology are of the opinion that when young learners start learning a foreign language, teachers are the ones who help pupils get ready for speaking and communication, doing it in a way that is appealing and motivating for pupils. Taking into account characteristics of primary school pupils and recent trends in education, the aim of the study is to explore how pupils of Grade 3 can be encouraged to speak in English if gamification elements are incorporated in speaking activities. Research method was a case study (a research sample – 16 pupils 9 to 10 years old); data was collected using teacher observation of the lesson routine. The main findings show that gamification elements incorporated in speaking activities encouraged the pupils to speak up in English boosting their self-confidence. A scoreboard, points, badges and reward as gamification elements used in the particular study helped the teacher attract the pupils' attention and they used the chance given by the teacher to communicate in English.

Keywords: Communication, speaking, teaching and learning English as a foreign language, gamification elements, young learners.

Introduction

Speaking is a complicated skill to acquire when learning foreign languages. Speaking is knowing and applying vocabulary, its meaning and

pronunciation. It is also about knowing and using word and sentence level grammar. Moreover, it includes communication skills with other people (Council of Europe, 2018). Besides the language competence, speaking is about culture and psychology of a human being. For example, a person may be an introvert who does not prefer speaking or an extrovert who likes being involved in spoken interaction. Consequently, willingness and readiness to speak in a foreign language may appear at different times for different people. Communication being challenging in a person's mother tongue, can be even more problematic in a foreign language.

Teachers as facilitators of pupils' learning are responsible for establishing rapport and creating safe atmosphere for them to use a foreign language in lessons. One way to make primary school English as a foreign language (EFL) lessons friendly and encouraging is playing games. In the 21st century, a variation of playing conventional educational games is gamification as it raises pupils' motivation and interest in the lesson without playing an actual game (Altuntas, 2020; Dreimane, 2019). Furthermore, it turns the whole learning process into a game (How to Succeed in ..., 2018). Consequently, the aim of the present study is to explore how pupils of Grade 3 can be encouraged to speak in English if gamification elements are incorporated in speaking activities.

According to the State Basic Education Standard (2018), at the end of Grade 3 primary school pupils in Latvia have to reach the foreign language level A1 and be ready to continue their work towards the level A2. The Model Basic Education Programme (2018) envisages that 3rd graders should be competent to:

- apply communication strategies to clarify necessary information;
- talk about themselves, the family and friends using simple statements;
- confirm what they have understood;
- express their attitude;
- show agreement and disagreement;
- recognise and apply simple everyday phrases (for greeting, showing gratitude, etc.);
- ask simple questions;
- participate in simple discussions;
- participate in spoken interaction with other pupils.

Being involved in the process of teaching and learning EFL, the authors of the study have observed that in spite of the opinion that primary school learners are good at using English because of having watched cartoons and played computer games in English, they still need to be encouraged to speak up in their English lessons. The possible reason for that is the lack of interactive communication activities; hence, the learners have low speech performance (Reyes, 2018). Moreover, interactive communication activities

should start with real-life communication between the teacher and pupils in a foreign language (Khuziakhmetov et al., 2018), for example, asking for and giving explanations, instructions, requests, comments, and assessment. In these everyday activities, learners are involved in listening and speaking in the target language. An opportunity for pupils to communicate in a foreign language in a friendly atmosphere might be regarded as a positive stimulus influencing future learning motivation. This is crucial at the beginning of learning a language (Dewaele, 2011).

However, if the previously mentioned set of ideas is not helpful, teachers should think of additional ways to engage pupils in communication. Nowadays, one of the trends in education is to exercise the gamification concept as it helps to motivate people in different fields using elements of a game (Pfeiffer et al., 2020; Landers et al., 2018; Deterding et al., 2011). Motivation, raised by gamification elements incorporated into EFL lessons, allows pupils to find their interests and continue learning about them (Pfeiffer et al., 2020; Sailer & Homner, 2020) while acquiring English. The main idea of gamification is turning the whole learning process into a game. It includes the following elements into the teaching and learning process: achievement badges and prizes, giving and tracking points, scoreboards and discussion boards, progress bars, levels or quests, flexible goals, pupils making choice; quizzes, problem solving, time limits. Moreover, gamifying a lesson makes learners feel the excitement and rush of a game when in practice they gain knowledge and the learning process does not stop (González-González & Navarro-Adelantado, 2020; Dreimane, 2019; Centre for Teaching Excellence, 2018; Ingwersen, 2017). Overall, gamification is a smooth transition from game-based learning in preschool to creating the learning environment in primary school understandable without unexpected situations for young learners (Cojocariu & Boghian, 2014).

As regards speaking, gamification has a probability to change learners' behaviour, motivation and to prevent their anxiety levels in speaking activities (Rivas, 2017). To make it realistic, teachers have to apply structured gamification as described and divided into five logical steps by Huang and Soman (2013): 1) understanding the target audience and context; 2) defining learning objectives (outcomes); 3) structuring the experience; 4) identifying resources and 5) applying game elements. To perform the case study, the authors followed the mentioned steps the succession of which are described in the next section of the article.

Methodology

The case study was conducted in a spring semester of the school year 2021/2022. In this semester, pupils participated in an online teaching and

learning process, which made it complicated for the authors to complete the study as the initial idea was to have at school. The case study lasted for two months from February to April and was a part of the teaching practice of one of the authors. The research purpose was communicated to the administration of the school and the pupils' parents to receive legal permission to involve pupils in gamified activities in the lessons of English.

Step 1: understanding the target audience and context (Huang & Soman, 2013). The research group was 16 pupils of Grade 3 (9 boys and 7 girls) being eight to nine years old. The particular Grade 3 was chosen to be the research sample as it was previously observed that these pupils had preferred Latvian to communicate in English lessons. Some of the learners enjoyed speaking and participating; however, they rarely spoke English, even simple words and phrases, like 'teacher, …', 'can I ...', 'yes, …', 'no, …'. There was one pupil who actively spoke English in lessons. He had mentioned it before that he had been learning English through social media all the time. Unfortunately, other pupils lacked in confidence.

Step 2: defining learning objectives (outcomes) (Huang & Soman, 2013). By the end of the study, the pupils are expected to use English to communicate with the teacher and each other during the lessons of English. Consequently, the aim of case study was to explore how gamification elements in speaking activities can encourage speaking in English in Grade 3.

Step 3: structuring the experience (Huang & Soman, 2013). The authors of the study analysed the previous teaching and learning process with the particular pupils. Theoretical and methodological literature was analysed to design a plan combining best options to incorporate gamification elements into the lessons of English to encourage pupils to speak in the target language. The gamification elements were incorporated into the speaking activities in five English lessons. There was a lesson per week.

Step 4: identifying resources (Huang & Soman, 2013). The authors of the study identified methodological and technological resources to ensure best online teaching and learning process for helping learners speak in English being involved in gamified activities.

Step 5: applying game elements (Huang & Soman, 2013). One of the authors of the study implemented the theoretically substantiated gamified activities to encourage Grade 3 pupils to speak in English in online lessons. The used gamified activities were as follows:

- A recorded speech (video or audio) – a free speaking activity 'Describe the given picture'. **Gamification elements**: certain time constraints (40 minutes) to make a speech and a certain number of sentences had to be made (10 sentences maximum; using present simple as it had been covered in previous lessons). Pupils could record audio on Whatsapp, vocaroo.com or video on their phones. The tools for recording were

not new to the learners. They had used those before in spring semester of 2020 when Covid-19 pandemic in Latvia started and speaking tasks were given online.

At the beginning and at the end of the case study, three criteria to assess the pupils' work and give feedback were easy to explain to pupils, easy to observe by them and easy to check by the teacher. 1) whether the recording was sent on time (2 points: on time; 1 point: after the due date; 0 points: not sent); 2) the amount of sentences made (0 points: 0 sentences; 1 point: 1–3, 2 points: 4–7, 3 points: 8–10 sentences); 3) fluency of speaking (0 points: many long breaks and a lot of hesitation; 1point: with short breaks and some hesitation; 2points: without breaks and hesitation).

- February 4, Who wants to be a millionaire – to revise affirmative and negative sentences in present continuous (learnt at the beginning of the lesson) and recycling vocabulary on fruit and vegetables. This was a whole class activity in which the answers to questions were given to pupils and they all together had to get as many points for the correct answers as possible. **Gamification elements**: scoring points and getting to upper level questions.

For this and two next speaking activities, certain observation criteria were used. As these were online lessons, an option of recording was possible, which was beneficial for the authors to have precise observation of each pupil's speaking pattern.

Table 1. Observation sheet for gamified speaking activities: 'Who wants to be a millionaire'; 'Hide and speak'; 'Open the box'

Pupil	Voluntarily started speaking	Was asked to speak	Spoke in Latvian	Spoke in English	Gave a full sentence	Gave a short answer
1 pupil x						

- February 15, Hide and speak – to revise vocabulary on names of rooms, fruit and vegetables. The task was to notice something unusual in the picture shown, tell what it was and then do the task that was hidden 'under' the fruit or vegetable which was a sentence or a question that asked pupils to use present continuous tense. **Gamification elements**: who is going to be first (leader board) and quest (finding and dealing with confusing questions).
- February 22, Open the box – to revise numbers and present continuous tense before the test. Pupils had to 'open' virtual boxes to get picture prompts for using numbers and present continuous in their answers. This time it was an individual activity. **Gamification elements**: leader board and getting points.

A recorded speech (video or audio) – a free speaking activity 'Describe a picture of your own choice'. **Gamification elements:** certain time constraints (40 minutes) to make a speech and a certain number of sentences had to be made (10 sentences maximum; using present continuous as it had been covered in previous lessons).

The objective of the first and last free speaking activity was to gain data to compare the pupils' speaking performance before and after the implementation of the gamified activities. While the three activities with gamification elements were assigned to observe how their use changed the pupils' speaking in English habits.

The aim to be achieved speaking wise, in each activity complies with previously mentioned learning outcomes pupils are expected to achieve at the end of Grade 3 (Regulations Regarding the State Basic Education…, 2018). The authors of the research describe the results of the case study in the next section of the article.

Results

Figure 1 shows the results of the first and last speaking activity. In the first activity, each pupil could get seven points. The average score for the whole class was 5.38 points. Out of 16 pupils, eight pupils missed the due date. However, they managed to send the completed task to the teacher. Two pupils (Pupil No 2 and No 4) did not manage to send the task at all. On average, the class got 1.25 out of 2 points in this criterion. The amount of sentences varied. 11 out of 16 pupils made 8–10 sentences, three pupils made 4–7 sentences. Altogether, the class got 2.44 out of 3 points average in this criterion. When evaluating fluency, one pupil got two points, the rest of the class who sent the task got two points in this criterion.
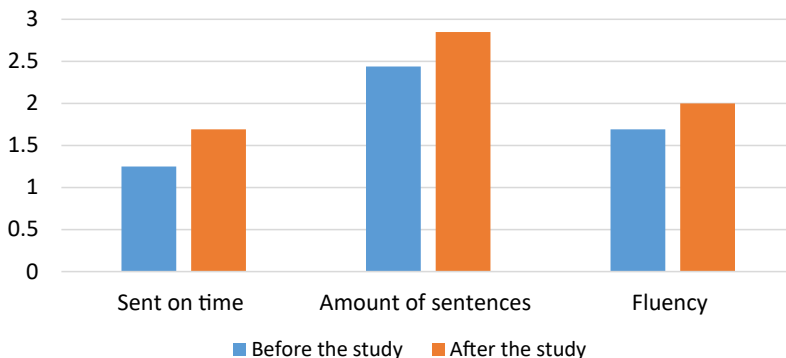
Figure 1. Comparison of the results of the pupils' speaking performance before and after the case study

The whole class on average got 1.69 out of 2 points for fluency at the beginning of the case study. In contrast, at the end of the case study three out of 16 pupils (Pupil No 2, No 4 and No 14) did not manage to do and send the task. For the rest of the class, 13 pupils, out of eight points possible got 7.54 points. Nine out of 13 pupils managed to send the task on time. While four pupils sent it after the due date. The class got 1.69 out of two points in this criterion. Evaluating the amount of sentences, pupils managed to get 2.85 out of 3 points. Two out of 13 pupils made 4–7 sentences, 11 pupils made 8–10 sentences. Evaluating fluency, all 13 pupils had no big pauses while speaking and they spoke without hesitation.

Table 2 shows how pupils reacted to speaking in English encouragement used in three gamified speaking activities. During the online learning, it was more difficult to supervise pupils and see whether they were learning or not. Therefore, each pupil in each lesson was asked to answer at least one question to make sure they were present and participated. In the activity *Who wants to be a millionaire* (February 4) one student spoke Latvian and it was a comment for another pupil's answer. Overall, pupils enjoyed the activity, participated and helped each other to choose the correct answer. The authors' opinion on why they helped each other is that pupils had to work as a team to win the virtual million dollars and could fantasise about options to spend that money.

Hide and speak activity (February 15) was meant to be carried out in class. However, due to the pandemic it was also online. In this lesson, three pupils spoke Latvian. The reason could be that they had forgotten the names of some fruits and vegetables. Pupil No 4 was not present in the lesson. Pupil No 12 participated very actively, wanted to answer many times to the teacher's questions and help classmates. Pupil No 12 felt encouraged and only spoke English. The pupils were observant and quickly found what was wrong with the pictures. They were motivated to see themselves on the leader board when their question – quest – was completed.

In the activity *Open the box* (February 22), pupils participated actively. Unfortunately, some of them still wanted to speak in Latvian. Pupil No 12 was outstanding again. It was due to the fact that one did not say a word in Latvian, which was done previously. Each pupil had two options to choose one number and open a box where a question or a task were hidden. Pupils No 5 and No 12 chose only numbers from 1 to 10 because of not knowing any other numbers in English. Getting the points and being on the leader board encouraged pupils to speak in English.

To sum up the table information, it is possible to have five different types of pupils – their tendency to speak and do it in English being encouraged by gamification elements. TYPE 1 could be pupils No1; 3 and 13 as they are active in lessons, they give full answers and do it in English.

Table 2. Teacher observation sheet of English lessons on February 4; February 15; February 22

Pupils	Voluntarily started speaking			Was asked to speak			Spoke in Latvian			Spoke in English			Gave a full sentence			Gave a short answer		
	04.02.	15.02.	22.02.	04.02.	15.02.	22.02.	04.02.	15.02.	22.02.	04.02.	15.02.	22.02.	04.02.	15.02.	22.02.	04.02.	15.02.	22.02.
1	✓	✓✓	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓			
2				✓	✓	✓	✓									✓	✓	✓
3	✓	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓			
4	✓	–	✓	✓	–	✓		–			–			–		✓	–	✓
5		✓		✓	✓	✓		✓	✓							✓	✓	✓
6				✓	✓	✓	✓			✓	✓	✓				✓	✓	✓
7				✓	✓	✓										✓	✓	✓
8			✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓			
9				✓	✓	✓				✓	✓	✓	✓	✓	✓			
10				✓	✓	✓							✓	✓				✓
11				✓	✓	✓							✓	✓				✓
12	✓	✓✓	✓✓	✓	✓	✓				✓	✓	✓✓		✓	✓	✓		
13				✓	✓	✓							✓	✓	✓			
14				✓	✓	✓		✓	✓							✓	✓	✓
15				✓	✓	✓										✓	✓	✓
16		✓		✓	✓	✓			✓	✓	✓	✓				✓	✓	✓
	4	7	6	16	15	16	1	3	4	7	7	8	7	8	6	9	7	10

TYPE 2: No 2; 4; 6; 7; 14; 15 – pupils who only speak up when asked, they give short answers and do it in Latvian. TYPE 3: pupil No 5: being active, but giving short answers in Latvian. TYPE 4: pupils No 8; 9; 10; 11; 13 – they mainly speak when asked, but they give full answers and do it in English. TYPE 5: pupil No 16 – speaks when asked, gives short answers, but does that in English.

Looking at the progress of Grade 3 pupils' willingness to speak before the case study and after, there were better results after the study in sending the task on time, the amount of sentences and fluency. However, if before the study only two pupils failed to send the task, after the study three pupils did. This data contradicts with the observation of the three gamified lessons. For example, pupil No 4 voluntarily spoke up in English

in lessons repeatedly. Unfortunately, one did not manage to send both free speaking tasks. Hence, the factors for these contradictions should be researched further on. The individual speaking tasks before and after the study provided statistical information about pupils' willingness to speak in English and the teacher observation revealed how encouraged pupils felt to speak in English in their lessons.

Conclusions

Speaking in a foreign language is complicated. Pupils should be encouraged to use English in their lessons when they communicate with the teacher and the classmates. To help learners feel safer, teachers should establish rapport and think of activities which would motive pupils apply the target language. Nowadays, one of the trends in education is gamification; and pupils like it as it envisages implementing game elements into lessons. Gamification has its certain characteristics, which help it turn the whole learning process into a game. Gamification elements such as points, badges, leader boards, quests, levels and others can serve different purposes inviting pupils to participate in the learning process both individually and in teams. If the learning process is more peaceful, gamification elements used in speaking activities encourage pupils to use English. However, if individual competition is in the centre, encouragement does not work and pupils switch to using the Latvian language. Even though, the short period of the case study depicts a positive trend in changing pupils' habit to use English instead of Latvian in communication in the lessons of English, teachers should be aware of their pupils' personalities to discover what else besides gamification can help their pupils use the target language more often and more confidently.

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UNDERSTANDING THE CONCEPT OF HEALTH LITERACY IN THE EDUCATIONAL ENVIRONMENT: A PILOT STUDY

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ABSTRACT

Health literacy is a widely known and researched subject in health care system defined as the relationships between an individual's level of education and his/her ability to maintain healthiness, improve health or participate in health treatment. However, there is a lack of information about the role of health literacy in school environment. This study reports on the topical status of understanding of health literacy concept among teachers and parents in the educational system of Latvia. Qualitative descriptive research was conducted in order to: a) analyse health literacy concept in theory and education documents; b) explore teachers' and parents' health literacy perception through focus groups interviews. A group of respondents included six adults representing teachers and parents from two schools. A thematic analysis method was applied to investigate participants' perception of health literacy, representing four dimensions of the concept's explanation: health and health education, Covid-19 pandemics, school/parent collaboration, and uncertain terminology aspects. The results showed various interpretations of health literacy terminology in educational documents, caused by insufficiently explained sub-terms – school, teacher and parent health literacy. This finding was confirmed by the results of the focus group interviews. That leads to a conclusion that the concept of health literacy requires a more efficient explanation by developing a comprehensible health literacy terminology in the educational setting.

Keywords: education environment, focus group interview, health literacy, parental health literacy, pilot study, terminology

Introduction

Over the last decade there has been a growing debate on public awareness of health issues, which was intensified over the last two years by the impact of the restrictions on public health caused by the Covid-19. Health literacy is being put into practice gradually, linked to the overall level of health education in society as a whole. As shown by health literacy

surveys in European countries (Sørensen et al., 2015), the overall level of health literacy varies across countries and social groups, which is currently worsening by the presence of pandemics and viral illnesses (Sørensen et al., 2015). Sørensen et al. (2013) argues that the social determinants of health literacy need to be taken into account when developing public health strategies to improve health equity in Europe, highlighting that limited health literacy is a challenge for health policy and practice across Europe. There are three health literacy levels a person should navigate: functional – includes knowing how to find and use the information needed to maintain one's health, including individuals' interest and involvement in health promotion programmes; interactive – includes the skills to be motivated and work towards improving one's health in a health-supportive environment, including e-environments; critical – includes personal and community participation, awareness of the impact of social and economic factors on health, risk assessment, ownership and the informed ability to effect policy and/or organisational change (Nutbeam, 2000).

Particular attention has been paid to children and adolescents, whose health is the responsibility of both parents and teachers. One of the problems in the educational environment is the contradictory understanding of health concepts and the confusion caused by the use of related terms. Recent research suggests that parents caring for children during the Covid-19 pandemic have experienced changes in emotional well-being and serious health literacy issues (Stars et al., 2021). The relationship between parental health status, education, and children's educational achievements points to the importance of parental competence in health literacy (Mikonnen et al., 2020), as well as the importance of school-parent collaboration in promoting parental health awareness (Okan et al., 2018). Insufficient parental health literacy affects children's health status and the educational process, reducing learning outcomes (Mikonnen et al., 2020; Koffijberg et al., 2012; de Buhr & Tannen, 2020). During the pandemic, the mental health problems of adolescents and adults have also become relevant, highlighting parental mental health literacy, which is analysed in connection with stigmatised beliefs and insufficient knowledge in the field of mental health (Bonanno et al., 2021).

Two years ago, the USA Centre for Disease Control and Prevention (CDC) launched a new definition, which the US government is implementing as part of its Healthy People 2030 initiative (Santana et al., 2021). The update covers personal health literacy and organisational health literacy and provides the following definitions: personal health literacy is the way in which individuals are able to find, understand and use information and services to inform health-related decisions and actions for themselves and others; organisational health literacy is the way in which organisations

equitably enable individuals to find, understand and use information and services to inform health-related decisions and actions for themselves and others (CDC, 2022a). Both definitions describe the way or context in which individuals are able to obtain, process and understand the basic health information and services needed to make appropriate health decisions.

The World Health Organisation (WHO, 2021a) also recognises that health literacy in educational settings is considered a core concept of health promotion. School health literacy includes the equal interaction of school management, teachers, students, school support staff and parents with the aim of promoting the growth of health literacy of all involved parties. School-parent cooperation in health literacy should be seen as an important tool to develop health literacy and should be defined as a set of activities developed jointly by parents, teachers and school management, designed to optimise a) the physical, mental, emotional and cognitive health of the child; b) the health literacy of parents, teachers and school support persons. Scholars note that incorporating health literacy into the school curriculum, supported by a "whole-school" approach, is the most promising strategy to ensure that all children can gain the necessary knowledge and skills to support their health and well-being across their lives. That illuminates the need of collaboration between health and education sectors, including teachers and parents.

The importance of health literacy in today's society is indisputable, but the question is – does society, especially its important actors in the educational environment – teachers and parents, have a clear understanding of what health literacy is? Thus, the aim of this pilot study was to analyse the usage of health literacy terminology in public educational documents and to explore in a small sample how this term is being understood in school environment by teachers and parents.

Health literacy in education environment

Health literacy nowadays means more than being able to read health-related materials and make an appointment with a doctor. As it has been stated in Health Promotion 4.0 document, the health system is going to change due to the digital transformation of health and medical care, both in its practice and its governance. Health literacy promotes people's ability to access health information and their ability to use it effectively (Kickbusch, 2019). Health literacy enables people to make 'positive choices' as it implies the achievement of a level of knowledge, personal skills and confidence to take action to improve personal and community health by changing personal lifestyles and living conditions (WHO, 1998). Researchers emphasises that health literacy includes the knowledge, motivation and competence to access, understand, evaluate and use health

information to make health decisions in their daily lives, disease prevention and health thereby maintaining or improving the quality of health care throughout life (Sørensen, 2016). School health literacy skills start early in life and are part of the health care and education process for children, adolescents and young people. All schoolchildren and students need to acquire appropriate health literacy skills to help them lead healthier lives (CDC, 2022b). According to Norwegian health literacy researchers, at the structural level of the organisation, health literacy refers to the way in which an organisation, in this case a school, provides health information and health services to people – teachers, students, parents – with different levels of health literacy (Frederiksen & Wångdahl, 2022).

Parental health literacy, on the other hand, is seen as an important competence for monitoring a child's health, as children are dependent on parental care and may suffer from situations where parents have insufficient levels of health education and knowledge (de Buhr & Tannen, 2020). Teacher health literacy is characterised by the teacher's ability to provide the pupil with basic health knowledge, health information appropriate for the age and perception of the pupil, and to create awareness by example of the competences and skills that need to be acquired throughout life.

Health literacy as a component of health education has been studied worldwide since the 1970s, when the role of school health education in promoting health literacy was highlighted at the political level (Nutbeam, 2015). Health literacy goes far beyond the narrow concept of health education and communication towards individual behaviour. It looks at the environmental, political and social determinants of health, including the wide range of skills and competences that people develop throughout their lives to search for, understand, evaluate and use health information to make informed decisions to reduce health risks and improve their quality of life.

The Health Promoting Schools (HPS) initiative originated in the 1980s as a result of the WHO's Ottawa Charter for Health Promotion, emphasised that health promotion is a process that enables people to gain control over their health and their environment (Turunen et al., 2017). The collaborative work of students, school staff, parents, health professionals and health service providers are what sets such a school apart from others (Griebler et al., 2017). One of the most important health literacy skills is information literacy, which creates additional challenges in the rapidly growing digital age. The WHO's Global Strategy for Digital Health (WHO, 2021b), provides a roadmap to track developments and innovations in digital health. It aims to make digital health support equal and ensure universal access to quality healthcare services, make healthcare systems more efficient and sustainable, enabling them to provide quality, affordable

and equitable care. As engagement with the digital world among children and adolescents increases, this becomes essential for health literacy. Digital developments should be addressed by the education sector and in schools, which will need teachers trained to deliver this kind of education.

Research in Latvia shows the problems of school-based health education (Stars, 2018a) and the challenges posed by health literacy issues to two important state systems, namely health care and education (Stars, 2018b). The issues of the relation between parents' quality of life in terms of health and children's illnesses are brought up (Laizāne et al., 2018), as well as those of adolescent health literacy and information literacy as an essential part of understanding health literacy (Stars & Rubene, 2021). Aim of this pilot study is to explore how health literacy terminology has been described and explained in public educational documents and analyse specific target group – teachers and parents in school. The hypothesis is that the concept of health literacy is not sufficiently explained in educational setting in Latvia.

Methodology

The design of this study was/ is descriptive, qualitative research. The qualitative research is a useful research method in situations when a concept or a phenomenon needs to be understood since little research has been conducted in the researched area and the topic has never been addressed with a certain sample or a group of people (Creswell, 2009). Qualitative descriptive approach has been applied as it is suitable for health care examining purposes, including the concept of health literacy. This approach has been identified as appropriate for research questions focused on discovering the way informants perceive poorly understood phenomena (Kim et al., 2017). Document analysis as a systematic procedure for evaluating documents (Bowen, 2009), in this case health literacy terminology documents – both printed and electronic material – has been used. The onomasiological approach has been selected for the conceptual understanding of the health terminology system, which involves the study of terminology based on a clearly transparent conceptual framework, where each concept is given an appropriate term, and at the same time looking at the understanding of the concept directly related to its use. Onomasiology in a pilot study described as the branch of linguistics that studies words as the names of certain things or phenomena (Skujiņa et al., 2007).

Methods of data collection

The purposive sampling through the use of the convenience method was selected based on theorists' recommendations for conducting a pilot

study, for both purposes, testing the research methods and the validity of the problem. The focus group interview method increases the possibility of discovering individuals' points of view in the process of interaction between the researcher and the group members (Mārtinsone & Pipere, 2011). For both groups of respondents – parents and teachers – identical questions were formulated, which were used to find out the respondents' experience and understanding of health literacy. The main interview question was:

1. How do you understand the concept of health literacy? Additional questions such as –
2. How would you explain the concept of parental health literacy?
3. How would you explain the concept of teacher health literacy? – were used when deemed relevant.

The purposive sampling through the use of the convenience method was chosen based on theorists' recommendations for conducting a pilot study – to both test the research methods and the validity of the problem (Mārtinsone & Pipere, 2011). A total of six adults between the age of 37 to 43 took part in the focus group discussions in this study. Participants were classified according to the following sampling criteria:

1) Age: group 30–40 ($n = 2$), group 40–50 ($n = 4$);
2) Gender: women ($n = 6$);
3) Place of residence: big city ($n = 1$), suburb/rural area ($n = 5$);
4) Location of the educational institution of the respondent: school in a big city ($n = 3$), suburb/rural area ($n = 3$);
5) Type of school: secondary school ($n = 6$);
6) Characterisation of the respondents is the following: the basic subjects of teachers are the Latvian language, literature, the German language, and geography.

During the interview, teachers reflected on health literacy not only as professionals, but also as mothers of students, as children of different ages (18, 16, 14, 13 years) are growing up in their families. The group of parents was represented by three mothers whose children attend 1st–7th grade of a secondary school. The two mothers involved in the study are also teachers working in pre-school and interest education, this way, parents also reflected as teachers during the interview. In general, this approach allowed for a representative understanding of the views of both parties, namely teachers and parents.

Data collection and analyses

Ethical approval was gained from the Ethics Committee of the Faculty of Education, Psychology, and Art of the University of Latvia. The interviews took place in March, 2021. Participants of the study received a letter explaining the course of the study; an oral consent to participate

in the research was obtained from them. Participation was voluntary and the respondents had the right to decline or discontinue participation. The names of the research participants were coded according to data protection requirements. Data were obtained through Zoom video recording, each interview lasted 40 minutes. Participants' location during the video interview was individually chosen due to the Covid-19 pandemic restrictions. There was a lack of data saturation observed by the author, setting the interview length for further studies at 1 h 30 min. Data was transcribed verbatim and analysed manually using a thematic data analysis. At the beginning, the concepts were defined as follows: health literacy, teachers health literacy and parental health literacy, the related concepts marked in the interview text (twenty in total: health education, health behaviour, parental self-esteem, teachers' health, etc.) are grouped into two thematic groups: health and health education, which are further divided into two more groups: school/parent collaboration and health literacy terminology in education environment.

Results

The results are described in the following order: teachers' and parents' explanations of health literacy, dimensions of the concept of health literacy and analyses of terminology aspects in education documents. Explanations given by teachers and parents (see Table 1) represent their current understanding of the term health literacy and reveals the competencies regarded as necessary for a person to be healthy.

The following results reflect informants' perceptions of health literacy representing four dimensions of the explanation of the concept:

1. Health and health education:
a) health information literacy;
b) adherence to the principles of physical activity and good nutrition as well as emotional stability and ability to maintain mental health conditions;
c) critical thinking – highlighting the importance of critical thinking in the ability to navigate both health information and to evaluate and select relevant and credible media sources;
d) awareness of the 'basics' of health literacy, which include healthy sleep, food and exercise, as well as emotional and mental health, and, of particular importance, the practice of this knowledge.

2. Covid-19 pandemics. Informants admit that existing level of health literacy, particularly with regard to mental health, is insufficient in a pandemic. Parents, teachers and children all want to be heard, to share their thoughts and emotions, and to seek support.

Table 1. Health literacy concept meaning: teachers and parents

Teacher 1	"Health literacy is initially about understanding your health, the factors that influence it and determining specific actions and activities. It has several facets – mental, physical and emotional health, or good psycho-emotional health."
Teacher 2	"My personal opinion is that of all the skills that are taught it's probably a recent "hit". I guess I am a bit sceptical. These things have been around all the time anyway, but under a different name, the terms are changing, the terminology itself is changing."
Teacher 3	"Health literacy is the ability to take care of one's health, to lead a healthy lifestyle, and it is a holistic concept that encompasses the whole person – their mental, physical and social health. As a teacher, I use my skills to set an example for my pupils, and then pass on this knowledge. The only issue is that the understanding of what is healthy for whom varies greatly. And especially when these different opinions are between parents and teachers, for example, about the [Covid-19] vaccines. This is an issue where there are all sorts of stumbling blocks."
Parent 1	"I have been thinking about health literacy for years without knowing it was called health literacy. It involves the ability to find information, the existing knowledge and previous experience. Seeking information, understanding, analysing."
Parent 2	"When you spoke to me, I didn't understand at first what it was either – health literacy... I mean, I can't even remember the word – health literacy. But I thought of it logically – health and mind. So, mind – to understand, to know, attitude and action, for me it is emotional health first, physical health second.
Parent 3	"Health literacy is the very foundation of the health. My skills may be high, but if I don't embody it in my life, it doesn't work. The foundations of health literacy must start with my own example, taking care of what I eat, how I sleep, what my regimen is, how I take care of my emotional state and how I use my critical thinking to analyse health information."

3. School/parent collaboration – the need of mutual trust arises in data. For example, one of the parents expresses her doubts through the question: Do I have confidence that the teacher is competent enough to educate me on these issues? Teachers, on the other hand, point out that "all the salt" is to educate parents. Therefore, the issue of cooperation between teachers and parents, mutual trust as one of the most important preconditions for the success of the health education process, integrating health literacy as a part of teacher and parent education, is relevant for further research.

4. Uncertain terminology – observation of participants answers point out contradictions in the understanding of terminology and, consequently, inaccurate orientation in the conceptual system. One of the parents admits: "Until you asked about this term [health literacy], I didn't know the

combination of these words". Three out of six respondents say they are hearing the term for the first time. This means that terminology itself has not been widely used in the educational setting and other environments, such as home, workspace, etc. Although the concept of health literacy has been known in the world for more than 40 years, it appears to be relatively new in Latvia.

The term *health literacy* has been officially used in Latvia since 2016, when it was reviewed by the Commission of Terminology of the Latvian Academy of Sciences (LZA, 2016). It is also included in the operational strategy of the Center for Disease Prevention and Control, as well as in the document "Public Health Guidelines 2021–2027" prepared by the Ministry of Health of the Republic of Latvia (MK, 2022). It must be admitted that the concept has been described much earlier, for example, Pēteris Apinis already in 2011 wrote an article "On Health Literacy" in the magazine "Latvian Doctor" (*Latvijas* Ārsts) where he says that health education is important, which aims to create health literacy as a priority to motivate to act for the health of themselves and their loved ones (Apinis, 2011). And yet the public's (including the educational environment) understanding of the concept of health literacy is still evolving, so the explanation of this concept in the broadest conceptual framework is needed, revealing the correspondences between the use of sub-terms and related terms. It should be noted that entering the term *health literacy* in the Latvian National Centre for Education digital platform named "School 2030" (Skola2030, 2022) retrieved no results, so it can be assumed that in the new educational documents compiled on this website, the term *health literacy* has not been defined at all or the phenomenon is referred to differently. Thus, the situation with the concept of *health literacy* in the public space of Latvia was also reflected in the respondents' answers.

The term *proficiency* entered the Latvian terminology along with the term information literacy in 2005 in connection with the collection of library and archive terms. Nowadays, the word *literacy* is given in the Dictionary of the modern Latvian language (MLVV, 2022) with the following explanation: "an individual's skill (in what field), understanding (of what), ability to use, for example, information, knowledge". The most common word associated with this word is proficiency. Proficiency as a synonym of the term competence is also defined in the "Glossary of Pedagogical Terms" (Skujiņa et al., 2000). In the terminology system that emerged with the "School 2030" initiative, the term component *literacy* has been particularly strained, creating a number of new terms, such as *word literacy*, *media literacy*, including *health literacy*, and *digital literacy*, *mathematical literacy*, *social* and *civic literacy*, technological know-how, etc. Going beyond the field of traditional education, society and the media have

been talking about financial literacy and legal literacy in recent years. It must be said that the use of these terms has not yet really taken root, so the term compound and the word term are used in parallel and with the same meaning.

Thus, the conceptual framework (see Figure 1) of health literacy terminology that has been based on the gathered data include a system of basic terms consisting of terms such as *organisational health literacy, school health literacy, teacher health literacy, adolescent health literacy, parental health literacy, collaboration on health, and digital health literacy*. In turn, terms related to health literacy are *health competence, health education, health behaviour, digital health, health information literacy*.
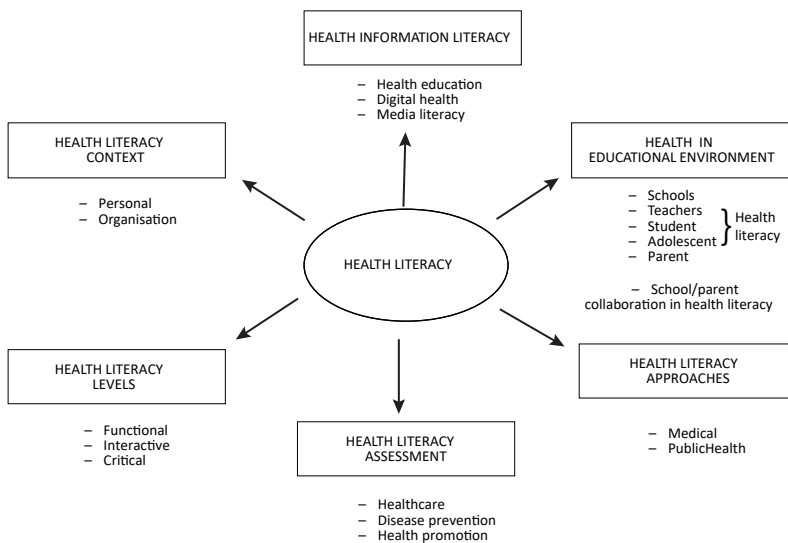
Figure 1. The conceptual framework of health literacy terminology
(a scheme drawn up by the pilot study authors, based on theoretical frameworks of health literacy concept, Nutbeam, 2000; WHO, 2019; Sørensen, 2016).

Discussion

This pilot study focuses on the development of health literacy terminology, uncovering teachers' and parents' interpretations of health literacy, highlighting the current state of understanding of the concept in educational settings. As results have demonstrated, teachers and parents explained health literacy more from "action" point not terminology. However, parents' insight about hearing this concept [health literacy] for the first time cannot be ignored, as well as teachers' thoughts about term *health literacy* as some new "trend" without deep meaning. These findings

support and validate author's hypothesis that the concept of health literacy has not been sufficiently explained in educational settings.

Participants talked about health action, health education and their responsibility in health promotion in general, without using terms *health literacy*, *parental health literacy*, *school or teacher health literacy*. Teachers and parents reflected on specific skills one should obtain in order to be healthy, naming the importance of physical, mental and emotional health. Their perceptions about health literacy in everyday life included knowledge about how to maintain good health – food, physical activities, emotional stability – monitoring children and student diseases and by their own example as teachers and parents, show how to promote health literacy. This confirms theoretical findings that approaches to health literacy should consist of health care, disease prevention and health promotion (Sørensen, 2016). Dimension – critical thinking, which teachers and parents point out, confirms theoretical position of critical literacy and critical thinking as one of the most important health literacy skills that not only parents need to master, but also children need to be able to learn (Okan et al., 2018), highlighting that critical thinking is helps to navigate health information to evaluate and select relevant and credible media sources. Dimension – school/parent collaboration show – parents and teachers agree that school is the right place for a child to learn about health. However, the question of whether school is the right place to (indirectly) educate parents, as is stated by theory (Frederiksen & Wångdahl, 2022) should be explored in depth.

Health literacy explanation table (Table 1) shows that teachers and parents' level of health literacy functioning covers basic and interactive levels, that could be explained by the fact they reflect form personal health literacy context rather than from organisational (CDC, 2022a), despite school environment being presented. In order to get full insight of health literacy concept in school environment, further research should include school managers and headmasters. Both parents and teachers agree that school is the right place for a child to learn about health. However, the question of whether school is the right place to (indirectly) educate parents should be explored in depth. Regarding health literacy approaches – clinical and public health as described by researches (Pleasant & Kuruvilla, 2008) – pilot study findings suggest to use both of them. The pandemic context, which was the four dimension of health literacy concepts explanation emphasises the need for teachers, school management and parents to understand and manage both – the medical and public health aspects, which in the context of the educational environment includes collaboration with school support staff and health professionals as well as the willingness of all stakeholders to work together. This finding is confirmed by Sørensen et al. (2012) a researcher and a head of the Global

Health Literacy academy, who analysed definitions of health literacy with a team of researchers in 2022.

Conclusions

The concept of health literacy and its implementation in practice is a rather complex process, which includes various types of knowledge and skills that an individual must acquire. The development of a health literacy terminology system would facilitate the ability of society as a whole to understand the different uses of the concept of health literacy and promote real understanding of how health literacy and its level affect both our own health and the health of our family members, especially children.

The data obtained in the study demonstrate the understanding of the concept of health literacy from the points of view of parents and teachers that highlights the problems of responsibility and cooperation of both parties to improve the health practise in school setting. More in-depth research is necessary into the factors that affect the health literacy of the Latvian population, paying special attention to health literacy of parents and the development of their children's health skills in educational institution, which, in turn, points to the need for health educators. The contextualization of the results of the approbation study revealed the need to develop recommendations for specialists in promoting the health literacy of parents and teachers. It leads to the conclusion that systematic co-operation between public authorities, schools, parents and health industry is required.

Based on the results of the study and drawing conclusions about the current situation in health literacy in the educational environment in Latvia, the pilot study authors conclude that not only parents, but also teachers and the school as an organisation are in the process of understanding of the concept of health literacy. There is a need for well-thought-out expert advice on promoting health literacy of parents and teachers. Clear and thoughtful introduction of health literacy terminology in educational settings would contribute to both, the subjective health literacy growth of parents and teachers in improving the health status of students, and the health literacy of a school as an organisation, laying the foundations for systemic collaboration involving the health sector and education policy makers.

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TYPICAL ERRORS IN PUPILS' SCIENTIFIC RESEARCH PAPERS IN ANGLOFONE LITERATURE STUDIES

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ABSTRACT

While involved in scientific research activities, pupils get acquainted with the methods and structure of scientific research, thus acquiring skills necessary to handle and develop theoretical concepts, carry out empirical analysis, develop analytical and critical thinking and acquire new knowledge and skills. Expert-accessor analysis of the pupils' papers presented between 2017–2022 in the national competition of research papers in foreign language and literature studies has allowed the detection of distinct categories of mistakes appearing in numerous papers that prevent even very talented pupils from achieving good results. Thus, the study aims to promote the understanding of both pupils and teachers supervising research papers of the most common mistakes that should be avoided while elaborating a research paper and stimulating the creation of more successful research papers in the future. The report provides a summary of data obtained by analysing 27 pupils' research papers submitted in the Riga region and reviews of these works, identifying the most common types of errors and how they affect the results, as well as providing recommendations on how to eliminate such errors. The study concludes that the three most important groups of errors are related to an inappropriate selection of the research field, inability to formulate and prove the topicality and novelty of the research, and failure to balance, structure, and harmonize the research carried out in the theoretical and empirical parts of the paper. The obtained results indicate that it is necessary to educate further supervisors, pupils, researchers, and prospective teachers on how to avoid these mistakes to improve the quality of the research in the field of literary studies, so suggestions are provided at the end of the paper.

Keywords: Anglophone literature studies, errors, structure, pupils' research papers.

Introduction

It has been confirmed in numerous studies that participation in research-oriented activities leads to significant acquisition of research, resource management, communication, and interpersonal skills (Ravishankar et al., 2009), and undoubtedly "schools play a central role in students'

orientation towards science" (Reinhold, Holzberger, Seidel 2018). Alas, there often is "a significant gap between research (researchers) and school practice (teachers' understanding of the research" (Tothova, Rusek 2021), which does not allow to reach the best possible results. Since 2016, the development and evaluation of students' research papers have been carried out within the framework of the European Social Fund project with the aim to promote the development of individual competencies and talents of pupils at general education institutions by providing a set of national and international support measures (National Centre for Education, 2016). The competition of secondary school pupils' research papers is an annual event, involving secondary school pupils from all over Latvia. The implementation of the project is coordinated by the National Centre for Education, Republic of Latvia. The University of Latvia, as one of the cooperation partners, oversees and carries out the assessment and reviewing of the pupils' research papers in the Riga region.

Although the benefits of being involved in research activities are undeniable as it provides a "great opportunity for students' personal and career development since it is a source of learning and self-discovery that helps unveil the validity of their assumptions and ideas" (Djoub, 2021), pupils' and their teachers' lack of experience and knowledge about the stages of scientific research development, the optimal structure and content of a scientific paper have an adverse effect on developing a successful research paper.

Evaluating the scientific research works of the Riga region since 2014 in the field of Anglophone literature studies, the most typical mistakes that recur from year to year, hindering the achievement of the best possible results have been detected, analysed, and summarised. At the final phase of the competition, that is, research conferences, pupils often mention the lack of skills to perform an in-depth analysis of a literary work as their primary problem that has not allowed them to achieve the planned results. Actually, the study of pupils' papers and their reviews reveal that the scores are more often lost because both the pupil and the supervisor have had inadequate skills to choose the scope of and limit research to a definite scientific field of study; to explain the topicality and novelty of the research, and failure to balance and harmonize the theoretical and empirical studies necessary for the analysis.

Methodology

Altogether 27 pupils' scientific research papers devoted to Anglophone literature studies written between 2017-2022 were randomly selected out of 40 submitted to the section and were analysed in line with the given expert-assessor reviews. Both the content of the papers was re-evaluated,

the compliance with the *Guidelines for Writing Pupil Research Papers*[1] (National Centre for Education, 2021) was investigated, and the comments provided in the expert-assessor reviews were analysed, paying particular attention to the errors inherent in a significant number of the examined papers.

Results

Scrutiny of the selected research papers and their reviews revealed that several areas require special attention. While the compliance of the papers with 20 requirements is analysed and evaluated in the process of reviewing, for the current analysis, only those categories were selected that indicated the highest number of similar mistakes appearing in more than 15% of the papers. As *Table 1* discloses, errors in the given fields range from being very common (56%) to comparatively rare (17%).

Table 1. Statistical data of typical mistakes found in the pupils' scientific research papers

Mistakes	out of 27 papers	%	2019 9 papers	%
Does not correspond or only partially correspond to the field of science	15	56	4	44
Incorrect citation	7	28	3	33
Plagiarism	4	17	1	11
The topicality of the work is poorly justified, lack of novelty	16	61	7	78
The goal of the research is incorrectly formulated	11	44	4	44
Faulty hypothesis or research questions	11	44	4	44
Faulty Literature Review	9	33	2	22
Faulty structure, poorly or not connected theoretical and empirical study	13	50	4	44
Incomplete Conclusions	7	28	3	33

To ascertain that the selected works reflect believable overall tendencies, all papers submitted in the section of Anglophone literature studies in 2019 were re-evaluated. The obtained data were compared to the results gained after studying the randomly selected papers. As Figure 1 indicates, though the percentages slightly differ, typical mistakes remain the same from year to year.

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[1] GUIDELINES for the development and evaluation of pupils' research papers
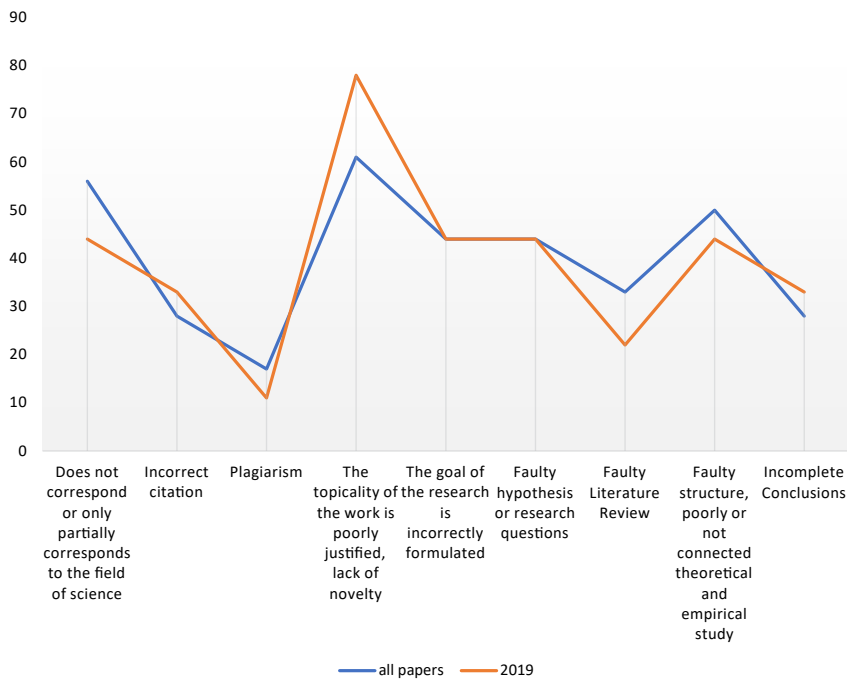
Figure 1. Comparison of the selected papers with the data of 2019

Discussion

As seen in *Table 1*, the three most common mistakes of pupils' research papers are:

1) the topicality of the work is poorly justified; the research paper does not demonstrate or fails to prove novelty – 56%;
2) lack of correspondence or just partial correspondence to the research field – Anglophone literature studies – 56%;
3) faulty structure, poorly or not related theoretical and empirical study – 50%.

Topicality and novelty

The research makes it apparent that 61% of all pupils, as one of the critical problems encounter the necessity to prove or explain the topicality and novelty of the research. The primary goal of any research paper is to utilize "acceptable scientific methodology to solve problems and create new knowledge that is generally applicable" (Babariya & Gohel, 2017). One of the causes of the lack of novelty is that the issues which seem fresh, interesting, and captivating to secondary school pupils who have

encountered some classical literary works for the first time in their lives have already been thoroughly studied by generations before them. Thus it becomes extremely difficult to create new knowledge by studying those. Though probably, something new could be discovered by applying a fresh research angle even to the theme "The Social Status of Women in Victorian Period Society and its Reflection in the Works of the Brontë Sisters" (NCE Scientific Conference of Pupils from Riga Region and Riga [SCPRR], 2018, JS[2]), it is hardly possible that an inexperienced researcher will be able to implement it. Performing research on a theme like the given one, pupils will find it difficult even to get an approximate understanding of the general tendencies of the views of other scholars who have studied the theme, as the amount of critical works to consult will be immense. Studying well-known and widely covered topics will still be useful to the pupil, who will learn a lot in the process, but it will be very challenging to achieve and prove the novelty of such research.

Another difficulty even talented pupils struggle with is the requirement to explain and prove the topicality in the Introduction of the paper, as demonstrated by the reviewer assessing a well-written paper: "The topicality of the research is unquestionable, but it is compulsory to define it and point out that the works of this particular author have not been studied much yet and there are no widely available studies on the use of" particular elements in the given set of the literary works (SCPRR, 2019, RB-review[3]). Even though the reviewer is experienced enough to recognise a relevant study carried out from a unique angle, it is still the researcher's task to devote a couple of lines in the Introduction to define and explain topicality; otherwise, the score is diminished.

While defining the topicality, researchers should avoid such empty phrases like "problems which are highlighted in the novel are still essential" (SCPRR, 2019, PŠ) "without naming any of the problems" (SCPRR, 2019, PŠ-review). Even though the reviewer recognizes the validity of the claim that "the social problems discussed in the novel are still relevant today" (SCPRR, 2019, PŠ-review), for it to be considered as a justification of the topicality, it is essential to name and specify these problems. Reviewers take into consideration the lack of experience of pupils and are lenient when evaluating this aspect; still, the young researchers should take into account that they are the ones responsible for naming the problems, issues, and approaches used while carrying out the research and should devote

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[2]   To preserve the anonymity of the authors of the papers, only their initials are provided.

[3]   To separate the research papers from the reviews of those, 'review' is added after the initials of the author of the research paper.

at least a couple of sentences defining and explaining the topicality and novelty of the paper.

Correspondence to the research field

Another crucial problem of pupils writing the research papers and of their supervisors – teachers, is the failure to recognize what is and is not pertinent to the field of Anglophone literature studies. According to the set requirements for the national research paper competition: "The text of the research paper must be written in the official state language, except for the field of science of foreign linguistics and foreign literature, where the work is written in the relevant foreign language[4]" (National Centre for Education, 2021). While the guidelines make it clear that only papers written in the fields of foreign linguistic and literature studies can be and must be written in the respective language of the given section, that is English here, and all other papers must be written in Latvian and submitted to the corresponding sections, some pupils and teachers assume that every paper written in English belongs to linguistic and literary studies. Thus, several papers that ought to be written in Latvian land in the section of Anglophone literature and linguistics, as the language of the research paper is English. The following paper, "Music genres affect the lives of young people" (SCPRR, 2018, MJ) should have been written in Latvian and handed in either in the section of Psychology or Arts, depending on the focus, while the following paper "The impact of studying abroad on future career" (SCPRR, 2021, KH) belongs to the field of social studies. The paper on "The use of elements of drama at the lessons of the Russian and English languages" (SCPRR, 2021, KB, AB, AK), should have been submitted to the section of Pedagogy. A couple of well-written papers "The relationship between gender, motivation, and achievement when learning English as a foreign language" (SCPRR, 2022, IEL) and "The impact of age on English language acquisition" (SCPRR, 2022, LS) belong to the field of Social studies, as these carry out research in the areas of psychology and pedagogy, and again, all these papers should be written in Latvian. The teachers supervising research papers should remember that the fact that the paper is related to English language acquisition does not make it in research in linguistics or literature, if neither of those has been studied; these are not linguistic or literary studies if the focus is not on the language or literature itself but the pupils learning the language.

Another common mistake is to carry out research in the field of literary studies in the theoretical part of the paper and switch to unrelated and theoretically baseless survey in the field of the social sciences in the

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[4]   here and everywhere else translation by Antra Leine

empirical part. The author of the paper on the theme "Stereotypes and cultural diversity in the novel 'Murder on the Orient Express' by Agatha Christie" admits being more interested in studying "how stereotypes and cultural differences affect the formation of students' thinking, opinion, and tolerant behavior" (SCPRR, 2022, JJ) – research which belongs to the field of Social sciences. To achieve it, the author sets several widely scoped research questions: "To study the sociocultural background of the novel […] To identify class and cultural differences using the Novel", "To plan lessons about the Novel. Discuss the stereotypes, cultural and class differences described in the Novel […]" and "To create a survey (questionnaire) to study the impact of reading the extract of the Novel on students' attitude to cultural and class diversity and evaluate how stereotypical their thinking is. To foster cultural awareness of students, the potential readers of the Novel" (SCPRR, 2022, JJ). Neither the paper itself nor the set objectives include theoretical studies in literature, psychology, and pedagogy that would be essential to reach the set goals.

Neither the authors of these papers nor their supervisors have been aware that 1) also surveys of the peers and classmates must be carried out using scientifically sound and proven methodology and based on theoretical studies in the field; 2) analysis of the awareness, knowledge, or attitude of the classmates and their ability to detect some literary elements or apply some knowledge, is not a research in literature or language studies.

While more often the papers in which different science fields are mixed up deal with pedagogical or psychological experiments in the empirical part, occasionally more interesting but still invalid approaches appear. Sometimes young researchers forget that fictional works are not entirely reliable sources and should be used to learn how something is depicted instead of employing these as the sources of profound, scientifically based historical investigations. Thus, Daniel Defoe's 'Robinson Crusoe' is not a survival guidebook and should not be used as an academic source to learn "how to survive in extreme conditions" (SCPRR, 2018, KK). Besides, the topic belongs to anthropology studies, while the research should have been conducted in literature.

To avoid these mistakes and prevent poor results or failure, teachers and pupils should strictly confine their research to the study of Anglophone literature or linguistics without theoretically baseless excursions into the fields of social or other sciences.

The connection between the theoretical and empirical studies

The third most problematic issue of pupils' research papers is the composition and logic of the structure. Deciphering the meaning of the text and interpreting it is an art and requires a very complex set of skills

(Goldman, Lee 2014; Lee 2011). The structure analysis divulges that pupils are too often not skilful enough to intertwine logically and structurally the theoretical and empirical parts, ensuring that the practical study of literary works is based on the academic findings stated in the theoretical part of the paper.

Here the problems appear mainly due to two often related causes. First, the theoretical part is just too short, and does not provide all the necessary information to carry out successful research: "The theoretical part of the research is not completely related to the practical one, the part that forms the main theoretical basis of the research takes up only half a page." (SCPRR, 2018, KK-review). "The literature review on Gothic and Gothic features in literature takes up only half a page" (SCPRR, 2019, AM-review), thus, providing an incomplete basis for the research on the given theme. To the same group belong the papers lacking a qualitative theoretical basis altogether or those in which the theoretical part is a compilation of various, relatively superficial, non-academic sources without expansion and analysis.

The second group of faulty papers includes those in which there is no correspondence between what is discussed in the theoretical part of the paper and what has been analysed in the empirical one. Thus, for example, the theoretical part provides analysis of the use of "inversions in other languages" (SCPRR, 2018, LG), but the issue is never discussed in the empirical one.

Typical of scientific research activity, "the solutions to the posed questions cannot be found solely by obtained knowledge and skills – new knowledge must be learned" (Volodko & Čerņajeva, 2019), but not everything that is learned during the writing process, must be included in the final research paper. Thus, while writing the paper "Anorexia in Fiction: the Analysis of "Wintergirls" by L. H. Anderson" (SCPRR, 2017, SS), the author must learn what anorexia is and what are its typical features, but extensive analysis of the medical aspects of anorexia does not correspond to the chosen research field and should not be included in the work of literary studies.

To the same group belong papers in which unnecessary information about the biographies of the authors is provided: "The subdivision dedicated to biography is superfluous and useless" (SCPRR, 2019, AM-review). These either in no way are helpful to the analysis carried out in the empirical part of the paper: "Although an exciting task, it is not clear how the researcher's translation of the biographies of A. Sakse and T. Zālīte into English helps to understand better the portrayal of the character traits in the translated fairy tales" (SCPRR, 2020, MK-review) or tempt pupils to carry out hypothetical assumptions about the goals and motivations of the

authors. It is pointless to include these in the research, as the findings of the biographical facts of the author do not prove anything about the value, plot, structure, characteristic features of the genre, or any other element of the literary work. Also, as counterproductive are attempts to explain either author's motivations and actions or literary works themselves by providing an amateurish psychological analysis of some biographical facts of the author in relation to the elements in the literary work under discussion. To outline some parallels between the author's biography and the fictional work may be interesting for the researcher, but these observations should be left out of the final paper, as the goal is to study a literary work, not the author's psychology.

Conclusions and suggestions

1. Pupils should be encouraged to choose themes that have not been already extensively studied. Comparative analysis of English and Latvian literature of the same period or having other unifying properties could be a good option; as well as, choosing contemporary Anglophone literature or a comparison of definite aspects in a literary work and its more recent screen adaptation could be worth studying to ensure the novelty of the research.
2. Though the topicality and novelty of the paper may seem obvious to the researcher, these must be defined and clarified in the Introduction. The topicality of the research may be proved by providing an overview of the growing popularity of the particular literary genre, literary work, author, screen adaptation, and so on, mentioning relevant figures and facts. If the problems or nay other aspects discussed in a literary work are still significant, these must be named and explained.
3. Scientifically invalid are the research papers in which the theoretical part provides a study of the concepts related to literary analysis, while the empirical one discusses the data obtained by studying classmates' reactions to the fictional work or their ability to recognize some literary elements. The focus must remain on literary works.
4. Papers studying classmates and/or written about the acquisition and teaching of English language and literature must be written in Latvian and handed in in the respective social sciences sections.
5. Everything that is discussed in the empirical chapter must have a corresponding theoretical basis. The theoretical chapter should not discuss issues that will not be approached in the empirical one.
6. While a couple of lines introducing the author of the literary work are necessary, longer overviews and studies of the biographies of the authors should not be included in the final version of the paper. The

goal is to study a literary work instead of its creator; the analysis of the author belongs to the field of social sciences.

Author Note

To access the pupils' research papers and reviews for research purposes, permission should be required from VISC, visc@visc.gov.lv.

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[5]   As the hyperlinks to the actual papers contain pupils' last names, to preserve anonymity, as the reference the hyperlink to the site containing all papers and the reviews of the respective year and section are given, in citations providing initials of the students that would allow the location of the respective research papers and their reviews.

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THE EFFECT OF USING CARTOONS ON PRIMARY SCHOOL STUDENTS' ACADEMIC ACHIEVEMENT IN SOCIAL STUDIES COURSES IN TURKEY: A META ANALYSIS STUDY

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ABSTRACT

The main purpose of this study is to investigate the effect of using cartoons on primary school students' academic achievement in social studies courses in Turkey. We preferred to conduct meta-analysis instead of traditional literature review. In accordance with the purpose of the study, we analyzed experimental research such as articles, dissertations, and papers which were obtained from Web of Science, ERIC, Scopus, Proquest, Ebscohost, Google Scholar, The Turkish Council of Higher Education Thesis Center, and Dergipark databases. We used ["cartoon" OR "comic" OR "caricature" AND "social studies"] search code in order to reach convenient publications. As a result of the literature review by using search code, 25 publications that were conducted as experimental studies between 2006 and 2020, were listed. 9 publications were eliminated since they had non-parametric values in normality tests and have no standard deviation values of control and experimental group posttests. Moreover, publications that have no achievement test were eliminated as well. Finally, 16 studies were included. We used R software to analyze the data. Cohen's *d,* Hedge's *g* values, and sampling variances of all publications were calculated. Heterogeneity and publication bias of studies were also checked before proceeding to the main analysis. The random-effects model was performed to calculate the overall effect size. As a result of the analysis, a large effect size was found. In other words, using cartoons has a large effect on primary school students' academic achievement in social studies courses in Turkey.

Keywords: Social studies, cartoons, meta-analysis, academic achievement.

Introduction

Cartoons are very effective educational materials that include a combination of visuals, text, pictures, and speech bubbles. They could make the teaching-learning process fun, activate students' interest and curiosity about the topic of the lesson, and develop students' critical thinking skills

(Daryanto, 2013; Dougherty, 2002; Haugaard, 1973; Hutchinson, 1949; Koenke, 1981; Megawati & Anugerahwati, 2012; Parker, 2014; Sones, 1944).

Cartoons are very enjoyable materials not only for children but also for adolescents. (Indra et al., 2019). While individuals interact with cartoons by reading or looking, it is expected that they actively participate in the process and establish a relationship with them (Rota & Izquierdo, 2003). In this case, an effective communication could be established between individuals and the cartoons. So, cartoons enable the effective cognitive learning process as well.

Cartoons are very effective educational material that can also enhance academic achievement (Haugaard, 1973; Koenke, 1981; Megawati & Anugerahwati, 2012; Sones, 1944). The results of studies revealed that students' academic achievements increase when teachers use cartoons as educational materials in their courses (Brocka, 1979; Hutchinson, 1949; Sones, 1944).

Well-known scholars in educational sciences also called attention to the importance of educational materials that include different kinds of elements. For instance, Gardner (2006) emphasized the effect of the use of content that appeals to different senses and intelligence on the learning process in the theory of multiple intelligences. Besides, Vygotsky (1980) explained that appropriate educational materials should be used in order to explore and construct knowledge. Regarding these statements, cartoons could be counted as one of the effective materials for teachers.

Considering the nature of cartoons, they could easily use many courses in different grades. Social studies course is one of the convenient courses where teachers can effectively use cartoons as educational material. Because cartoons focus on real-life situations and establish connections between real life and the classroom which serve the main objectives of the social studies course. Students learn much information about social life in social studies courses and cartoons present real-life situations by exaggerating. If they can be used appropriately, students can have fun while they learn information related to real life in social studies courses (Parker, 2014). Consequently, cartoons could help social studies teachers to make lessons effective and increase students' academic achievements.

It should be noted that while cartoons have many advantages, they also have some limitations. For instance, cartoons are very responsive to current and controversial issues. In this regard, social studies teachers should consider this aspect of the cartoons. Moreover, cartoons could also be too responsive to the culture. While a cartoon could be used without any problem in one culture, the same cartoon could not be easily used in another culture because of the politics and dynamics. For this reason,

we only focused on the studies that were conducted about the effect of cartoons in social studies courses in Turkey.

In the literature review, we found many studies that examined the effect of using cartoons in social studies courses on academic achievement in Turkey (see appendix 1). Based on the literature review, we wonder about the overall effect of using cartoons on students' academic achievement in social studies courses in Turkey. From this point of view, we aimed to investigate the overall effect size of the studies conducted in Turkey about the effect of using cartoons on academic achievement in social studies courses. It is expected that this study will contribute to the literature by proving the effect of using cartoons on students' academic achievement in social studies courses in Turkey through evaluating all studies' results.

Method

Meta-analysis was employed to investigate the effect of using cartoons on primary school students' academic achievement in social studies courses in Turkey.

Data Collection

A total of eight databases were consulted including Web of Science, Scopus, ERIC, Ebscohost, Proquest, Google Scholar, National Thesis Center of Higher Education Council, and Dergipark Academy in the study. ["cartoon" OR "comic" OR "caricature" AND "social studies"] search code was performed in order to obtain convenient publications.

The following inclusion criteria were used in the study:
1) Studies must have been conducted by experimental designs
2) Studies must have one control and one experiment group
3) Studies must include achievement test
4) Studies must be conducted in the social studies course
5) Studies must be conducted in Turkey.

Research that was obtained from the literature review in the light of these criteria is presented Table 1.

As shown in Table 1, 17 research were obtained from at the end of the literature review. However, when the methods and findings of the studies were examined, it was decided to exclude the research carried out by Marangoz (2019) because it was seen that it had some statistical errors and inconsistencies. As a result, the findings of 16 research were analyzed in the study. 7 of these researches are research articles, 1 of them is conference paper, 6 of them are master's thesis and 2 of them are doctoral thesis.

Table 1. Publications

Type	Author(s)	Year	Name
P.hD. Dissertation	Oruç	2006	Humor in Social Studies Teaching
Article	Aksoy et al.	2010	The Effect Of Cartoon Using On Students' Academic Achievements in Social Studies Teaching
M.A. Dissertation	Yarar	2010	The Using of Learning Objects Prepared in Flash Program and Supported by the Concept Cartoons in Social Studies
Conference Paper	Oruç and Teymuroğlu	2011	The Effects of Using Cartoon in Teaching Social Sciences on Attitudes of Students Against to Social Science Course
M.A. Dissertation	Baba	2012	The Effect of the Use of Concept Cartoons in Gaining of Citizenship Consciousness of Primary School Students
Article	Karakuş et al.	2012	The Effect of the Use of Cartoons on Students' Academic Achievement in "Environmental Problems" Issues in Social Sciences Curriculum
P.hD. Dissertation	Koçoğlu	2012	6th Grade Social Studies Lessons According to Criteria Evaluation of The Use of Cartoon
Article	Tokcan and Alkan	2013	The Effect of the Concept Cartoons to the Students of the Social Studies Teaching
Article	Eker and Karadeniz	2014	The Effects of Educational Practice with Cartoons on Learning Outcomes
M.A. Dissertation	Şentürk	2014	The Effect of the Caricature in the Books of Social Sciences on Teaching Target Concepts and Student Attitude
Article	Sidekli et al.	2014	An Alternative Method in Social Studies Education: Cartoon
Article	Topcubaşı and Polat	2014	The Effect of Concept Cartoons on Student Achievement in Social Science Teaching
Article	Akbaş and Toros	2016	The Effects of Using Interactive Cartoons and Concept Maps on Academic Achievement in Social Studies Teaching
Article	Çakır and Aydoğdu	2016	The Effect of Teaching the Topic of Environment Problems by Using Caricature on Students' Academic Success and Attitude Towards Environment
M.A. Dissertation	Balcı	2018	Use of Concept Cartoons in The Unit of "Living Democracy" at Social Studies Lesson
M.A. Dissertation	Marangoz*	2019	The Use of Cartoons in Social Studies Determining the Effect of 6th Grade Students on Success
M.A. Dissertation	Ada	2020	The Effect of the Use of Concept Cartoon in the Production, Distribution and Consumption Learning Success of the 4th Grade Social Studies Course

Note: * Since it has errors and inconsistencies in the quantitative findings, this study was excluded from the research

The literature review was conducted by both authors separately. At the end of the literature reviews, authors compared publications that they obtained from the database for the inter-coder reliability. As a result, the inter-coder reliability was found .86. In other words, 86% of studies that were obtained by two authors were the same. Different studies were discussed in terms of inclusion and exclusion criteria.

Data analysis

R Mavis software was performed in the analysis of the study. At the end of the literature review, Cohen's *d* values of all 16 studies were calculated. Cohen's *d* values and sample sizes of experiment and control groups were incorporated into the R Mavis software in order to calculate Hedge's *g* values of the studies. In addition, the heterogeneity of the studies was examined to decide the model for the analysis obtained data in the study. Meta-analyses were interpreted according to Cohen's *d* values (Cohen, 1988). For this purpose, the heterogeneity test was performed and the results are presented in Table 2.

Table 2. Test for Heterogenity

Q*	p
112.4033	< .0001

Note: *df* = 15

As it is shown in Table 2, the result of the test for heterogeneity was found significant. In this case, it is suggested to perform a random-effects model in order to calculate the overall effect size (Berlin et al., 1989; Shadish & Haddock, 1994). Based on this information, it was decided to perform a random-effects model in the study.

Before proceeding to the main analyses, possible publication bias was also checked. We used several methods to evaluate publication bias. Firstly, the funnel plot was examined. The funnel plot is presented in Figure 1.
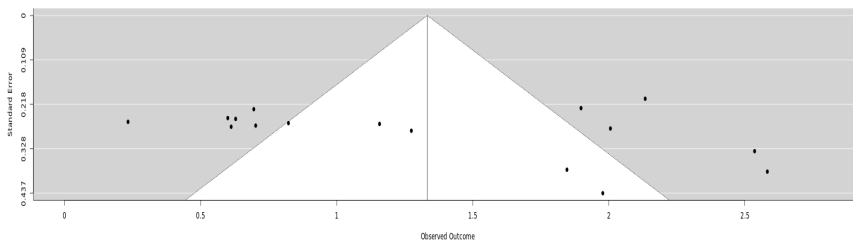
Figure 1. Funnel plot

When Figure 1 is examined, it is seen that the studies are distributed close to symmetry. Test for funnel plot asymmetry results was also examined in order to make a better decision regarding publication bias. The results of the test for Funnel Plot Asymmetry are presented in Table 3.

Table 3. Test for Funnel Plot Asymmetry

t	df	p
0.9585	14	0.3541*

Note: No publication bias if $p > .05$

Table 3 shows that the result of the test for Funnel plot asymmetry was not found significant ($p = 0.451$). In other words, it was revealed that research included in this study was not distributed asymmetrically. In addition, we also examined the value of Fail-Safe N calculation using Rosenthal Approach. Rosenthal (1979) suggests that fail-safe N value should be higher than $5k + 10$. In this research Fail-Safe N value was calculated as 2079 which is higher than Rosenthal's formula. Based on all these results, it was concluded that there is no publication bias in the study.

Results

16 of the results of studies were analyzed in the scope of the research. The sample sizes of the control and experimental groups, Cohen's *d*, hedge's *g* and sampling variances of the studies are presented in Table 4.

Table 4. Information About Control and Experiment Groups Populations, Effect Sizes and Sampling Variances of The Publications

Publications	N1	N2	Cohen's d	ES	SV
Oruç (2006)	30	30	1.2911	1.274	0.080
Aksoy et al. (2010)	35	31	1.1712	1.157	0.071
Yarar (2010)	30	29	0.2361	0.233	0.068
Oruç and Teymuroglu (2011)	29	29	0.7117	0.702	0.073
Baba (2012)	31	31	0.8331	0.823	0.070
Karakuş et al. (2012)	13	19	2.0290	1.978	0.191
Koçoğlu (2012)	75	75	2.1447	2.134	0.042
Tokcan and Alkan (2013)	40	38	2.0261	2.006	0.077
Eker and Karadeniz (2014)	28	28	0.6207	0.612	0.075
Şentürk (2014)	54	58	1.9110	1.898	0.052

Continued from previous page

Publications	N1	N2	Cohen's d	ES	SV
Sidekli et al. (2014)	32	33	0.6361	0.628	0.065
Topçubaşı and Polat (2014)	34	31	2.5666	2.536	0.111
Akbas and Toros (2016)	24	25	0.6068	0.597	0.085
Çakır and Aydoğdu (2016)	18	22	1.8836	1.846	0.144
Balcı (2018)	27	23	2.6239	2.583	0.147
Ada (2020)	40	40	0.7020	0.695	0.053

Note: * N1 = Control Group Population, N2 = Experiment Group Population, ES = Hedge's g, SV = Sampling Variance

As seen in Table 4, the study conducted by Koçoğlu (2012) has the largest sample size and the study conducted by Karakuş et al. (2012) has the least number of sample sizes among the studies. Furthermore, the lowest and highest Hedge's g values are found respectively 0.233 and 2.583.

As noted above, a random effects model was performed in order to calculate overall effect size. The result of the random effects model is presented in Table 5.

Table 5. Random Effects Model Result

				%95 Confidence Interval	
Estimate	se	z	p	Lower limit	Upper limit
1.3346	0.1912	6.9790	<.0001	0.9598	1.7095
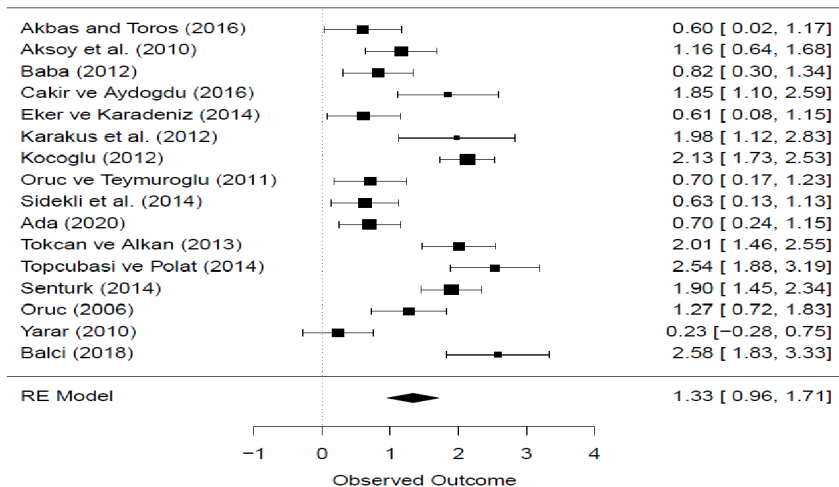
Figure 2. Forest Plot

As shown in Table 5, overall effect size value was calculated as 1.3346 and it was found significant ($se = 0.1912$, $p < .0001$). In other words, the results of the analysis reveal that using cartoons has a high positive impact on students' academic achievement. In addition, the forest plot of the study was also examined. Forest plot about the results of the study is shown in Figure 2.

As it is seen in Figure 2, the overall effect size which was obtained by the random effects model was calculated as 1.33. Moreover the lower limit of the overall effect size was calculated 0.959 and, the upper limit of the overall effect size was calculated 1.709 as a result of the study as shown in Table 5 and Figure 2.

Discussion

This study focuses on studies examining the effect of using cartoons in Social Studies courses on academic achievement in the literature in Turkey. By using the meta-analysis method, the overall effect size of these studies was calculated and tried to prove whether cartoons are effective on students' academic achievement in social studies courses as stated in related studies. In this respect, results of the study are quite important not only for the national literature, but also for the international literature.

The effect sizes of 16 different studies examined within the scope of the study were calculated and the overall effect size was determined by using the meta-analysis method. The studies which examined via meta-analysis reveal that the use of cartoons in Social Studies courses has a large overall effect (Cohen, 1988) on students' academic achievement. It is known that the education given in the primary school years is effective to raise awareness about social issues. It has been determined that when the Social Studies course is taught by the teacher with the traditional method, it causes demotivation about learning for the students (Indra et al., 2019).

Cartoons arouse curiosity in students, increase the interest in the lesson with their visual content, enrich their imagination, and create a feeling of comfort in students due to their humorous content (Beard & Wolf, 2001). As it was emphasized, effective learning occurs when the learning atmosphere is fun and interesting (Angkowo & Kosasih, 2007; Indra et al., 2019). As students' interest in the lesson is ensured, it is easier for students to adopt the materials used. In this context, cartoons could contribute to the formation of a positive learning climate in the classroom, as they are both an interesting and entertaining tool. Daryanto (2013) emphasized the similar contribution by stating that cartoons are effective in attracting students' attention and providing positive learning outcomes. Social studies courses should not only be theoretical; but also entertaining and supported

with visuals. In order to provide effective learning and teaching, it is necessary to use this kind of materials in the lessons (Topkaya, 2016). It is likely that teachers' use of cartoons and similar materials in the lessons will increase the success in the lessons. As a matter of fact, among the related studies, Sones (1944) and Brocka (1979) concluded in their studies that the use of cartoons has a positive effect on academic achievement.

Based on the results of the study, the following suggestions could be stated:

- All of the studies examined were carried out in an experimental design. It is suggested that researchers design different studies on this subject by using mixed and qualitative designs.
- For the effective use of cartoons in lessons, it is recommended that practitioners include this material in books and materials.
- The use of cartoons should be included more in the content of the textbooks offered to students by the Ministry of National Education in Turkey.
- Teachers should be informed about the benefits of using cartoons.
- By taking the results of this study as a reference, researchers can examine the relationship between the use of cartoons in Social Studies courses and different variables in developing teaching materials.

One of the limitations of this study is that it only deals with studies in Turkey. Since the Social Studies course is a discipline that differs from culture to culture, studies specific to this country have been examined in line with the research purpose. In this regard, it is recommended that researchers make comparisons between countries. In addition, considering only the studies on the use of cartoons in the Social Studies course is another limitation. In the future, it is recommended that researchers examine the effects of the use of cartoons on academic achievement in different disciplines. Since the use of cartoons has gained importance in recent years, it was determined that the studies examined were limited between 2006 and 2020. Maybe studies examining the effects of using cartoons in Social Studies courses in different countries can take us back to the past.

Conclusions

In this study, a meta-analysis method was used to calculate overall effect size of the findings obtained in studies examining the effect of using cartoons in social studies courses on academic achievement. Based on the findings and discussion, it was concluded that cartoons can be used as an alternative teaching material in Social Studies courses. The use of cartoons is an alternative educational tool in which different senses such as hearing,

seeing and watching are used. In recent years, among the active learning methods, cartoons have also found a wide place. Due to its structure, Social Studies is a primary education course that provides learning by reading and seeing as well as listening, and gathers different fields of science such as history, geography and citizenship under a single roof. Increasing academic success in these courses is as important as success in other courses. Since humans are the source of the Social Studies course, it is a discipline in which students gain necessary knowledge in social development, distinguishing sociological differences, recognizing nature and the environment, and using resources effectively.

As a result of the examination of 16 studies in this study, it was determined that there was a moderate effect between the use of cartoons and academic achievement. According to this result, the use of cartoons by teachers in Social Studies course is important. Academic success can be increased by giving in-service training to Social Studies teachers about the importance of using cartoons. Informative studies can be conducted on the usefulness of cartoons for students. Experimental studies can be designed to examine different alternative assessment tools that are thought to have an impact on academic achievement in the Social Studies course.

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Appendix 1. Studies Examined Through Meta-Analysis

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THE IMPACT ON THE MATHEMATICS CURRICULUM FOR GRADES 7–9 IN THE COMPETENCY-BASED APPROACH IN THE LEARNING PROCESS IN LATVIA

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ABSTRACT

From the school year 2020/2021 in Latvia has been introduced a new basic education standard as well as competency-based learning.

The aim of the article is to describe the main changes in the mathematics curriculum for Grades 7–9. The method used in this article is document analysis as documentary research. We also describe pupils' results in Latvian Regional Olympiad 2022 problems that are related to school topics.

The changes in the standard make some significant changes to the mathematics subject curriculum as well as focus on different teaching methods. Compared to the previous mathematics standard, some topics have been reordered and some have been moved to the secondary school. The correct use of mathematical language and use of different problem-solving strategies play an important role in the current teaching process. Understanding a mathematical concept or quantity is primary to practising calculating the numerical value of that quantity, which is necessary but secondary. In the past, more emphasis was placed on exercises and solving tasks according to a given algorithm.

As the education system in Latvia is in the process of transition, it is important to understand how the changes might affect pupils' knowledge and skills in mathematics.

Keywords: competency-based education, education system in Latvia, mathematics for Grade 7–9, mathematics olympiad, basic education standard, mathematics curriculum.

Introduction

In the 21ˢᵗ century, learning has become global, today's pupils will be competing tomorrow with young people all over the world. Comparing educational systems is quite popular, but a very difficult task as contexts can be very different and information needed for the comparison is not always available in English. Tests as TIMMS or PISA do a good job comparing different education systems in different countries, including a field of mathematics, but we cannot get detailed information from these tests, such

as what exactly is included in a curriculum of a particular country. (By the way, in both tests, Latvia shows a higher result than the average of these tests, for more, see (PISA 2018 Results. Combined Executive Summaries. Volume I, II & III, 2019) and (Mullis, Martin, Foy, Kelly, & Fishbein, 2020).) So, there are other different ways to compare education systems. We can compare educational systems via the following aspects: types of regulation, standards, and curricula; content of mathematics curricula; textbooks, evaluation system and exams, results in mathematical olympiads etc.

There are several research studies describing or comparing education systems, for example, education systems of different countries in a field of mathematics are compared in (Kácovský, u.c., 2022), (Moravcova, Surynková, & Hromadová, 2019), (Dudok, 2019), changes in the curriculum of a particular country are described in (Demirtaş, Arslan, Eskicumalı, & Kargi, 2015), (Prendergast & Treacy, 2017). There are also studies related to the national education reform in Latvia, such as (Birzina, Pigozne, & Cedere, 2021), (Kestere, 2019). However, these publications are from a different perspective and there are no publications that compare a mathematics curriculum of Latvia with other countries curricula or describe changes in mathematics curriculum in Latvia.

In Latvia children start school at the age of 7, complete 9 years of general basic education, followed by 3 years of secondary education. Basic education has two stages, Grades 1 to 6 (primary programme) and Grades 7 to 9 (lower secondary programme). (More about system of education in Latvia see (System of education, 2022).) As studies in Gymnasiums starts only from Grade 7, part of pupils decides to change school when they are in Grade 6. In this article changes in the content of mathematics for Grades 7 to 9 will be analysed.

In Latvia, the official document that sets out requirements for basic education is Republic of Latvia Cabinet of Ministers Regulation No. 747 (Regulations Regarding the State Basic Education Standard and Model Basic Education Programmes, 2018). To make it easier for teachers to fulfil the requirements of the law, in Latvia a sample of curriculum for mathematics (Mathematics for grades 1–9. Sample curriculum, 2020) is centrally developed and it is recommended when organizing the mathematics learning process.

Since 2020, the new standard that is developed as part of the National Centre of Education ESF project Nr. 8.3.1.1./16/I/002 "Competence Approach to Curriculum (School 2030)" (About Project, 2022) gradually is implemented in different grade groups. These changes affect educational institutions at all levels, from preschool to secondary school. The aim of the project is to develop a general education standard and teaching approach in schools in Latvia that will provide pupils with the knowledge, skills and

attitudes needed for modern life. In school year 2022/2023 all Grades are learning by the new standard.

The aim of the article is to analyse the main changes in the basic education standard and mathematics curriculum for Grades 7–9 compared to the previous standard (Regulations Regarding the State Standard in Basic Education, the Subjects of Study Standards in Basic Education and Model Basic Educational Programmes, 2014) and curriculum (Mathematics for Grades 7–9. Sample Curriculum, 2011).

Changes in the mathematics curriculum will have an impact not only on how pupils learn in school, but also on mathematics olympiads in Latvia. In Latvia, mathematical olympiads and contests are organized by the University of Latvia A. Liepa's Correspondence Mathematics School (UL A. Liepa's Correspondence Mathematics School, 2022). The largest olympiads organized by UL A. Liepa's Correspondence Mathematics School, in terms of the number of participants, are State Mathematical Olympiad in three rounds (~6000 participants) and Open Mathematical Olympiad (~3500 participants), where participate pupils from all regions of Latvia.

Method

The research subject of this paper is the changes in the mathematics curriculum for Grades 7–9 in Latvia. The study aims to overview the current situation of education system and teaching mathematics in Latvia. The method used in this article is document analysis as documentary research. We use primary sources (educational laws, national curricula, regulations), i. e., we analyse general and specific changes in mathematics curricula compared to the previous mathematics standard and curricula that were introduced in 2011.

The research is divided into three parts. The first one is to describe the general changes in the learning and teaching process. The second one is to describe specific changes in mathematics curricula compared to the previous mathematics curricula. In the last one is described pupils' results in the Latvian Regional Mathematical Olympiad (2nd round of the State Mathematical Olympiad) two problems that are related to school topics, because there are no final exam results yet that could give information on how the changes have affected pupils' knowledge and skills in mathematics.

Results and Discussion

This section is divided into three parts. In the first part we describe the general changes in the basic education system in Latvia according to the new approach in learning process. The second part is dedicated to the

specific mathematical content changes in Grades 7–9. In the third part we describe pupils' results in the Latvian Regional Mathematical Olympiad.

General Changes in the Basic Education System in Latvia

In the rapidly changing world, school content and organization form must be changed accordingly to the public interest and labour market demand. Last time fundamental changes in the basic education for only Grade 7–9, in Latvia were made as a part of the European Social Fund project "Natural Sciences and Mathematics" (Project "Natural sciences and mathematics". Archive, 2008), which was implemented between December 15, 2008, till October 31, 2011.

The mathematics curriculum and standard for Grades 1–6 were not changed and these grades until 2019 continued to follow the mathematics curriculum approved in 2005 (Mathematics for Grades 1–9. Sample curriculum for mathematics, 2005).

To ensure that a pupil gains all necessary knowledge, skills, and attitudes for life, since 2016 National Centre for Education has been implementing the project "Competence Approach to Curriculum (School 2030)", whose aim is to develop and introduce improved and modern content of secondary education and a new approach to teaching pupils from pre-school to secondary school. In this project with the term "competence" is understood as one's ability to use complex knowledge, skills, and express attitudes, to solve changing reallife situations.

The project states that nowadays we need people who are willing and able to learn throughout their whole life, can find solutions to unprecedented problems, creating innovation by using the results of their learning – acquired knowledge, skills, and habits. It emphasizes that an individual's personality is shaped starting from childhood, so a proficient pupil with referred personality traits is the goal of the improved curriculum and approach. That is why one of the key challenges while revising the curriculum is to reduce fragmentation, as well as passive, disconnected from real-life situations knowledge acquisition and isolated skill development. To provide every modern pupil with competency-based education, it is essential to improve the approach to learning alongside the content, reinforcing the shift from imparting readymade knowledge to guided learning, where pupils learn by going deeper (Objective: Proficiency, 2020).

Consequently, the content of mathematics is structured into six main parts with explanations (see (Mathematics. Basic Education, 2020) and (Regulations Regarding the State Basic Education Standard and Model Basic Education Programmes, 2018)):
- the language of mathematics,
- strategies and reasoning characteristic to mathematics,

- numbers, operations on numbers,
- elements of algebra and functions,
- data and elements of statistics,
- shapes.

More attention has been paid to mathematical language, building an understanding about the value of the individual mathematical symbols. These skills will be evaluated in the final exam of mathematics, previously in exams the correct use of mathematical language was not evaluated.

As was mentioned before, there is a special part that is dedicated to different problem-solving strategies. For example, it is recommended to acquire and use problem-solving strategies such as guess and check, make an orderly list, eliminate possibilities, use symmetry, consider special cases, look for a pattern, solve a simple problem, work backwards, check all possible cases. These strategies are not new, they are described in the works of G. Polya, for example, (Polya, 2004). Such strategies have been used for years when solving problems in mathematical olympiads. Hopefully this innovation in mathematics lessons will contribute to improving pupils' results in mathematics olympiads.

Continuity, systematicity and integrity are the guiding principles behind the new content. The content of mathematics is structured around the six main parts and is continued through all grades. For example, see Table 1, where is shown how the idea about numbers is developing through the grades.

Table 1. Learning Outcomes According to the Standard

3. Numbers are used to solving specific as well as practical problems. Every operation with numbers has a definite meaning and rules/algorithms		
3.1. Notation of the number and comparison of numbers		
Graduating Grade 3	Graduating Grade 6	Graduating Grade 9
3.1.1. Explain the decimal structure of a natural number, its relationship to notation in concrete examples using different models and representations.	3.1.1. Explain the decimal structure of a rational number (written as a decimal), its relation to notation in concrete examples.	3.1.1. Explain, using concrete examples, what the numerical value of an irrational number written as the square root of a rational number is and how to obtain it, including using digital tools.
…	…	…

The approach to learning process itself has also changed. If at the end of 20th century teacher was more like a lecturer imparting readymade knowledge to pupils, then this new approach emphasises that a teacher must become more like a consultant, helping pupils to construct new

knowledge themselves and apply them in new situations. Thus, the learning process is changed from transfer and referral of ready-made knowledge to questioning, conversation, situation analysis, productive exercises, enabling pupils to create new knowledge. The frontal teaching process changes to involvement and corporation where pupils actively work together and train not only specific subject skills, but also cross-cutting skills such as oral/written communication, critical thinking, working effectively in teams, and the real-world application of skills and knowledge. The accents in the study process are on using and creating knowledge in vide variety of situations and contexts not only to remember specific facts as a goal of a study subject. Understanding a mathematical concept or quantity is primary to practising calculating the numerical value of that quantity, which is necessary but secondary.

In the new standard are formulated both simple learning outcomes (for example, plot the graph of a linear function according to the given formula) and complex learning outcomes (for example, creates and reads different representations of a linear function, converts from one form of representation to another, using digital tools for these activities, in situations with mathematical and other contexts). Complex learning outcomes describe pupils' ability to apply knowledge, skills and habits in new situations. Learning outcomes for each pupil are measurable during the learning process (formative) or at the end of a topic (summative). The evaluation system also is changed from primary summative grading to providing meaningful feedback to the pupil on the learning process, pupil's reflections on his work and his or her learning process.

A teacher must set learning outcomes for a pupil for each lesson and must be able to check if each pupil has achieved them at the end of the lesson. During lessons, the teacher should provide appropriate support and feedback, as well as pupils should be encouraged to reflect on their learning and thinking.

Changes in the Mathematics Curriculum in Grades 7–9 and the Impact on Mathematical Olympiad

In this subsection curriculum example for Grades 7–9 in year 2011 (Mathematics for Grades 7–9. Sample Curriculum, 2011) and in year 2020 (Mathematics for grades 1–9. Sample curriculum, 2020) are compared, focusing on content changes in each grade.

In Table 2 is given the order of the topics in the previous and current mathematics curriculum, as well as number of lessons (indicated in brackets) intended for each topic. In the previous curriculum 5–6 lessons per week were planned for mathematics, but in the new curriculum 5 lessons per week are planned for Grade 7 to 9 (in Latvia one lesson is 40 minutes

	Curriculum 2011	Curriculum 2020
8.6.	Circle and disc (10)	What is common for quadrilaterals with perpendicular diagonals? (14–18)
8.7.	Solids (12) *(Moved to Grade 9)*	How to depict and describe spatial figures? (18–22)
8.8.	Probability calculus (11) *(Moved to Grade 7)*	
9.1.	Numerical sequences (16)	What characterizes the growth of linear and quadratic functions? (22–26)
9.2.	Quadratic functions (20)	Where in real life do we encounter non-linear relationships between quantities? (18–22)
9.3.	Quadratic equations and inequalities (26)	What are similar figures? (14–18)
9.4.	Geometric similarity (16)	How to find distances and angles in a three-dimensional coordinate system? (16–20) *(Moved from Grade 10–12)*
9.5.	Trigonometry (14)	
9.6.	Solving triangles (18)	
9.7.	Systems of equations and inequalities (22) *(Moved to Grade 7)*	

Analyzing this table, one can conclude that the topics of the new curriculum are formulated as problem situations in the form of questions, which are intended to arouse the interest of students. In the new curriculum topics have been moved from one class to another, as well as topics that were previously taught in secondary school (Grades 10–12) have been moved to basic school (Grades 7–9).

Continued from previous page

	Curriculum 2011	Curriculum 2020
8.6.	Parallelogram (23)	How to explain and make operations with expressions? (18–22) *(Moved from Grade 7)*
8.7.	Trapezium (18) *(Moved to Grade 9)*	How different functions are used for mathematical modelling? (19–23) *(Divided topic from Grade 9)*
8.8.	Quadratic equations (26) *(Moved to Grade 9)*	How to determine the length of the unknown side of a right triangle? (14–18)
8.9.	Pythagorean theorem (14)	
9.1.	Rational expressions (29) *(Moved to Grade 10)*	How similar triangles are defined and characterised? (16–20)
9.2.	Similar triangles (12)	What is common for all quadrilaterals whose exactly two opposite sides are parallel? (18–22) *(Moved from Grade 8)*
9.3.	Trigonometric relations (14)	How to use the ratio of two sides of a right triangle in problem solving? (16–20)
9.4.	Quadratic function (23) *(Combined with quadratic equations and inequalities)*	How to use factorization of expressions? (20–24) *(Moved from Grade 8)*
9.5.	Angles and segments in a circle (17) *(Moved to Grade 9)*	How to explain and use formulas in working with quadratic equations, quadratic functions? (20–24) *(Moved from Grade 8 and combined)*
9.6.	Circle and polygon (16)	How to describe situations with two unknown variables? (18–22)
9.7.	Equation and inequality systems (24)	How number sequences can be expressed with formulas? (17–21) *(Moved from Grade 8)*
9.8.	Overview of geometric shapes (24)	How to describe the relative positions of a circle and a polygon? (18–22)

As it is shown in Table 2, in some grades the order of topics has been reordered, some topics have been moved from one grade to another, some topics have been divided over several grades. The number of topics covered in Grades 7 and 8 has been reduced, thus decreasing the fragmentation of content.

In fact, many topics (especially in algebra) that are very significant for the secondary school mathematics topics have been moved to Grade 9, thus pupils do not have time for practising and strengthening their skills. These topics of algebra (factorising expressions, formulas like square of a sum, quadratic equations) are basis for mathematical olympiad problems

and as consequences it will reduce amount of knowledge that can be used in olympiads. Some topics (like statistics, combinatorics, probabilities) that do not need good technical skills, but need deeper and more general understanding of abstract concepts are moved to lower grades where pupils are not ready to acquire them, also for these topics practise and repetition is not so crucial. Moving the topic about rational algebraic fractions to the secondary school is very concerning, because pupils will not be given enough time to practice and develop these skills that are very essential, because elements of mathematical analysis must be learned at an advanced level in secondary school.

A significant content change in Grade 7 is introduction of a linear function before the topic about linear equations. Pupils first learn about different relations which are represented graphically as dots, intuitively forming conclusions that some relations must be represented as continuous lines. After that pupils learn about linear functions (see Table 2). As linear equations solving and equivalent transformations are now planned to learn after functions, then part of skills such as expressing unknown variable from a formula and finding an intersection of two functions that are given analytically cannot be taught within the topic about linear functions. Pupils can find the unknown term in a simple equation since Grade 5, so the analytical method of finding the intercept of a graph of a function can be learnt, but linear functions in examples must be simple. Similarly, in the topic 7.5 and topic 7.6 about geometry, problems should be selected so they do not involve equations that pupils cannot solve yet. The most essential change in the topic about linear equations is that to find a solution a graphical method is used first, but the analytical method is used afterwards.

The last topic in Grade 7 is about linear inequalities where also both methods (graphically and analytically) for solving are used. Compared to the previous curriculum, this topic includes an introduction to linear systems of inequalities that was previously acquired in Grade 9. In general, this change can be evaluated positively, because pupils have the necessary knowledge and abilities to learn systems of linear inequalities already in Grade 7, giving the opportunity to learn more difficult topics in further grades, when pupils have already acquired technical skills and begin to understand more abstract mathematical concepts.

There are number of changes in the content of the topics for Grade 8 (see Table 1). Several topics are split and moved to other grades.

Solving simple quadratic equations begins in topic 8.7 after learning about quadratic functions. Previously, the quadratic function was only taught in Grade 9, while in Grade 8 all types of quadratic equations were already taught. At the end of Grade 9, pupils should be able to solve

various quadratic equations, choosing the most suitable method of solution. Although the idea of sequentially learn different quadratic equations is good, solving quadratic equations mostly happens only in the middle of Grade 9 (topics 9.4 and 9.5) and the time for training and improving skills is insufficient.

Only in topic 9.4 (previously it was at the beginning of Grade 8), the methods of factorization of expressions are taught. This limits the content of mathematics olympiads, because there are many different problems from different subfields of mathematics, for example, algebra, number theory, combinatorics, which are based on factorisation. An additional change is splitting the quadratic equation solving into two Grade 9 topics. In topic 9.4 pupils solve quadratic equations in the form using the factorization, but in the topic 9.5 they solve general quadratic equations using the discriminant formula. If in the previous curriculum the discriminant formula was presented as a known fact (without a proof), then now pupils start solving quadratic equations by completing the square and then together with a teacher they prove formulas for the discriminant and the roots of the quadratic equation, using skills they have gained by completing the square. In this way, pupils' understanding of the concepts they learn is deepened, which is one of the goals for competency-based education. Skills like completing the square quite often are needed in mathematical olympiads (for example, proving inequalities), thus pupils will be able to link skills they have acquired in school lessons to the skills they need in mathematical olympiads.

Thus, over the course of three topics (one of which is in Grade 8), pupils learn to solve quadratic equations, starting with the simple ones. In the topic 9.5, they also obtain the formula for calculating the coordinates of a vertex of a parabola and learn how to solve quadratic inequalities.

Traditionally, the theoretical part of the content of the subject was taught first and then this theory was applied to problems with different everyday situations context, but in the new curriculum a reversed trend can be seen (for example, in topic 8.7. about quadratic function and inverse proportionality function).

As it was mentioned before, the topics about powers with integer exponents and polynomials are moved from Grade 7 to Grade 8. The new curriculum emphasises that the topic of polynomials does not involve acquiring the skill of how to factorize expression into multiples by putting common factor before the parenthesis, however when solving problems, where "think backwards" solving strategy is required, pupils already do this. For example, this skill is already used in a problem that requires pupils to fill in the missing values in a product.

$$2c \cdot (\ldots + \ldots) = 4c^2 + 6c.$$

Pupils' Results in Mathematical Olympiads

As the new curriculum is still in the process of implementation, data on pupils' results in diagnostic work or exam are not yet available to assess changes in the level of their mathematical knowledge and skills. However, in recent years, Latvian Mathematics Olympiads as their first problem have included one that corresponds to some school topics for an according grade (Avotiņa & Šuste, 2015). Usually in the Regional Olympiad participate about 6000 pupils from all regions of Latvia. We analyse two problem results of a school year 2021/2022 (pupils of Grade 7 and Grade 10 already are learning by the new standard and curricula where the emphasis is put more on deeper understanding than just on practicing) in the Regional Mathematical Olympiad for Grade 7 and Grade 10 (accordingly 662 and 453 participants' results, the total amount of participants in these grades were larger, but not all regions sent the results). In fact, these two problems are classical school tasks that could be solved already in Grade 7, so it would be expected that results are very high (especially for Grade 10 where pupils complement and deepen their knowledge of a linear function), because in the olympiad participate pupils that are good at mathematics.

(Problem 1, Grade 7) Find the area of the quadrilateral bounded by the lines

$$y = 1,\ x = -2,\ y = \frac{3}{5}x + \frac{21}{5}$$

(Problem 1, Grade 10) Points A(21; 1), B(20; 22), and C(10; 2) are given. Write an equation of a line passing through the point C parallel to the line AB.

The olympiad participants' solutions were corrected by mathematics teachers in the regions according to the common criteria (see Table 3 and Table 4), developed centrally by UL A. Liepa's Correspondence Mathematics School.

Table 3. Evaluation Criteria for the Olympiad Problem for Grade 7

The lines $x = -2$, $x = 3$ and $y = 1$ are drawn in the coordinate plane	3 points
The line $y = \frac{3}{5}x + \frac{21}{5}$ is drawn in the coordinate plane	2 points
Quadrilateral bounded by the given lines is set out.	1 point
It is calculated that $S(AECD) = 15$ square units	1 point
It is calculated that $S(AEB) = 7.5$ square units	1 point
It is calculated that $S(ABCD) = 15 + 7.5 = 22.5$ square units	2 points

Table 4. Evaluation Criteria for the Olympiad Problem for Grade 10

The coefficient of the direction of the line *AB* is obtained	3 points
It is justified that the coefficient of the direction of the line for the given straight line is $k = -21$, because parallel straight lines have the same coefficient of the direction	2 points
Equation of a gained straight line is written in a form $y = -21x + b$	1 point
Value *b* is calculated	3 points
Equation of a straight line $y = -21x + 212$ is written	1 point

Pupils of Grade 7 have learnt the topic about linear functions following the new curriculum, which is based on a deeper understanding. All the necessity knowledge for solving the problem is included in the new standard and curriculum (see (Mathematics for grades 1–9. Sample curriculum, 2020)) as learning outcomes or ideas about concepts:

- the formula of a linear function is $y = kx + b$ (Grade 7),
- draw the graph of a linear function according to a given formula (Grade 7),
- the numerical value of the area of a rectangle is obtained by multiplying the numerical values of the lengths of the adjacent sides (Grade 4),
- calculates the area of a rectangle using area units if the side lengths are known (Grade 4),
- on the grid sheet, determine the area of a right-angled triangle by adding it to a rectangle (Grade 4),
- calculates the area of a combined figure by expressing it as the sum or difference of the areas of two rectangles (Grade 4).

Therefore, it would be expected that participants in the olympiad would perform well in this problem that requires only the basic skills learnt in regular lessons. Unfortunately, the results for Grade 7 problem are low (see Figure 1).
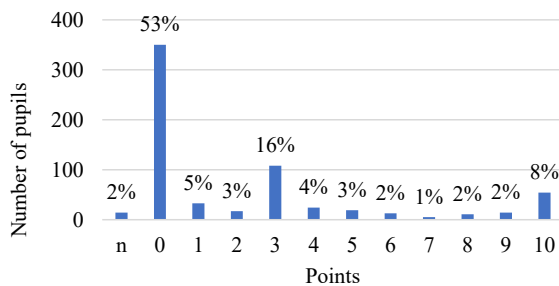
Figure 1. Pupils Results in Regional Mathematical Olympiad 2022, Grade 7

More than half of the participants scored 0 (if the participant did not even try to solve this given problem, he received *n*), which means they cannot even draw any of the given straight lines they have learnt in mathematics lessons. About 16% of the participants scored 3 points, which means that they can draw only elementary straight lines. Only 8% of all participants solved this problem completely. Thus, we see that even the participants of the mathematics olympiad (who usually in school lessons score higher results than others) are unable to use even basic skills, without being able to get to new and complex situations. As one of the reasons for the low results could be the fact that due to Covid19 school lessons were partly delivered remotely in the school year 2021/2022, whereas in the previous school year school lessons were held remotely almost all the time. The second reason could be that there are no textbooks yet, that correspond to the new curriculum, so it is possible that some teachers, during their lessons, are using the old textbooks where the linear function is one of the last topics in Grade 7 and so these pupils might not have had time to learn this topic before olympiad. But this means that teachers have not considered the Mathematics Olympiad Curriculum (Mathematics Olympiads programme, 2021), where it is specified that the topic of the linear functions must be acquired before Regional Mathematics Olympiad.

Pupils learn about linear functions in Grade 7 and deepen their knowledge about this topic in Grade 10 with the following learning outcomes:

- draw a straight line in the coordinate plane, if its equation is given,
- use relationships between slope coefficients of parallel and perpendicular lines,
- write and use the equation of a straight line, if given: 1) coordinates of one point and slope coefficient of the line, 2) coordinates of two points of a line, 3) position of the line in the coordinate plane, i. e. see if it is parallel to one of the axes.
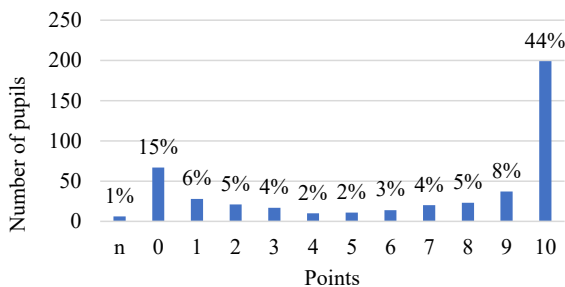
Figure 2. Pupils Results in Regional Mathematical Olympiad 2022, Grade 10

Thus, it is expected that in Regional Mathematics Olympiad in the problem about a linear function almost all participants get very high results. Although 44% of the participants solved the problem completely (see Figure 2), still 16% of the pupils scored 0 points and 15% received 1–3 points, which means that in the solution only some ideas that are related to the problem were mentioned.

It was expected that the results of olympiad participants in these classical school tasks would be high or at least good, unfortunately it was not confirmed. However, it is too early to draw conclusions that the new program does not provide an opportunity to learn something with a deeper understanding, or that the new curriculum is even worse than the previous one, because firstly, the curriculum has not yet gone through a full cycle, where pupils learn from Grade 1 according to the new approach, and secondly, the impact of the Covid-19 pandemic should also be taken into account since these pupils have been learning (or not learning) remotely for almost year and a half.

Conclusions

We have described changes in education system in Latvia as well as changes in the mathematics standards and curricula since 2011.

In the school year 2022/2023 all grades (Grades 1 to 12) in all schools in Latvia will be learning according to the new basic education curriculum, which sets out a competencybased learning approach. In the past, more emphasis was placed on exercises and solving tasks according to a given algorithm. The new approach is more based on comprehension. Problem-solving strategies are taught to pupils. Also, there is a greater emphasis on the correct use of mathematical language and the skill will be evaluated in exams.

Compared to the previous mathematics standard, some topics have been reordered and some topics have been moved to the secondary school. The content of mathematics is developed so that it is more united, successive and more suitable for nowadays pupils to gain a deeper understanding. This transition is a challenge not only for pupils, but also for the teachers, because textbooks corresponding to the new curriculum are yet to be developed.

The changes in the subject content and in the teaching approach are significant, but at the moment it is not known how these changes will affect pupils knowledge. As a transition from one curriculum to another is still ongoing, there has not yet been a final exam corresponding to the new curriculum, so there is no data to draw conclusions about pupils' results and analyze the impact on pupils' mathematical knowledge and skills. To

investigate the immediate effect (if any) that this curriculum change has on pupils' mathematical knowledge and skills, in this article the results for school level problems of the Regional Mathematics Olympiad were described. Overall, the results given by Grade 7 pupils are low, but it should be considered that these results may have been affected, for example, by the Covid-19 pandemic.

To draw qualitative conclusions about the impact of the new curriculum on the pupils learning, it is necessary that factors affecting the learning process, such as the Covid-19 pandemic, pupils that have only partially studied following the new curriculum, preparedness of teachers, lack of textbooks, no longer have a significant impact on pupils' results.

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SUBJECTIVE PERCEPTION OF LITERARY TEXTS TO PROMOTE TEXT COMPREHENSION IN THE FIFTH GRADE

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ABSTRACT

The ability to read and perceive a text is one of the foundations necessary for a person to work with diverse texts in different life situations. Thus, the proficiency of reading competence in the last decade is a topical study object. Observations show that at the end of the first stage of primary education (at the end of the third grade), students demonstrate technically good reading skills, that is, they can clearly read written texts, follow the boundaries of sentences and read in appropriate intonation. To promote reading competence successively in the second stage of primary education, reading skills must be continuously improved by using various texts, in addition to fiction. As an art of word, literature creates, encourages and develops different experiences of each future reader. The subjective perception of a literary work is related to the awareness of the reader's experience, synthesis of images, visualisation and awareness of fiction and reality, which is a prerequisite for understanding the text.

This research aims to explore the methodology used in literature acquisition to promote text comprehension by fifth-grade students through activating the subjective perception of literary work.

The objectives of this study are (1) to analyse research on the promotion of text comprehension and the subjective perception of literary work and (2) identify and analyse the text and subjective perceptions of fifth-grade students. Results of the text comprehension test and survey are examined in the study. The study involved 96 fifth graders.

Keywords: *literary didactics, reading skills, text comprehension, subjective perception, fifth grade.*

Introduction

The promotion of literacy has been the focus of researchers for many years, assessing the impact of reading on students' learning achievements and exploring the acquisition and creation of new knowledge and the cognitive and socio-emotional development of individuals. The modern approach to education is to provide a learning process that enables students to express themselves, be creative and work in a team, that is, to

analyse and critically evaluate information where reading skills are important. Literacy can be defined as the child's ability to decipher written symbols; it is a receptive communication process, the tool for critical thinking and decision-making and the means of acquiring knowledge (Medina & Villarreal, 2020; Tubele & Serova, 2020). Reading begins with observing the relationship between letters and sounds and continues as a psycholinguistic activity that focuses on the perception of meaning and then on the purpose of reading the text, evaluating and expressing one's attitude. In comprehension and conscious reading, when the content of the text is understood, the main idea expressed by the author and one's attitude towards what has been read (Drelinga, 2020).

As students' consciousness develops, reading a text becomes an intellectual activity linked to the development of inner speech, where text comprehension is important. Assessing the student's reading and comprehension skills is essential to the selection of appropriate texts. This step is a prerequisite for the student to improve his/her reading skills and develop sustainable reading habits. The teacher is responsible for the selection of texts and the teaching and reading methods used to promote students' text comprehension (Jose & Raja, 2011; Ozola & Geske, 2019; Medina & Villarreal, 2020).

The concept of literacy is the ability to read a text and determine the deepest meaning of its context. It is broader than the ability to read or understand a text. Literacy is a complex skill that includes different areas of learners' knowledge, experience and creative activity dimensions. It is influenced by the student's cultural experience, environment, and ability to understand (Drelinga, 2020).

Literacy competence is not a mechanical phenomenon. It is closely related to a person's thinking abilities and creativity and determines actions altogether and separately in a particular case when associative thinking is important. Literacy competence also refers to one's ability to reveal what is not directly stated in the text, including subtexts, symbols and meaning transfer (Laiveniece, 2011).

For literacy to become an acquired skill, the student must be able to find the most important information, paraphrase it and make notes; be able to describe a person, event, phenomenon or process; acquire skills to fix and identify the problem; acquire skills to form conclusions and summary; and explain new words and terms, learn pronunciation and activate memorisation (Drelinga, 2020) .

Reading a literary work is different from reading other types of text, such as an encyclopaedia, a journal article, or a textbook. Literary text comprehension requires an understanding of the comprehensive information content of a literary work, linguistic and semantic information. The influence

of a literary text on the reader is determined by its main feature, that is, it is an artistic reflection of real life. The reader perceives this text not only from its informative content but also from the meaning and idea of the work (Lytvynenko, 2015). As works of word art, the ideas, images, ideals and artistic values of literary texts are perceived, felt and comprehended in the form of aesthetic experiences. Thus, finding a balance between the intellectual and emotional components is important (Celmiņa, 2018). The perception of literary work begins from the perception of language formation, that is, the perception of sound and rhythm, to the analysis of the language and style of the text. The most important aspect of reading competence is the reader's cognitive activity and his/her perception and emotional development in literary competence (Skalberga, 2012). Accordingly, the acquisition of literature as a subject and the reading of literary works have two conditions related to the development of the reader's personality: (1) the development of critical thinking and (b) the development of the reader's personality (Lustyantie, 2015). The student's previous experience contributes to the understanding of literary work. Thus, reading literary works also positively impact how students know themselves and analyse their experiences (Skalberga, 2012; Freiberga, 2013; Culler, 2002).

Culler (2002) points out that while reading a literary work, the reader forms relationships with images and situations, taking into account his/her personal experience, memories and mood. This process gives meaning to the perception of literary work. Therefore, relying only on reading and lexical understanding of the text is insufficient.

As Skalberga (2012) points out, the stages of subjective perception of a literary work include (1) perception of content, (2) access to literary work and (3) a link to the reader's experience.

The subjective perception of literary work is based on the perception of content. The student obtains the first information about the literary text, which is facilitated by the answers to the questions who, where, when, to whom and about what. At this stage, the quality of reading depends on the development of the student's emotional sphere and ability to use imagination and visualise the information contained in the text. The student must engage in literary work. If the student fails to imagine, then he/she develops perceptual problems and cannot remember what and how things were depicted in the text. In the subjective perception of literary work, the content of the text should form a connection with the student's experience.

At this stage, the student uses his/her life experience related to the content of the text, experiences events, gets to know others, including their characteristics, actions and situations, and often comes to conclusions such as 'I like' and 'I do not like' (Buehl, 2009). If the literary text remains

only on the student's emotional level, then he/she cannot understand and judge the meaning of the text and does not become an interpretive reader (Skalberga, 2012; Culler, 2002; Lustyantie, 2015).

The student's experience is also important in the perception of literary work. The experience can be twofold: (1) self-experience, which the pupil acquires through direct perception, and which forms personal knowledge, skills and attitudes towards oneself, others and the world, and (2) shared self-experience gained through language and communication most and often is the experience of other people (Seilman & Larsen, 1989).

The reading methodology uses reading strategies to promote students' text comprehension. According to the competence approach, the reading methodology determines learning by learning to read. Text comprehension is based on the comprehension strategy, which is formed by successive student activities, that is, 'read, stop, think, ask, make a connection' (Robb, 2002).

Text comprehension is an active process of constructing meaning (Dooley & Matthews, 2009) and interacting deeply with the text (McKeown et al., 2009). Learning to read and reading to learn must take place simultaneously and continuously from pre-school to secondary school, and possibly in later life (Robb, 2002), along with other early reading skills (Dooley & Matthews, 2009).

Such a reading strategy helps the student to read and understand informative texts and encourages close interaction between him/her and the text (McKeown et al., 2009), reflecting the thought processes that experienced students can perform automatically (e. g. Neufeld, 2005).

The strategy involves flexibility and can be altered to respond to students' different needs. The student can use the strategy several times while reading a text.

The reading strategy steps include the following:
1. Read: The student reads the text and text images.
2. Stop: The student stops reading to identify unfamiliar words.
3. Think about it: The student is encouraged to analyse structural elements, such as signal words, and how they help to understand the text. Therefore, the student is encouraged to synthesise information.
4. Ask: The student asks the author questions about the text to promote comprehension.
5. Connect: The student considers other information about the topic he/she may know and connects with his/her personal experiences, other texts and/or world events.

During the 'read' phase (step 1), students are encouraged to pay attention to each information source provided in the text.

The 'stop' step (step 2) of the strategy involves a gradual 'connection and integration of information' (McKeown et al., 2009, p. 28). Using the

think-and-ask approach, the student can stop after reading a section of the text (e. g. a sentence, a short paragraph or a set of pictures).

The 'think about it' step (step 3) in the reading strategy encourages students to think about what they have read and identify structural elements, such as keywords and formatting, to promote comprehension (e. g. the words 'first' and 'next' in procedural texts can help) (Dymock & Nicholson, 2010). To enhance further students' understanding, the thinking step encourages them to summarise and synthesise the information provided in print and the text features and raise questions about the information provided in the text (Dymock & Nicholson, 2010).

The 'ask' step (step 4) of the reading strategy invites students to a dialogue with the author. In this step, students ask questions about the content of the text (Wilhelm, 2007). Consequently, the students start talking about the author of the text as if he/she were present and ask questions based on the author's words. The process of asking questions about a text encourages students to delve into the text to develop its meaning (Dymock & Nicholson, 2010).

The 'connect' step (step 5) of the reading strategy encourages students to combine prior knowledge and experience with the new ones (Dymock & Nicholson, 2010), reaching a personal level of the text (Neufeld, 2005).

The comprehension strategy is based on the teacher's ability to select carefully the texts they offer to students. For the initial understanding of the text, the text should consist of simple sentences, have several functions and must be a topic of interest to students (Jose & Raja, 2011; Lustyantie, 2015).

The essence of the text comprehension strategy is the recognition that the teacher encourages the student to read in-depth to construct the meaning of what is being read, rather than emphasising the amount of the text being read. Thus, readers can think critically and creatively. According to Jose and Raja (2013), teachers need to use various reading strategies in their learning, especially critical reading.

The characters depicted in a literary text experience varying feelings and emotions and act and organise differently, revealing the idea of the content of the text. Thus, it is important not only to perceive the actions and experiences of the characters as such but also to understand them in the context of the story (Bal et al., 2011). Given the inherent subjectivity in meaning, understanding and evaluating the experiences of literary images, opinions, actions and behaviours, as well as understanding the plot in context, is always subjective, which may differ from other readers' subjective meaning.

Freiberga (2013) states that a text that does not correspond to a child's experience interferes with the perception of the story, image experiences

and consequences of behaviour and action to form connections between parts of the story and understand the meaning of the language. Thus, no personal meaning is formed in the child's consciousness, and the child has no personal attitude towards the perceived meaning of the text.

In order to promote the subjective perception of the text, it is important to actualize the emotional experience during the perception of the literary text, which is related to the phenomenon of recognizing the experience in the work of art (Gadamers, 1999). Recognition of an event is not only a recall; it also draws parallels between the experience and its personal meaning. The depiction in the text can remain within it as a distant event described in the book. Such an event is not connected with the child's life but can also be actualised in the context of real life and reveal new perspectives, relationships and behaviours. The child's emotional experience is important for the perception and processing of the content of the text. It creates emotional responsiveness, actualises images and scenes in the imagination and activates thinking, forming a personal meaning of the perceived meaning of the text (Goldstein, 2009; Miall & Kuiken, 2002; Bal et al., 2011; Bal & Veltkamp, 2013).

Miall and Kuiken (2002) reveal that a fictional narrative (literary work) will influence the readers only if they can create a world of narration in their imagination that is real in their context. More importantly, an opportunity to be involved in the story can be created if it is realistic for the reader. This phenomenon will be reflected later.

Methodology

The research was conducted using qualitative and quantitative research methods: a test to assess text comprehension and a content analysis of various aspects of the subjective perception of text by fifth-grade students.

The research base consists of 96 fifth-grade students. In order to characterize/describe the subjective perception of the literary text, students from schools with different literacy levels were involved in the study. Parents were informed about students' involvement in the study. The research was carried out over the period from October to December of 2021 in literature classes, involving 5th grade students. According to the achievable results of the curriculum in the middle school education standard and sample programs (Cabinet of Ministers, 2018 (747)), students read two literary texts: classic and modern.

In the text comprehension study, each fifth-grade student was required to take a reading assessment test with a break of two lessons. The test included reading two texts and answering questions about the reading, which took 30 minutes to complete. The comprehension test includes the

following criteria: (1) finding information in the text (2) understanding the main idea of the text.

The test consisted of multiple-choice tasks. The first text intended for measuring students' text comprehension was a fragment from classical literature, whereas the second text was taken from the latest literature. Descriptive statistics were used to analyse the test results. The assessment of text comprehension was expressed at three levels: low, medium and high.

After the test, the students completed a questionnaire of self-assessment of their perception and comprehension of the read text for 10 minutes. The self-assessment survey consists of closed and open-ended questions in which students expressed their views on text comprehension and subjective perception. The survey results were analysed through content analysis and descriptive statistics.

Results

Students took a reading test. Research data were analysed based on the analysis of theoretical positions and the collected findings and using the quantitative data processing program Excel.

To study the fifth-grade students' subjective perception of the literary work, their understanding of the literary text must be clarified, specifically, whether the required information is found in the text, compared with their self-assessment of the information found in the text (Figure 1).

The results of the fact test, and the students' self-assessment indicate that finding information in the text is average. The results show that the students find the necessary information in the text better ($n = 64\%$) than they evaluate themselves ($n = 51\%$).
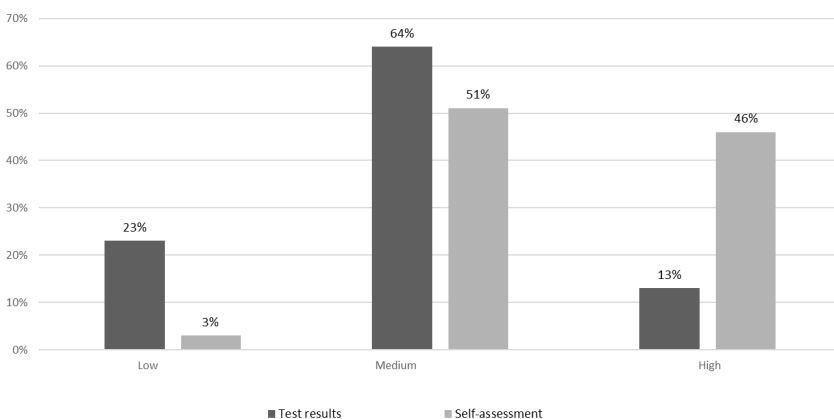
Figure 1. Comprehension of a Literary Text versus Information Found in the Text

A relatively large proportion of students ($n = 23\%$) find information in the text as low, in contrast to the fifth-grade students' self-assessment of finding information in the text ($n = 3\%$).

From the analysed text on finding information in the text, the tendency of fifth-grade students to evaluate their understanding of literary work is higher ($n = 46\%$) than their actual understanding ($n = 13\%$).

The perception of literary work includes the students' ability to examine and read the construction of meaning while reading the text, that is, to understand the main idea of the text (Figure 2).
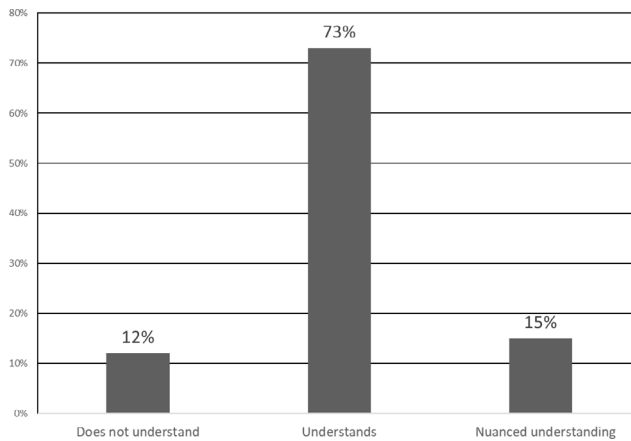
Figure 2. Comprehension of a Literary Text versus Understanding the Main Idea of the Text

According to the test results, the majority of fifth-grade students ($n = 73\%$) understand the main idea of the text. A relatively similar proportions of fifth-grade students do not understand ($n = 12\%$) or nuance the main idea of the text ($n = 15\%$). From the obtained indicators, it can be concluded that most fifth-grade students construct the meaning of the read text and understand its main idea of the text, which encourages them to think critically and creatively.

After the text comprehension test, the students conducted a self-assessment questionnaire. The first question refers to understanding the meaning of what was read at the lexical level: were there words in the text that you did not understand, or were there sentences that needed to be read again (Figure3)?
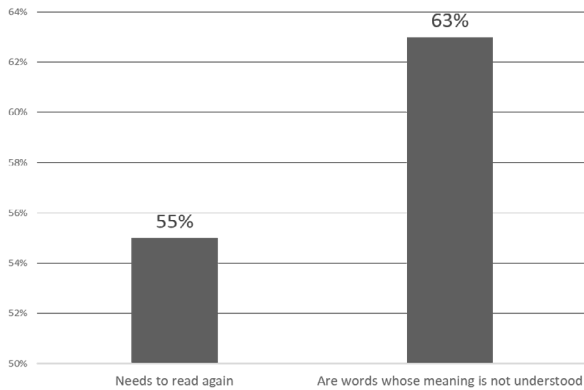
Figure 3. Self-assessment of Vocabulary Comprehension

The results of the questionnaire show that the majority of students ($n = 63\%$) had unintelligible words in their texts, whereas others indicate ($n = 55\%$) places in the texts that needed to be read again to understand them. Data on the comprehension of text vocabulary show that in both text forms, students have indicated words whose meaning they do not know. This result confirms the need to activate students' vocabulary with different layers.

The component of subjective perception is important for understanding the text. It is influenced by the reader's experience and ability to connect what is described to one's life events. Therefore, the study participants were asked if they saw a similarity in the text to their experience (Figure 4).
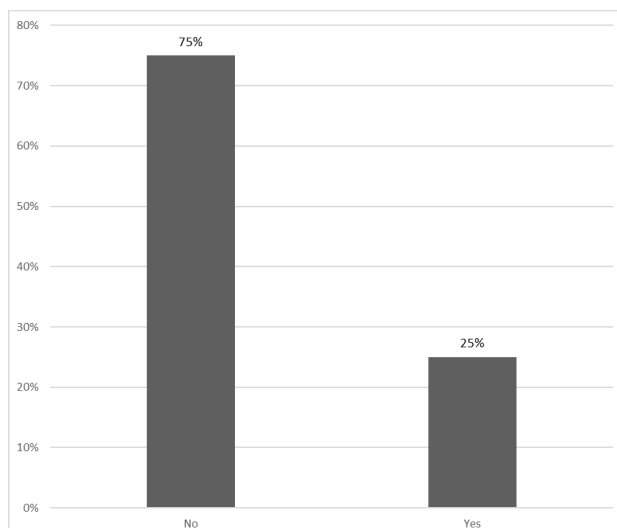
Figure 4. Self-assessment: Connecting to Experience

The research data show that the majority ($n = 75\%$) of the students did not see a connection with their experience. In the self-assessment survey, 25% of the students indicate that their experience with literary work is related and explain that they have had similar situations in their lives with friends ($n = 13\%$) and family members ($n = 7\%$) and see similar characteristics ($n = 5\%$) with a literary image. The analysis of self-experience and subjective perception of the text does not indicate a relationship with belonging to a particular gender.

The students' opinion on whether the read text was interesting was analysed. The outcome is an indicator of the subjective perception of the text. As a result, the text of classical literature was positively evaluated by 18% of the students, and the fragment of modern literary text by 52% of the students. Modern literature depicts events in the imaginary reality closest to the students. Thus, we conclude that the work of modern literature is more interesting to the students, though it has not promoted text comprehension.

Conclusions

1. The subjective perception of a text is crucial to the perception of a literary text. It begins with reading the text, evaluating lexical comprehension, empathising with the literary work and making connections with one's experience.
2. The results of the study indicate that the reading ability of 5th grade students is related to the subjective perception of literary works. The interest in the provided text depends on the understanding of the meanings of the words used in the text, which depends on the students' experience.
3. To promote students' literacy and motivation to read literature in the learning process, the selected teaching methods should activate students' subjective experience and develop their ability to connect what they have read with their experience.
4. Teachers must determine students' reading skills, text comprehension and experience to select suitable literary texts for them. They should be relevant to the students' needs and interests but have no statistical significance between classical and modern literature.
5. The teacher is responsible for the selection of texts to promote students' text comprehension, which would facilitate reading. While learning literature, it is more recommended to choose modern texts that meet the needs and interests of the students, offering different options for explanation of the incomprehensible words.

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TRANSFORMATION OF MATHEMATICS EDUCATION CURRICULUM IN PRE-SCHOOL IN LATVIA

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ABSTRACT

The acquisition of mathematics begins with the birth of a child within the cultural environment or socio-economic environment of the child. The child learns mathematics by investigating and exploring the environment in which they are located. The article describes and analyses theoretical materials and documents about applying the new education curriculum for the acquisition of mathematics in the competence-based approach in pre-schools in Latvia. From the school year 2017/2018, competence-based learning is gradually being introduced in Latvia. The research focuses on the analysis of preschool education guidelines (2018) developed by the National Centre for Education in the framework of the project "Competence-Based Approach to Curriculum," preschool curriculum (2019) and the document "Education for modern literacy: description of the teaching/learning content and approach" (Skola 2030) giving particular attention to mathematics to be acquired in pre-school. Such criteria as the aim, content, teaching strategies and assessment were chosen in the research aspect of applying the new education curriculum for the acquisition of mathematics in preschool. Main findings reveal the improvement of the aim, teaching and learning as well as teaching strategies of mathematics education in the acquisition of mathematics in preschool.

Keywords: *aim, content, curriculum, education, mathematics, pre-school.*

Introduction

Preschool education is an integral step of education which covers the time from the child's birth till the primary school, forms the children's future and to a great extent supplements their social, emotional, mental and physical development. The aim of this stage of education is to promote the children's social, emotional, cognitive and psycho-motor development in a planned and programmed manner after the family (Bronfenbrenner & Morris, 2006; Kostelnik et al., 2014). The preschool education stage which ensures a stimulating environment, which is rich in possibilities for

children aged 0 to 6 years, which is also known as the most critical period in the person's life, provides children with considerable opportunities that they are not able to obtain later in their lives (Yalçın & Erden, 2021). Researchers and policy makers agree that the early years are crucially important for children's development, and high quality preschool education helps to define children's positive trends in school and life (Wakabayashi et al., 2020; Damon & Lerner, 2006).

The acquisition of mathematics starts in the very early years and determines the mathematical academic achievements in the elementary grades (Purpura & Reid, 2016; Sarama & Clements, 2004; Geist, 2009). Children build important basis of mathematics knowledge and mathematical understanding interacting with important caregivers (Pakarinen et al., 2017; Ramani et al., 2015; Trawick-Smith et al., 2016; Zippert et al., 2020), especially, if adults ensure children with special pedagogical opportunities to acquire mathematics concepts and skills of mathematics (Notari-Syverson & Sadler, 2008; Copley, 2010; Anthony& Walshaw, 2009). Therefore, one of the important sources opportunities where the teacher gains support for promoting the planning and organization of the preschool child's acquisition of mathematical skills is the curriculum.

Decision making on what and how to teach forms the core of teaching mathematics. At the general level, the resource of making these decisions is the curriculum, which incorporates the aims, goals, and intentions of education (Valverde et al., 2002; Van den Akker, 2003; Van Zanten & Heuvel-Panhuizen, 2021). However, the curriculum in different countries can chang over time. Decisions on the anticipated outcomes largely depend on what is considered good education (Leung et al., 2006; Schmidt et al., 1997; Van Zanten & Heuvel-Panhuizen, 2021). Thus, new opinions on mathematics education can appear as well as the approach to teaching mathematics can change (Furinghetti & Karp, 2018; Karp & Schubring, 2014; Stanic & Kilpatrick, 2003; Van Zanten & Heuvel-Panhuizen, 2021). Scientifically validated curricula, which demonstrate positive child outcomes, are the heart of high-quality preschools. Hence, as new curricula are being developed and introduced into the field, more scrutiny is placed on their evidence. For example, National Center on Quality Teaching and Learning rates curricula on thirteen "components of effective curricula," which include curriculum effects on children's outcomes, comprehensiveness and depth in learning domains, individualized instruction, ongoing assessment, and professional learning (National Center on Quality Teaching and Learning [NCQTL], 2015; Wakabayashi et al., 2020).

A curriculum for a particular learning domain is not only a set of activities, in which a child can be engaged. The curriculum is developed taking into consideration the child's abilities, natural interests and needs. Information

reflected in the curriculum help the teacher to understand what the child is able to do at the respective stage and how to plan the pedagogical process, how to organize the learning experience so that the child understands the information which he/she has obtained and helps him/her understand how to apply this information in everyday life. The Education Law (1999) in Latvia states that the Cabinet of Ministers (CM) defines the guidelines for national preschool education, which include sample curricula that comply with the requirements of these guidelines (18[1] 01.06.1999). Since 2016, the National Centre for Education (NCE) has been implementing the ESF project "Competence-Based Approach to Teaching/Learning Content" (Skola2030) which aims at developing, piloting and sequential introduction of such content of general education and approach to teaching from preschool years to secondary school in Latvia that would result in learners acquiring knowledge, skills and attitudes necessary for life nowadays. One of the first binding education documents, which was approved by the CM on November 2018, is the guidelines for preschool education. Latvia started implementing the education process in accordance with the approved guidelines in all preschools as of academic year 2019/2020.

Methodology

The aim of the study is to analyse and assess what changes have taken place after the education content reform in the mathematics curriculum in preschool. Documents complying with the following criteria were selected for the document analysis: documents approved by the CM, intended for the stage of preschool education, incorporate necessary conditions for the acquisition of mathematics domain in preschool, define the implementation of preschool pedagogical process in Latvia, are issued in the period from 2010 till 2020. The analysis of curricula of teaching/learning mathematics in Latvia for preschool covers the analysis of documents:

- Preschool education guidelines (Regulations on national preschool education guidelines, 2018) developed by the National Centre for Education in the project "Competence-Based Approach to Curriculum";
- Preschool education curriculum (2019);
- Preschool education curriculum (Content curriculum of preschool education, 2012);
- Document "Education for modern literacy: description of the teaching/ learning content and approach" (Skola 2030, 2017).

The analysis of documents was based on the set research criteria and indicators: the teaching/learning aim of mathematics, the teaching/learning content of mathematics.

Results

The reforms started in the education system of Latvia in 2016 envisage reconsidering not only the content of teaching/learning domains of all stages of education but also how to teach so that the child acquires key competences. Changes are observed also in mathematics content and its acquisition. Comparing the preschool curriculum developed by the National Centre for Education in 2019 with the previous curriculum developed in 2012, there are noticeable differences that need to be considered as regards the formulation of the set aims of teaching and learning (see Table 1).

Table 1. The aim of mathematics education domain in preschool

Curricula of the teaching/learning content of preschool education (2012)	The curriculum preschool education (2019)
To promote children's **comprehensive and harmonious development,** taking into consideration the regularities of their development and needs in the acquisition of all the knowledge and skills necessary for life, based on the formation of positive attitude and learning by doing.	To form the **basic literacy in teaching/learning domains** – languages, social and civic, understanding of culture and self-expression, sciences, **mathematics,** technologies, health and physical activity.
To form **mathematical notions** in diverse activities and to promote the understanding of the **basic regularities of mathematics.**	

It is obvious that the aim of mathematics acquisition in the curriculum of preschool education developed in 2012 specifically emphasises the child's comprehensive and harmonious development as well as it indicates the formation of mathematical notions in diverse activities (Preschool education curriculum 2012, 15). In fact, Component #4 of the Preschool Curriculum Consumer Report (National Center on Quality Teaching and Learning [NCQTL], 2015) recommends a comprehensive whole-child approach (Wakabayashi et al., 2020). The formulation of the aim has some reference to the dominant role and position of the teacher or adult who plans and implements the acquisition of mathematics in preschool, and the emphasis is put on the acquisition of the content of mathematics. It is only the Regulations of guidelines of national preschool education, developed in 2012, that speak about the necessity to promote and develop the preschool child's cognitive activity, inquisitiveness, the understanding about the sequence of logical actions, the skills to substantiate their opinion, to observe and ask questions, which is an integral part of mathematics (Regulations on national…, 2012).

In recent years, content-specific curricula or targeted curricula, which focus on specific content areas or skills, such as literacy or mathematics, have shown evidence of enhancing children's learning (Jenkin & Duncan, 2017; Weiland et al., 2018; Wakabayashi et al., 2020; Wortham, 2002). It is possible to identify it also in the aim formulated in the curriculum of preschool education, developed in 2019, which points to the necessity to form the basic literacy in several teaching/learning domains, including mathematics. The aim of the acquisition or literacy at the end of preschool education has been defined for every teaching/learning domain. The literacy incorporates both knowledge, understanding and basic skills, transversal skills, and value-based habits (Preschool education curriculum, 2019). Thus, the new formulation of the mathematics domain envisages the acquisition of learning outcomes of the mathematics domain in compliance with the big ideas.

Comparing the curriculum of 2012 with the curriculum of 2019, there are no considerable differences in the teaching/learning content. The greatest differences are observed in connecting the content units of the mathematics domain with the big idea, which also outlines the process of mathematics, revealing that mathematics is applied in everyday life and how it integrates in other teaching/learning domains (see Table 2).

Table 2. The teaching/learning content in preschool

Curricula of the teaching/learning content of preschool education (2012)	The curriculum preschool education (2019)
The content of the teaching/learning content domain or integrated subjects: the Latvian language; sciences; **mathematics**; social sciences and ethics; music; physical education and health; visual art; home economics and technologies	The compulsory teaching/learning content is formulated as the **basic literacies** in the languages, social and civic, understanding of culture and self-expression in art, sciences, **mathematics,** technologies, health and physical activities teaching/learning domains

It is evident that the teaching/learning content in the document developed in 2012 is formed by the content of the teaching/learning content domain or integrated subjects where the most important components are described for each teaching/learning content domain. For instance, science (the development of the language and orienteering in the surroundings, sensory development, actions with objects, getting acquainted with a nature); mathematics (sensory development, construction, formation of mathematical notions, mathematics); social sciences and ethics (the development of a language and orienteering in the surroundings, development of social skills, actions with objects, getting acquainted with the nature and processes of public life). The indicated components of the teaching/learning content

allow noticing and implementing the integration of the STEM content and less possibilities for integrating the greatest part of the teaching/learning content, transdisciplinarity (2012). STEM combined with art can make significant contributions to humanity, and humanity being a part of its environment, not a means of establishing superiority. While doing this, it can be ensured that children understand the world by gaining experiences through theoretical knowledge and real situations. From this point of view, by integrating STEM with learning by doing, which is a must for early childhood, children can be supported to experience a reality, question it, and establish relationships between situations and production-oriented activities. This is discovering a nature and the world in innovative ways, solving problems while exploring and producing while solving problems (Affifi, 2019; Yalçın & Erden, 2021: Taylor & Harris, 2014).

In turn, the compulsory content of preschool education in the transformed curriculum is formed by values and virtues, general or transversal skills, knowledge, understanding and basic skills in teaching/learning domains. The compulsory teaching/learning content is focused on the most important aspects for the child in the acquisition of this content "so that it results in the formation of literacy (competence) as a complex outcome of the child's learning during a longer period of time" (Preschool education curriculum 2019, 7). Transversal skills (critical thinking and problem solving, innovation and entrepreneurship, self-guided learning, collaboration, civic participation and digital skills) are the basis of the compulsory content of preschool education which define the learning outcomes for the child. The mathematics teaching/learning domain is the most closely connected with such transversal skills as critical thinking and problem solving. The learning outcomes of these transversal skills envisage that the child will be able to apply the algorithms of everyday activities in familiar situations, will formulate simple connections and the sequence of actions, will establish causes and consequences of familiar situations and events, will evaluate the reliability of information, will make decisions, will make choices and will assess the work done (Preschool education curriculum, 2019).

There is an assumption underlying early childhood mathematics curricular standards that informal mathematical knowledge is multi-dimensional. The National Research Council's (2009) report on mathematics learning in early childhood recommends three key strands of mathematics teaching/learning content in early childhood classrooms – number and operations, geometry, and measurement. The National Council of Teachers of Mathematics (National Council of Teachers of Mathematics [NCTM], 2006) also recommends these same three strands of early mathematical content in their Pre-kindergarten Curriculum Focal Points for instruction as part of a coherent mathematics curriculum from pre-kindergarten to

eighth grade (Milburna et al., 2019). These priorities in the mathematics teaching/learning content can be found also in the documents published in 2012 and 2019 (see Table 3).

Table 3. The content of mathematics education in preschool

Curricula of the teaching/learning content of preschool education (2012)	The curriculum preschool education (2019)
Number and counting (numbers from 1–5, composition of numbers, simple text tasks, comparison of sets of objects)	The language of mathematics. Quantity and numbers (quantity, number, digits, the composition of the number)
Size (notions, comparison, measuring with the conditional measure)	Connection between sizes (connections between objects, sets of objects, the measuring skill)
Geometrical figures (circle, triangle, quadrangle)	Exploration of features, placement and characteristics of shapes (different forms, placement of the object in space, plane)
Orienteering in time and space (direction, place, time)	

The preschool education curriculum of 2019 places equal emphasis on both the content of mathematics (number and counting, geometry, measurement of sizes, quantities, data analysis) and the process (problem solving, reasoning, communication, connections, and representation). For the first grader to became a flexible thinker who knows all the mathematics, understands of what has been learnt, is able to apply mathematical ideas and skills in everyday life. The acquisition of content is not enough because the process is also important (Brewer, 2007; Bullard, 2017, Robertson, 2017; Epstein, 2014; Cotton, 2019; National Council of Teachers of Mathematics, 2006).

The learning outcomes of the child in the mathematics teaching/learning domain in the curriculum of 2019 are grouped into three content units and are connected with the respective big ideas. The basis of literacies is the big ideas or the most essential key notions of the mathematics teaching/ learning content domain which the child has to comprehend in order to form a common understanding about the surrounding world and oneself in it. The language of mathematics is used for communication and scientific description of concepts, ideas, problem solutions. Numbers are used for solving concrete, practical tasks because each operation with numbers has a particular meaning, and for their execution there are concrete rules/ algorithms (2019). During the preschool period children develop definite basic skills connected with the acquisition of numbers. Four skills have been identified as important indicators of a child's early mathematical learning and development: mapping between number symbols and quantities, order

processing, cardinal principle knowledge and digit recognition (Cahoon et al., 2021).

Connections between quantities are described by algebraic models and functions. Using these models for problem solving, they are transformed ensuring equivalence. Data about objects, situations, events, processes can be mathematically processed and analysed to make well-grounded decisions. To solve a problem in a way characteristic to mathematics means to identify structures, systems, connections, to form generalisations and to prove them (2019). Preschool children also demonstrate knowledge of informal measurement, including the direct comparison of objects on physical dimensions (e. g., length) and the use of non-standard units to measure objects. Conceptual skills that underlie or are associated with children's knowledge of non-standard units of measurement include partitioning (i. e., mentally separating an object into same sized units), unit iteration (i. e., mentally recognizing the length of a small item fitting within the length of a longer one), and conservation (i. e., understanding that if an object is moved or rotated it is still the same length). Informal measurement abilities have also been the focus of curricula activities developed for preschool math interventions (Clements & Stephan, 2004; Klein & Starkey, 2004; Sophian, 2004). For example, curricula activities may help children learn to directly compare the relative length of two objects (e. g., which pencil is longer?) or to use a non-standard unit of measurement (e. g., which string is about the same length as these cubes?) (Milburna et al., 2019).

The learning content has been specified in the acquisition of geometrical figures supplementing it with the process of exploring the figures. The exploration of the features of shapes, their placement and characteristic dimensions allow solving concrete and also practical problems, formulating general conclusions about objects, space and shape (2019). In addition to numbers and operations, young children develop knowledge of geometry, such as recognizing and analysing two and three-dimensional shapes and reasoning about spatial orientation, during the preschool years (Clements et al., 2004) identified a developmental progression for geometric understanding from pre-kindergarten to second grade. It begins with knowledge about physical shapes, then mental imagery about shapes and constructs, and finally entails explicit geometric knowledge. Furthermore, these early geometric abilities have been associated with more general mathematics achievement in school (for a review, see National Research Council, 2009). As such, geometric abilities that emerge in preschool are important precursors of children's later mathematical learning (Milburna et al., 2019).

It is necessary, however, to remember that early math skills are acquired when children spend more time in content-specific instruction

(Burchinal et al., 2016), especially if skills are acquired gradually and diverse possibilities are provided for acquiring each skill before moving to teaching the next skills (Bierman et al., 2008; Clements & Sarama, 2007; Powell et al., 2010; Burchinal et al., 2021).

Conclusions

The new mathematics curriculum incorporates the planning of a mathematics teaching/learning content and a learning outcomes. The innovation in the new mathematics curriculum is defining the transversal skills.

The content of mathematics education has not changed in the mathematics curriculum. Mathematics literacy is based on the BIG IDEAS/the basic concepts of learning content that children need to understand in order to develop a common understanding of the surrounding world and themselves in it.

The teaching/learning process of mathematics education includes teacher and child's responsibilities in the learning process in the mathematics curriculum. The child acquires the mathematics content through an integrated learning process in play activities/play lessons.

The possibilities to improve the child's personality are connected to the content of education. The content of mathematics education consists of values and virtues, as well as transversal skills. Evaluation emphasis shifts from evaluation of results to evaluation to improve learning.

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DEVELOPMENT OF EMOTION REGULATION BY INTEGRATING MINDFULNESS PRAXIS IN EARLY CHILDHOOD EDUCATION

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ABSTRACT

Rapid technological development and information overload has shaped the identity of the 21st Century and has had an immense impact on many social aspects of human life including education systems and children across the world. In their early years, children experience rapid flows of information and a vast range of emotional stimuli every day which, without the ability to effectively self-regulate the emotional responses to these stimuli, can cause anxiety, cognitive overload, socialisation problems and uncontrollable emotional release, resulting in psychological distress for everyone involved – children, parents, and educators. Furthermore, in early childhood education long-term implications must always be considered as, during such overwhelming moments, a child is not able to effectively engage in socialisation or learning processes and subsequently, this can have a negative effect on overall long-term development and the life of a child. This research confirms that, in the past decade, social emotional learning has, for many education institutions across the world and systems worldwide, become an integral part of learning. Nevertheless, in early childhood education research, there remains a notable knowledge gap concerning the lack of systematized knowledge and practical tools to support the development of emotion regulation skills in early childhood education. This paper presents a theoretical and qualitative multi-method study, including a pedagogical intervention, providing scientifically grounded answers and practical advice for educators and early childhood education institutions on how to integrate mindfulness praxis to promote emotion regulation skills of children aged five to six. The results of the research show that meaningful and qualitative support of emotion regulation skills development are provided, through the inclusion of mindfulness praxis as a purposeful and systematic part of early childhood education.

Keywords: *early childhood education, education, emotion regulation, mindfulness, social emotional learning.*

Introduction

Rapid socio-economic shifts and technological development have changed and, in fact, shaped the framework and expectations of the education system

and the actual skills a child needs to be successful in life. Recent studies (World Economic Forum, 2020, Kenworthy & Kielstra, 2015) show clear evidence that the skills needed to prepare a child for successful future life are not limited to just academic knowledge. In the World Economic Forum 2020 report emotional intelligence is defined as one of the top ten skills for employee success (World Economic Forum, 2020, Benko, 2020).

Furthermore, when considering the quality of life, mental health, sociological perspective, and educational achievements, it should be noted that all these areas are influenced by the emotional, psychological, and social well-being experienced in childhood (Amundsen et al., 2020). Thus, social emotional skills have been recognized as essential when discussing, practicing, and researching educational outcomes (Kenworthy & Kielstra, 2015, Chernyshenko et al., 2018). Social emotional skills have been defined as "the abilities to regulate one's thoughts, emotions and behavior" (Chernyshenko et al., 2018, p.10.). One of the most renowned frameworks in the field of social and emotional skills is the Big Five model (Digman, 1990, John et al., 1991), which categories the social emotional skills into five categories:

1) openness to experience (open-mindedness),
2) conscientiousness (task performance),
3) emotional stability (emotional regulation),
4) extraversion (engaging with others) and
5) agreeableness (collaboration).

One of the social emotional skills that plays a basic role in a child's ability to learn, socialise, develop cognitively, and integrate into society is emotion regulation skill (Gunter et al., 2012). Especially in early childhood education (3-6), children experience many social and emotional difficulties. When considering these problems, emotion regulation skills can help children to deal with social, emotional, and behavioural difficulties (Liman & Tepeli, 2019). By enabling a child to develop these skills, the child's emotional, behavioural and socialization difficulties decrease, while the child's overall well-being increases, which in the long-term results in the healthy development of the child, as well as the more qualitative learning experiences and early academic success (Amundsen et al., 2020, Nieminen & Sajaniemi, 2016).

As this research confirms, in the past decade social emotional learning for many education institutions and systems worldwide has become an integral part of learning. Nevertheless, in early childhood education research, there remains a notable knowledge gap concerning the lack of systematized knowledge and practical tools required to support the development of emotion regulation skills in early childhood education. This study presents a theoretical and qualitative multi-method study, including

a pedagogical intervention, in order to provide scientifically grounded answers and practical advice for educators and early childhood education institutions on how to integrate mindfulness praxis to promote emotion regulation skills of children aged five to six.

Noting the importance of these skills in supporting healthy development and the learning process of a child, this study has focused on the concept of emotion regulation (Gross, 2015). Gross defined emotion regulation as "the process of shaping which emotions a person has, when he has them and how a person experiences or expresses these emotions" (2015, p. 6). As highlighted in the definition, in order to effectively regulate emotions, a child has to be able to recognise, identify, understand, disclose and guide his or her emotions. Emotions have a major role in the life of a child, as children learn to recognise and interpret different situations, estimate verbal and non-verbal communication, build awareness about causes and consequences and note changes in their bodies and feelings (Colverd & Hodgkin, 2011). Gross also emphasized that emotion regulation skills aid in developing a child's ability to display empathy, to build social relationships and communication skills, as well as supporting cognitive functions and helping to pay attention to important information and stimuli (2015). In addition, emotion regulation skills aid in the development of a child's self-awareness, which is a key skill needed to provide a self-regulated learning process (Nieminen & Sajaniemi, 2016, Gross, 2015).

As already other countries, also Latvian competence-based curriculum model Skola2030 emphasises self-regulated learning process as one of the transversal skills essential for the development of a child's emotion regulation skills (Vanags, 2019, Oates, 2019). Moreover, neuroscience research, as well as the 21st Century understanding of child's brain development, emphasises the importance and connection between emotions and the learning process (Davis & Levine, 2013). As already highlighted, the necessity and importance of teaching social emotional skills are emphasised both in the scientific literature, as well as the practical guidelines of the European curricula frameworks. However, on the practical side, there is still a notable lack of structured guidelines providing the necessary knowledge and practical tools for educators on how to, based on the scientific evidence, promote, and support the development of a child's emotion regulation skills meaningfully and systematically.

Using the scientific evidence which emphasises the potential of structured tools and engaging training routines for the development of emotion regulation skills, this study proposes mindfulness praxis as a tool to promote the development of these skills in early childhood education. Mindfulness praxis in education system is used as different actions and practices used in the pedagogical tradition. Mindfulness as a praxis has already been practised

and reported in early writings for over two thousand years (Baminiwatta & Solangaarachchi, 2021). Its roots can be found in different religious practices such as Christianity, Buddhism, and Islam (Giang, 2020). But its rise in the Western world came about at the end of the 20th Century, when Professor Kabat-Zinn reported using it in the field of medicine (Kabat-Zinn, 1982). Kabat-Zinn defined mindfulness as an "awareness that arises through paying attention, on purpose, in the present moment, non-judgmentally" (2012, 40: 10).

In the second decade of the 21st Century, mindfulness praxis had gone far beyond religious practices or even the medical field. In the 2010s, mindfulness integration into the education system became more and more prevalent worldwide through different programs, such as Inner Resilience, Mindful Schools, MindUp, Learning to Breath (Sciutto et al., 2021). Researchers have emphasized the ability to increase persistence of attention, concentration, and self-regulation skills to develop empathy, kindness, compassion, and social skills. As well as to provide tools to help overcome cognitive overload as the most important reasons why mindfulness is being integrated into education practices (Guendelman et al., 2017, Siegel, 2007). In addition, Rix and Bernay have highlighted that mindfulness helps children to have more meaningful involvement in the learning process (2014).

Mindfulness praxis as a concept helps to explore the world through feelings and senses, which is very appropriate for early childhood education. It includes different breathing techniques, imagination, and a range of methods to relax the body and mind (Viglas, 2015). The main elements used during mindfulness exercises are mindful body, breathing techniques, mindful movement, mindful looking and listening, mindful eating, mindful emotions, mindful heart, which involves kind thoughts, generosity, and thankfulness (Perrier et al., 2020). All the elements are included in abundance of exercises which can be also used and adapted for children. These mindfulness techniques and core elements help children to get a better knowledge and understanding of themselves, including their emotions, through different practical activities, feedback and discussions about their experiences and feelings (Viglas, 2015). Although most of the mindfulness exercises are not directly linked to emotions, they aid in the development of skills needed for emotion regulation. As well as support of the learning process, motivation, attention, and self-awareness, which as a result help in the development of self-regulation skills, which, in the long term, results in behaviour changes (see Figure 1).
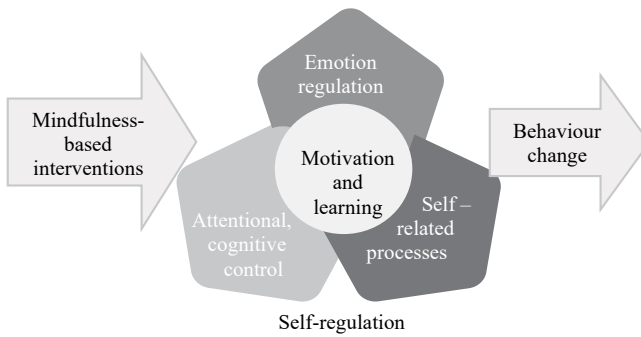
Figure 1. Researcher's concept based on Schuman-Olivier et al., 2020

Methodology

To answer the research question – how to use mindfulness praxis to develop emotion regulation skills in early childhood education? – a systematic literature review and empirical research were conducted. The participant sample of the research was a group (No. 13) of five-to six-year-old children, at Riga private early childhood education institution, whose parents agreed to be part of the research. This sample consisted of seven children aged five and six children aged six years, what was chosen because of the social setting this age group children are part of – the preparation to start to attend the school and need to develop skills for this process.

The study design aimed to observe and evaluate the emotion regulation skills of the participants, based on ten skills used as criteria which were defined based on an analysis of the scientific literature and early childhood education curriculum (in Latvia). The criteria included such skills as the ability to name emotions, recognise emotions and emotion management skills (see Table 2). During the study there were two evaluations carried out prior to the pedagogic intervention – the participants were introduced to the mindfulness praxis and involved in practising it, as well as post-pedagogic intervention, to observe and analyse the impact of mindfulness praxis. The research was implemented in five stages, some of which were implemented consecutively, and some were implemented in parallel (see Figure 2). Research was undertaken during a period of five months in 2021 in person.

The first stage of the research involved an analysis of the scientific literature. It included analysis of theories and a description of core concepts and ideas of emotion regulation and mindfulness praxis. The systemic literature analysis was conducted using the Web of Science database and an additional online search for policy reports and case studies.
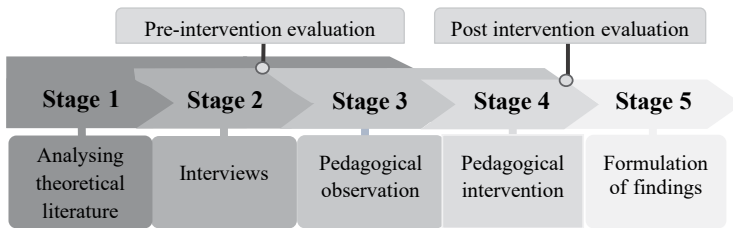
Figure 2. Methodology scheme

The literature selection search focused on five main keywords: *emotion regulation skills, social emotional learning, early childhood education, mindfulness praxis,* and *mindfulness in education* from the period 2000–2021. As a result, a total of 2,563 sources were pre-selected for analysis, but only forty-eight publications were directly relevant to the scope of the study.

In order to identify ways by which integration of mindfulness praxis in the learning process promotes development of emotion regulation skills, empirical research was conducted consisting of four stages. The second stage of the research involved two interviews with early childhood education teachers who utilise mindfulness praxis in their everyday pedagogic practices, and one director of an early education institution who teaches mindfulness lessons to children at the institution.

The third stage included evaluation of the participant sample, implemented by the sample group participating in a total of ten mindfulness lessons (pedagogical observation), which were implemented once a week for approximately forty minutes each. During those lessons pedagogical observations were transcribed for further analysis. These lessons were prepared based on the School of silence materials (*www.klusumaskola.lv*) which is a Latvian non-governmental organisation rooted into the Mindful school's curriculum (*www.mindfulschools.org*). Through it children are introduced to the mindfulness praxis and apply it through different exercises and experiences.

Stage four included another five weeks of the lessons – functioning as apedagogical intervention – when mindfulness exercises were integrated into the everyday learning process (a total of twenty-four days). This continued for another five weeks, and after that the post-pedagogic intervention evaluation was undertaken. During the pedagogical intervention, each morning started with the sample group participating in one to three mindfulness exercises, such as listening to the bell, a breathing ball, describing what a child experienced with each sense or observing an hourglass. In addition, every week during the pedagogic intervention ended with belly breathing exercises and a reflection on the participants' feelings and

experiences during the week. Exercises were also incorporated during other times of the day; for example, whilst waiting for the other child to finish their work or to calm down after intense emotional moments. In the classroom of the sample group, a special area was set up which reminded and helped children to keep the mindfulness praxis alive during the times free from the organised exercises. This area included different posters with reminders of mindfulness exercises and different tools and toys to be used for the exercises.

At the end of the research, a post-pedagogic evaluation was undertaken. Addition to that 'one-to-one' conversations with children were organised, to learn about their experiences and the benefits of practising mindfulness.

For the use of the intervention, mindfulness exercises were compiled, which are presented in Table 1. The exercises have been compiled from the School of silence lesson plans, and the book "Cultivating Mindfulness in the Classroom" (Iberlin & Ruyle, 2017). They were chosen considering the adequacy of the age and also to include vide diversity of exercises.

Table 1. Mindfulness exercises utilised in the study

Type, name, and goal of exercise		Description	Requirements for effective implementation
Mindful breathing	**Breathing ball** Goal: to learn, observe and pay attention to the breath	The teacher starts and shows the exercise, then each child follows – breathing in and slowly expanding the Hoberman Sphere for the duration of inhale. Once the inhale is complete, stop expanding the Hoberman Sphere and notice the natural pause between inhale and exhale. As the exhale begins, collapse the Hoberman Sphere until the exhale is complete. Each child inhales and exhales three times in a row.	1) Hoberman Sphere is needed 2) For an effective result, one ball should be used for no more than ten children
	Infinity breath Goal: to learn to breath in different speeds	The teacher gives each child a paper with an infinity sign. At the beginning the teacher explains the task and invites children to join – drawing the infinity sign with a finger, while taking an inhale moving to one side of a sign, moving to the other side with an exhale. Repeat this for as many times as necessary.	1) An infinity sign can be made of paper or wood, at least 14 × 21 cm size 2) There are no exact limitations to the size of the group

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Type, name, and goal of exercise		Description	Requirements for effective implementation
	Breathing rainbow Goal: to observe body sensations while breathing	The teacher invites children to imagine a rainbow in the air, explains and guides the process – placing arms at one side of the body and moving both arms from left to right to trace the rainbow while inhaling slowly through the nose – then moving arms back from right to left to trace the rainbow while exhaling slowly through the mouth. Repeat as many times as necessary.	1) Educator guides the process 2) No more than fifteen children in a group
	Belly breathing Goal: to learn diaphragmatic breathing	Each child lies on the floor on his or her back. The teacher places a lightweight toy on each child's belly. The teacher guides children to breathe with the belly slow or fast and invites children to pay attention to the movement in their belly. It is possible to put some relaxing music on in the background. Depending on the age of the children in the group, the exercise should be continued for at least five minutes. After the exercise, children should share their experiences with the group.	1) A space for every participant to lie on the floor and a small lightweight toy (for example a rubber duck) for each participant 2) To provide qualitative time for feedback, suggested no more than fifteen children in a group
Mindful listening	**The bell** Goal: to improve attention and listening skills	This exercise can be done with eyes open, or eyes closed. The teacher presents children with a bell and explains that when the teacher is going to ring the bell, children must be attentive and listen to the sound fade until it cannot be heard anymore. When the sound stops, the child must raise his or her hand.	1) A bell, made of metal, that makes a sound after ringing it at least for ten seconds 2) There are no exact limitations to the size of the group
	Silence Goal: to improve attention and listening skills	This exercise must be done with closed eyes. The teacher explains that children must close their eyes, listen, and pay attention when they hear a sound of a bell, they must open their eyes. This exercise should be done starting with a period of twenty seconds, increasing the time when children are ready.	1) A bell, made of metal, that makes a sound after ringing it at least for ten seconds 2) There are no exacte limitations to the size of the group

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Type, name, and goal of exercise	Description	Requirements for effective implementation
Mindful body — **Body scan** Goal: to pay attention and sense feelings in the body	The teacher invites children to lie down on their back or sit down comfortably and close their eyes. The children are invited to contract every muscle in their body as tight as they can, starting from the feet and moving up. The teacher tells them to squish their toes and feet, clench their hands into fists, and make their legs and arms 'as hard as stone'. After a few seconds, have them release all their muscles and relax for a few minutes. The teacher encourages children to think about how their body is feeling throughout the activity. When all the body parts have been contracted, children inhale three deep breaths, and share their experience with the group. This exercise lasts for approximately eight minutes.	1) The teacher guides and observes the process 2) To provide qualitative time of feedback, suggested no more than fifteen children in a group
5, 4, 3, 2, 1 Goal: to acknowledge and verbalise sensations with all senses	The teacher invites children to sit still and acknowledge five things that they can see around, four things they can touch, three things they can hear, two things they can smell and one thing they can taste. After they have acknowledged these objects, the teacher leads a discussion about the group's experience.	1) The teacher guides and observes the process 2) To provide qualitative time of feedback, suggested no more than fifteen children in a group
Mindful looking — Hourglass Goal: to develop persistence of attention	The teacher asks children to sit down comfortably in a circle and places the hourglass in the middle. Children must observe and listen to the falling sand. When the last grain of sand falls, children must raise their hand or stand up. Depending on the age of the children in the group, the educator can choose for how long to hold the exercise.	1) An hourglass is needed 2) Depending on the size of hourglass the number of children participating can vary but it is important that all the children can sit around and see it

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Type, name, and goal of exercise		Description	Requirements for effective implementation
Mindful eating	**Guess what I am looking at** Goal: to develop observation skills	The teacher focuses his or her attention to some object close by. The children must observe the teacher and guess what she is looking at. After that, each child does the same.	1) The teacher guides and observes the process 2) To provide qualitative time of feedback, suggested no more than ten children in a group
	Glass of water Goal: to notice and verbalise different senses	Each child is given a cup with water or another drink. The teacher guides the process, when children start by taking a small sip of a drink, and paying attention to each moment, starting from the drink being in the cup, to the moment it goes down into their stomach. Children describe their feelings after the exercise.	1) Cups for each child and any kind of child-friendly drink 2) To provide qualitative time of feedback, suggested no more than fifteen children in a group
	Orange Goal: to develop skills to verbalise different senses and feelings	The teacher gives each child an orange, and guides children to mindful eating. The children must eat the orange slowly, without rushing. It can also be done with eyes closed. It starts by holding the orange, rolling it in hands, noticing how it feels, smelling the orange, peeling it, and smelling again. Noticing how it looks and feels by hands. Peeling and noticing the sensations. When it's done, the teacher guides the children to pay attention to what is happening in their mouth while they are doing all these things. After that, slowly starting to eat and noticing the flavours and textures. The whole process is guided by the educator, and children express and reflect on their experiences.	1) Oranges or any other fruit or vegetable for each child 2) To provide qualitative time of feedback, suggested no more than fifteen children in a group

Results

Before the pedagogic intervention, emotion regulation skills of the sample group participants were evaluated based on ten skills criteria, which were observed in both daily life actions and specifically the organized learning activities. Criteria were developed based on theoretical research on the emotion regulation skill development and Latvian preschool education curriculum and there included skills. The ten criteria were:

1) the ability to assign names to basic emotions,
2) the ability to describe basic emotion bodily expressions,
3) understanding that emotions are connected with actions,
4) recognising and wording the causes of emotions,
5) recognising and describing one's emotions,
6) choosing an adequate solution on how to deal with intense emotions,
7) recognising emotions in others,
8) acting according to other people's emotions,
9) evaluating own actions and finding solutions, and
10) applying and practising mindfulness exercises.

The pre-pedagogic intervention evaluation results are presented in Table 2. Children were evaluated at five levels (0–4) depending on the proficiency level of the ten skills criteria: 0 – not possessing a certain skill, 1 – starting to develop (use) a certain skill, 2 – using a certain skill with an educator's support, 3 – using the skill, but lacking confidence, 4 – using a certain skill with confidence. Table 2 is organised in four categories: A presents results on each child in the sample group and their age, B lists the ten skill criteria (derived from the scientific literature and curriculum), while C differentiates the stage at which that evaluation was conducted – prior to the pedagogic intervention or after the intervention, and D presents the levels of evaluated proficiency for each child.

One of the criteria on which sample participants were evaluated was the ability to choose the appropriate solution on how to deal with intense emotions. In the first evaluation (prior to the pedagogic intervention) four of the sample participants showed significantly lower results, compared to the rest of the sample participants' result. Throughout the initial evaluation the most notable observation was the lack of skills on how to control and deal with intense emotions from two participants (No. 3 and No. 11), because of that, their results were highlighted. Child No. 3 and No. 11 also experiences behavioural problems, socialisation issues and engagement problems during learning activities. At the final evaluation (post-pedagogic intervention), it was noted that the skills of these two participants had improved (see Figures 3 and 4).

Table 2. Summarized evaluation

A – Child and age		1. 5 y.	2. 6 y.	3. 5 y.	4. 5 y.	5. 6 y.	6. 5 y.	7. 5 y.	8. 6 y.	9. 6 y.	10. 5 y.	11. 5 y.	12. 6 y.	13. 6 y.
B – Skills	C – Stage of evaluation	D – levels of evaluated proficiency for each child (0–4)												
1. Ability to assign names to basic emotions	Prior to the intervention	3	3	1	1	3	1	2	3	4	3	1	4	1
	Post the intervention	3	4	3	3	3	1	3	4	4	3	3	4	1
2. Ability to describe basic emotion bodily expressions	Prior to the intervention	1	3	0	1	2	0	1	3	3	2	0	3	1
	Post the intervention	2	3	1	1	3	1	1	3	4	3	1	4	1
3. Understanding that emotions relate to actions	Prior to the intervention	2	3	1	1	3	0	1	3	3	3	1	3	1
	Post the intervention	2	3	1	2	4	1	2	3	4	3	1	4	1
4. Recognising and wording the causes of emotions	Prior to the intervention	2	3	0	1	3	0	1	1	3	1	0	3	0
	Post the intervention	2	3	0	1	4	1	2	2	3	2	1	3	1
5. Recognising and describing one's emotions	Prior to the intervention	2	3	1	2	2	0	1	3	3	1	1	3	1
	Post the intervention	2	4	2	2	3	1	1	4	4	2	1	4	2

Continued from previous page

A – Child and age		1. 5 y.	2. 6 y.	3. 5 y.	4. 5 y.	5. 6 y.	6. 5 y.	7. 5 y.	8. 6 y.	9. 6 y.	10. 5 y.	11. 5 y.	12. 6 y.	13. 6 y.
6. Choosing an adequate solution on how to deal with intense emotions	Prior to the intervention	1	4	1	1	3	0	1	3	3	0	0	3	1
	Post the intervention	1	3	1	2	3	1	1	3	4	1	1	4	2
7. Recognising emotions in others	Prior to the intervention	2	2	0	1	3	0	1	3	3	1	0	4	0
	Post the intervention	2	3	1	2	3	1	1	4	4	2	1	4	1
8. (re)Acting according to other people's emotions	Prior to the intervention	1	2	1	1	1	1	1	3	3	0	1	3	0
	Post the intervention	1	3	1	1	2	1	1	4	3	1	2	3	0
9. Evaluating own actions and finds solutions	Prior to the intervention	2	3	0	1	3	0	1	3	3	1	2	3	1
	Post the intervention	2	3	1	1	3	1	1	3	3	1	2	3	1
10. Appling and practicing mindfulness exercises	Prior to the intervention	0	1	0	0	0	0	0	0	0	0	0	0	1
	Post the intervention	1	2	1	1	1	1	1	2	2	1	2	1	1
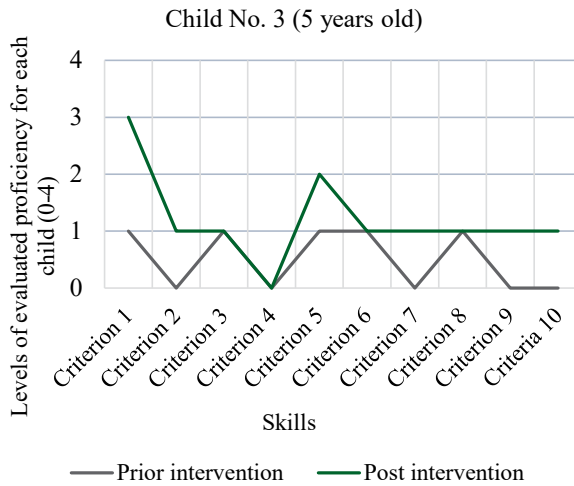
Figure 3. Comparison of prior and post intervention evaluation results of participant No. 3
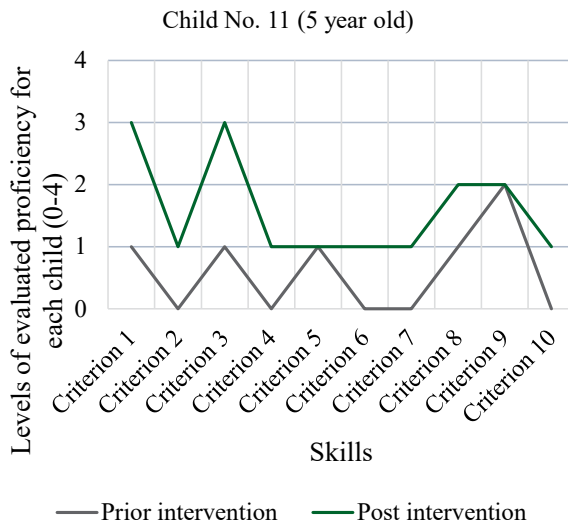
Figure 4. Comparison of prior and post intervention evaluation results of participant No. 11

Moreover, the study observed that post the pedagogic intervention, most participants demonstrated better engagement in the learning activities, fewer behavioural issues, and a better ability to engage in socialisation.

During the final stage of this study, a final evaluation (post-intervention) was conducted, as well as individual discussions with the sample

participants about their experience with mindfulness exercises and their perceived benefits of practicing them. The key benefits that children emphasised were that exercises helped them to calm down, manage anger and overcome anxiety, worry, or fear, and also to be more aware of their own feelings and surroundings.

Discussion

This study investigated the effects of a mindfulness praxis as a tool to support emotion regulation skill development for children aged five to six. After the literature analysis, as well as expert interviews, observations and most importantly consistent pedagogic intervention the findings have shown that out of the ten skills the participants were evaluated on, performance of thirteen sample participants had improved in many of those skills' criteria, including emotion regulation skills.

Sample children were more able to recognise, describe, express, and manage their emotions, especially the improvements observed in children whose skills in the beginning were quite low. In addition, children showed higher levels of engagement in the learning process, the attention improved and their ability to verbalize and explain themselves were better, which was a great benefit for the development of their socialisation skills.

Based on the complicity of the child development and difficulty to measure and evaluate social emotional skills, there can be a variety of reasons why the measured skills of the children were improving. Also, it is important to mention that the personality of the teacher and teachers own emotion regulation skills, ability of being mindful and engaged into the learning process impact each child and their ability to develop emotion regulation skills. For the future success of mindfulness praxis integration in to learning process and better student outcomes, more support and training for the teachers should be provided. Also, for the further research, it would be important to include more children into research and observe the changes over a longer period, including more people who could observe and collect data.

However, based on the research question, mindfulness praxis improved the skills of children. This research brought a contribution in to Latvian early childhood education field, introducing the use of mindfulness praxis into daily learning process, what can be developed into methodological material for early childhood education teachers. When considering the benefits which were observed during the research, mindfulness praxis is a considerable tool for teachers to integrate into their teaching process. In addition, the mindfulness praxis with its wide range of exercises is a relatively easy way for teachers to teach children different skills. Exercises

are simple and easy to adjust to the needed setting and easily integrated into the regular learning process, therefore a usable tool to implement in to learning process.

Conclusions

Emotion regulation skills are essential skills for a child's ability to learn, manage their behaviour, develop self-regulation and to establish meaningful socialisation with others. In the mindfulness praxis teachers are provided with practical tools that they can incorporate in their setting, and which helps children to develop emotion regulation skills, and cope with difficult emotional experiences. Mindfulness not only aids in the development of emotion regulation skills but has proven to be also a considerable tool to help teachers to promote social emotional learning in the classroom.

It is important to emphasise that mindfulness must be practised consistently and, in the long term, to gain the most benefits. Although the mindfulness praxis is not a direct way to teach about emotions, it provides a child with the skills needed for emotion regulation and helps to calm down their brain and body, so they would be able to take personal control over themselves. When children exercise this personal control, they are more able to take control over their learning process too.

Therefore, this study concluded that mindfulness praxis has proved itself as an effective tool to provide meaningful and qualitative support of emotion regulation skill development. In addition, emotion regulation skills of the sample participants were improved, and the group's overall dynamics were improved. Participants also improved their communication skills and skills necessary to verbalise their emotions and experiences. The goal of a teacher is to prepare a child for life, not only for academic achievements, and mindfulness praxis has demonstrated the potential to be an effective tool for educators and children to be more connected and in peace with themselves, to recognise and control their own learning process and emotional responses and that creates a firm foundation for their further development.

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TEACHER'S ROLE AND ATTITUDE DURING SOCRATIC CONVERSATIONS FOR MORAL EDUCATION AT HIGH SCHOOL

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ABSTRACT

It is important to address moral education in the context of human freedom, authenticity, and self-inquiry. Following the developmental needs of adolescents and young adults, moral education at high school should provide a social environment to address authentic identity search and inquiry upon existential questions by facilitating reflection about students' own life experiences together with peers. A conceptual model of Socratic conversation as a method for moral education in high school was elaborated by the authors. This research addresses the role and attitude of a teacher in the practical implementation of such model. To explore the opinions of educational actors, a Socratic conversation intervention (four high school students and a researcher-facilitator), expert interviews (a teacher and a youth psychotherapist) and focus group discussion (five young adults working with youth) were organized in spring 2022 in Latvia. The results point to the fact that, for leading Socratic conversations, teachers should act as facilitators who have a personal interest in the topic and method, and who simultaneously allow space for the students to form and express their own opinions before revealing the teacher's own views in the discussion. This can be an even more demanding job than a traditional teacher's role, requiring teachers to tolerate a higher degree of uncertainty. Thus, teachers need adequate support, which could include first experiencing a Socratic conversation as participants beforehand. This research provides a significant contribution for understanding teachers' role during Socratic conversations with high school students, and points to ways of supporting teachers using this method to the benefit of both students and teachers.

Keywords: *high school, moral education, Socratic conversation, teacher role, dialogical teaching, philosophical inquiry, pedagogy of freedom, existential questions*

Introduction

It is important to address moral education in the context of human freedom and authenticity. The OECD report on values-education urges to "ask ourselves about what it is to be a human" and "support students to … find a sense of purpose with their own moral compass" (OECD,

2021, Executive summary). The report also underlines that values cannot be "directly taught" and recommends integrating student experiences to develop their authentic values:

> It is of utmost importance to create a safe environment where students can speak about their true selves. In other words, their voices should be authentic, not assumed voices in which students consciously or unconsciously assume what they should say in accordance with what their teachers or parents or friends think. (OECD, 2021, Chapter 5)

Taking this approach to school, values-education would promote "a sense of ownership of their own life" in students (OECD, 2021, Chapter 5).

Such an approach relates to moral education as existential self-inquiry. The philosophy and pedagogy of existentialism offers a way to look at human development, at each person's unique journey in this world in order to take the responsibility to live according to his/her own values (Rumianowska, 2020). For a free individual, moral questions about how to live one's life are at the same time existential questions. Writing about moral education and identity, Lawrence Splitter (2019) argues that questions such as "Who am I?", "What matters?", "In what kind of a world do I want to live?" carry importance for a person's identity and the potential for a meaningful life. Moral identity might also be the missing link in the morality-action gap (Hardy & Carlo, 2011). Yet, while being an individual matter, identity is created also socially (Lapsley, 2010). Therefore, Splitter calls for an educational environment where existential questions could be discussed openly among youth (2019). Agnieszka Rumianowska (2020) equally argues that moral education should consist of conversation and self-reflection about existential life questions. UNESCO guidelines for education also underline the importance of philosophical thinking (Goucha, 2007) and the individual learning within a dialogical group context (ICFE, 2021).

From a developmental perspective, identity search and existential questions become of importance in high school, which marks the transition from late adolescence (15–18) to young adulthood (19–29) and aims towards psychological separation-individuation (Zimmer-Gembeck & Collins, 2003; Kroger, 2007; Schwartz et al., 2013; Lapsley & Woodbury, 2014; Padilla-Walker, 2014). Therefore, it is of importance to develop moral education in high school in a way that would provide an environment to address identity search and existential questions by helping students to reflect on their own life experiences together with peers.

In the Latvian context, moral education became topical since the 2015 amendments to Article 10 of the Law of education, which clarified the contents of moral education (Saeima of the Republic of Latvia, 1998). Moral education is integrated into the education reform "Skola2030" (2019), which describes the virtues and values as forming the framework for the

curriculum. Specifically, this reform encourages the search for a moral education approach that simultaneously encourages the authentic construction and respect of one's own values, the evaluation of concrete situations, self-reflection, conversation, listening to different points of view and empathy. However, "Skola2030" does not offer a concrete solution for promoting values, virtues and habits at school. Thus, there is a necessity for practical approaches to moral education and for supporting teachers in its implementation.

For answering to this challenge, in winter 2021–2022, the authors elaborated a conceptual model for Socratic conversation for moral education at high school, based on literature analysis. The first author had taken part in a Socratic conversation herself as a student, and this largely inspired her to initiate this research. The conceptual model was intended to provide guidance to teachers for organizing Socratic conversations at school. It contains the main principles and steps for a Socratic conversation, guidelines for choosing questions and examples for analysis, as well as a conceptualization of the teacher's role and attitude, which is the focus of this article. The model was scientifically grounded, and its adequacy for practical implementation of moral education in high school was tested empirically in April-May 2022.

In this article, the conceptual background of the model is shortly presented, with an emphasis on the teacher's role and attitude. Then the methodology and results of the empirical research regarding the validation of the conceptualization of the teacher's role are presented.

Conceptual background

The conceptual model was elaborated based on theoretical insights from developmental psychology, existential philosophy and dialogic pedagogy. The developmental necessity for freedom through identity search and authenticity connects to existential philosophy, and existentialism connects to a pedagogy of dialogue. One of the pioneers in this direction is the critical pedagogue Paulo Freire who holds that dialogue is "the essence of education as the practice of freedom" (2014, p. 8). Dialogic pedagogy promotes the idea that the individual learns about him/herself and the world through inquiry together with others (Sarid, 2012; Howe & Abedin, 2013; Altorf, 2019). There are many variations to dialogic pedagogy, but most draw on the historical character of Socrates and his way of philosophically questioning his fellow citizens un everyday life (Platons [Plato], 1997; Pihlgren, 2008; Chesters, 2012; Worley, 2021). The conceptual model analyzed in this research proposes the Socratic conversation method put forth by Leonard Nelson in the 1920s, because it takes real examples from

the students' lives as the basis for philosophical analysis (2004). That way, moral education maintains a link between philosophizing and living, and students are encouraged to connect their own particular daily lives with philosophical questions, ideas, value judgements.

As regards the teacher's role and attitude, the model synthetizes the ideas of Rene Saran and Barbara Neisser, (2004), Gustav Heckmann (2004) and Leonard Nelson (2004), presenting the teacher as a facilitator whose role in a Socratic conversation consists of:

1. Organizing and structuring the conversation: S/he introduces the students to the concept, method and its steps, guides the conversation, fixes the main ideas in a blackboard or similar for further joint discussion.

2. Remaining content neutral: this differs from the traditional teacher's role where the teacher is acting as an expert; the facilitator withholds her/his own opinion and is dedicated to helping the students think independently, develop and express their own opinions.

3. Balancing between the concrete and the abstract: reminding students to ground philosophical ideas in concrete examples and analyze concrete examples through the prism of the philosophical question at hand.

4. Keeping the focus on the question: making sure the conversation does not sidetrack too much and stays on the philosophical question that was initially asked, lest the question needs to be collectively reexamined and reformulated.

5. Helping gain a common understanding: ensure the students are understanding one another as best as possible, paraphrasing and asking questions.

6. Encouraging reflection about the conversation: not only at the end of the conversation, but whenever necessary to take a look at the conversation itself, how it is going, how is everyone feeling about it, what could be improved.

Empirical research was conducted to check the practical validity of this conceptualization of the teacher's role. The question guiding the research presented in this article was: what should be the role and attitude of the teacher during Socratic conversations for moral education in high school, according to educational actors?

Methodology

The study was designed as a qualitative research exploring participants' perceptions of teacher's role during a Socratic conversation. Results are therefore not generalizable, but they provide useful insights regarding

teacher's role in the practical implementation of such method and point to practical future research directions.

Data collection

For answering the research question through the perspective of diverse educational actors, data was gathered using multiple methods: 1) the opinions of high school students and a researcher-facilitator were collected after a Socratic conversation intervention (quasi-action-research approach), using group reflection, an online questionnaire and facilitator's self-reflection; 2) two semi-structured interviews with experts (a teacher and a youth psychotherapist); 3) a focus group discussion with young adults working in education/youth work.

Socratic conversation intervention

To research the conceptual model from high school students' perspective as well as from teacher-facilitator's perspective, a Socratic conversation was organized. For recruiting participants, information about the possibility of participating in a philosophical conversation about one of the five possible questions proposed by the researcher was spread among high school students from a school in Riga, which was chosen for convenience reasons. Four high school students (age: 18–19; two girls, two boys) voluntarily participated in the discussion about "What does it mean to be free?" At the end of the Socratic conversation, students' opinions about the method used were gathered through a group reflection. They also provided individual written open reflections, answering to an online questionnaire one to two days after the conversation. Both reflections (oral and online) were guided by questions, one of which related to the teacher's role.

In addition, in line with engaged-scholarship and action research (Coghlan & Brydon-Miller, 2014), one of the researchers facilitated the conversation and wrote a reflection about it. This approach also relates to existentialism and Paulo Freire's philosophy of conscientization, action and reflection (Feldman, 2009; Freire, 2014). It allowed to gain first-hand experience about the praxis of the conceptual model from a teacher's perspective.

Expert interviews

Expert interviews were chosen as a fitting method for this exploratory research project because it allows gathering practice-based in-depth opinions effectively and with relatively little data (Flick, 2018). Two experts were interviewed. The first one, Nils, a youth psychotherapist, was selected because philosophical questions are related to identity development and mental health and because in-depth group conversations require psychological

insight into group dynamics. The second one, Daiga, a high school literature teacher, was selected because her use of conversation-based pedagogical approach and because literature lessons can be easily connected to Socratic conversations.

The semi-structured interviews, among other topics, addressed the teacher's role and attitude. The experts were introduced to the Socratic conversation conceptual model, receiving it by email before the interviews, and then were interviewed in online video-calls which lasted in average 45 minutes. Interviews were recorded and transcribed for further content analysis.

Focus group

A focus group with young adults working in education (schoolteachers or tutoring) or in youth work (youth psychological support center) was organized. This approach was chosen to represent an opinion that fills out a gap between high school students and experts/teachers. Young adults can reflect about the high school experience both from a youth and an adult perspective, employing simultaneously recent enough insight and a distance that allows for reflection. The focus group approach was chosen to collectively inquire about the conditions, values and opportunities to act, in order to produce knowledge that is larger than the sum of its parts, which is in line with critical pedagogy and action research (Liamputtong, 2011).

Five young adults (age: 25-28) who work in education/with youth voluntarily agreed to participate in the focus group discussion after receiving information about it through a public post in social media and through personal contacts. The discussion was facilitated by one of the researchers who is in the same age group. It lasted two hours and it was audio-taped and transcribed for further content analysis.

Data analysis

All data (apart from researcher-facilitator reflection, which was written directly) were analyzed through qualitative content analysis in the MAXQDA software. The unit of analysis was taken to be a unit of meaning according to the natural narrative of the respondent: sometimes one idea was told in a few words or a sentence, sometimes a whole paragraph was needed to explain a thought. The data were coded using the interview questions as a deductive frame, at the same time allowing for an inductive introduction of new themes, categories, and subcategories. The data used for this article were gathered under the general category "teacher's role". The reports for each method were written to recreate a natural flow from the respondent's opinions. The students' opinions were represented by combining the group

and individual reflections in one narrative. The experts' opinions were written for each expert separately in order to represent their expertise in different fields. The focus group was written as one report according to the interactive nature of a discussion.

Results

This section summarizes the views of each respondent group regarding teacher's role and attitude during a Socratic conversation and confronts these opinions with the conceptualization of the teacher's role presented at the end of the section 'conceptual background'.

Socratic intervention: Students' opinions about teacher's role

Speaking of the teacher's role and attitude in a Socratic conversation, the students put an emphasis on open-mindedness, respect, and structure. The teacher should be with diverse interests and ready to truly engage in discussion. It matters that the teacher is understanding, patient and able to "value the students' opinion regardless of their age". The teacher should perceive all students as equal conversation partners. The teacher should not be authoritarian but should have authority in the sense that s/he leads the conversation: makes sure it stays focused on the question, helps generate ideas if students are stuck, can solve conflicts if they arise and leads the conversation to some logical conclusion. In relation to this, the students said that it was helpful that the facilitator was constantly noting down the structure and the keywords of the conversation on the flipchart.

These students' opinions largely match the guidelines for teachers developed in the conceptual model. A difference is that students did not make direct mention of the necessity for the teacher to remain neutral – it is simply important that s/he listens to and respects the students' opinion. A new dimension that has not been directly emphasized in the conceptual model was the teacher's personality – being well-rounded and open-minded. Students also suggested that it would be important for the teacher to have participated in a Socratic conversation in order to be able to better facilitate it.

Socratic intervention: Facilitator's (First author) reflection about teacher's role

A convincing reason that I found in literature (Saran & Neisser, 2004) for the teacher being a neutral facilitator and not sharing his/her opinion was that it is in fact a very difficult task for one person to organize, lead, note down the conversation and simultaneously contribute to the conversation with his/her experience, opinion. After this experience of facilitating

a Socratic conversation, I can strongly agree with this idea. Guiding the conversation, stopping sidetracking from the main question, following each thread of ideas, and jotting it down on the flipchart and at the same time generating questions to deepen the conversation – all of this made for a very demanding job. While I was making notes, I sometimes missed an idea. At times I had to physically turn my back on the students, and during these moments I felt like I was not fully engaged in the conversation, because I could not observe their facial expressions and react with mine. I also felt like perhaps my notes are not structured enough and were not sure if they were in fact helpful for the students, since I did not have a particular system. I would like to look into some note-taking methods that could make this process more structured. Yet, to my surprise, during reflection, the students said my work on the flipchart had helped them a lot.

As I suspected, it was difficult to move to the conclusion of the conversation. I felt that if I pushed it more, I would inevitably direct the conversation according to my own ideas. Trying to avoid this, I mainly used this approach to try to move towards some general answers: catching a keyword from what a student is saying, repeating it, writing it down and asking deeper questions about it. For example, a student mentioned emotions, and I offered to name emotions that they associate with freedom, and then to compare with emotions that are associated with a lack of freedom. That way, we ended up with two comparative lists of emotions for an answer.

In relation to the teacher neutrality, I must admit that I was not fully neutral, and I had to actively stop myself from putting my own ideas of freedom in the students' heads. For example, when naming emotions that describe freedom, students were naming positive emotions such as joy, happiness, and I was biting my tongue not to *tell* them that freedom could also produce negative or at least complex emotions. But I refrained from saying it directly, and, in the end, when comparing our main example analysis to the rest of the examples that students had given, the students themselves came up with the thought that freedom of choice can lead to anxiety and confusion. Then I allowed myself to emphasize this idea and add these emotions to our initial list.

Now, reflecting on the teacher neutrality, I think that perhaps, similarly as in academic research, it should be about awareness of one's own standing rather than self-erasure. The guideline of neutrality is helpful in the sense that in everyday life we tend to not be so aware about our opinions and it is difficult to see beyond them. Hence, as I see it, the neutrality guideline is not asking for the impossible – for the teacher to be an emotionally detached, estranged, mechanical conversation facilitator – but rather for the teacher to be more aware of his/her presumptions and inclinations, in

order to be able to put them aside for a while to allow for the students to freely and fully develop their own ideas.

Overall, this conversation for me had a similar emotional impact as for the students. They described it as a stimulating, "fun activity", after which their minds were buzzing with many different thoughts. At the same time, it was indeed tiring for all of us, and generated a necessity to put deep thinking aside for a while and rest.

Teacher's role according to experts:
Youth psychotherapist interview

In relation to the teacher's role and attitude, the youth psychotherapist Nils emphasized three main aspects: the problematic idea of neutrality, the importance of personality and group management skills. He was critical of the idea of the teacher neutrality as such. First, it seems in itself impossible – even if a teacher would try to facilitate a conversation "robotically", s/he would not succeed because people always reveal their own views through micro movements, intonations. Even a therapist is not neutral in their job. Second, a teacher's neutrality does not even seem desirable because young people need role models, positive authority figures who can show by example how it is possible to think about these big life questions. Nils also admitted that personally he sees this striving for teacher neutrality as associated with overly capitalistic worldview where "the teacher becomes like a shop assistant" and which is not a "good approach to raising a human being" (here a parallel with Freire's critique of banking education can be seen). For him, there was not necessarily a contradiction between giving space for students' opinion and not hiding the teacher's personal stance. He sees that instead of "artificial neutrality" a better way to approach this would be for the teacher to reveal their position and the thinking process that leads to it.

Thinking about what the teacher would need in order to successfully take the role of an open-minded facilitator, Nils emphasized that the teacher's personality is of utmost importance. If it matters for the teacher to hear out opposing views and think deeply about difficult questions in personal life, then it will also show in the teaching process, and they will succeed at facilitating a Socratic conversation. On the contrary, if these are not important values to the teacher, then it is unlikely this can be learnt as a skill. To high school students the authenticity of the teacher truly matters, so the teacher should believe in the meaningfulness of the method. Therefore, there will be teachers whose personality matches the Socratic conversation as well as ones whose does not and hence they should not practice it.

While the teacher's personality plays the larger role, Nils said there are skills that can be acquired to better facilitate a Socratic conversation, the

main one being group management. What holds any group together is its structure, rules and how the facilitator presents them, including how s/he reacts if they are not followed. Group management also includes the skill to react in non-standard situations. One should also be mindful that group work always happens on two levels: that of each individual participant and that of the group as a whole. To better understand group dynamics in a Socratic conversation it is important for the teacher to have experienced such a conversation as a participant. The expert also suggested that perhaps the conversation could be led by two teachers. Another necessary skill to be learnt is to provide empathetic support and feedback to a young person who has shared a difficult experience or realized something important about themselves as a result of the conversation.

Teacher's role according to experts:
High school literature teacher interview

Daiga emphasized the importance of both the students and teachers being interested instead of simply doing a task for its own sake. For her as a teacher, during class conversations it truly matters to find her own authentic interest in the topic: "I feel genuine joy, if [during a lesson] something opens up within me and we get to a question that is important to me."

In relation to her role in the literature class, she described herself as a moderator. Daiga does not plan out the direction of the discussion, she asks the first question and "all the next ones are born out of what students say". In order to facilitate class discussion like this, it is important to listen very carefully to what students say, often ask them "did I understand correctly, could you explain it in other words?" In this process of listening and questioning, Daiga draws from her experience in journalism and doing Philosophy with Children (PwC). In relation to whether she sees herself as taking a neutral position in class, she said: "I don't know if I'm neutral or not, but I never know where the conversation will lead. I don't have the answers." At the same time, it also happens to her to start leading students in a particular direction, since working with some literary works for several years, one develops a sense of "having separated the wheat from the chaff, and you want to get to that same wheat with every class". It is exactly why it matters that students can object to the teacher's interpretation: "I really like when at last somebody says – but, no, listen, this is no wheat that you have found, (laughs), this is actually just chaff." In this way, students confuse the teacher and push her to return to truly think about the topic together with them. Daiga summarized that admitting her lack of absolute knowledge and being open to thinking is an important part of her work: "I don't know, if I had to write lesson plans where I predict the answers… (laughs) I would quit school that very day. I do not possess the right answers."

She connected this open-mindedness with a never-ending desire and need to keep learning. It matters for a teacher: "If I stop developing, I cannot continue my work." Awareness about how little she knows and how much can still be learnt is empowering on a personal level, because to always learn is to "keep my inner core strong". Daiga said that she keeps changing as a person and her approaches to teaching also change. She is in perpetual state of reflection about what she could do better, then tries it out, then reflects again. In this process, it matters for her to take the students' opinion into account. In order to genuinely teach and learn at the same time, it is important to find one's own particular approach, to engage creatively and authentically in the process. However, Daiga admitted that it can be difficult: "Being a teacher is a mass profession, and most teachers cannot spend as much time on this as I can. They have demanding personal lives ... They physically cannot manage. And hence the teacher should be able to find quality, ready-made lesson materials."

Overall, the expert sees that it is important for teachers to experience anew the joy of conversing and learning, so she suggested first organizing Socratic conversations for teachers: "They should feel, renew their joy to speak, to search, to listen, to get lost… to feel the liveliness of what it means to think. Otherwise, everything becomes passive."

Teacher's role in the focus group discussion with young adults

During the discussion, the young adults gave the teacher's role and attitude utmost importance. In order to lead a conversation, the teacher needs "very high emotional intelligence" and the skill to react to diverse situations, "as in to understand even from the blink of an eye when it is necessary to change the topic or ground someone". At the same time, the teacher needs to be interested in a Socratic conversation, "it should be done by teachers who want to facilitate it and understand the principles" and who are able to generate interest in the students. There can be situations where the teacher wants to talk about questions that matter to the students, but the students are not open to share because they are not used to such an openness. Hence, it is important to build friendly relationships with the students in day-to-day life, but that is difficult to achieve with everyone. Some of the participants shared that they have had literature and philosophy teachers who promoted a friendly environment for deep conversation, and these class experiences inspired them to seek and create opportunities to have deep discussions with peers also after graduation.

In relation to the teacher's position in the conversation "it would be good if the teacher didn't have answers to the question discussed, for example, if we ask: "what is courage?" it would be silly if the teacher was trying to lead everyone to one right answer". Meanwhile, the teacher needs to be able to

structure the conversation, "keep it within a logical frame". The structure of the conversation is also important so that students do not get the impression that it is "just some chit-chat" not to be taken seriously. It is important for the teacher to be aware of his/her emotions and keep emotional boundaries. For example, one of the young adults who is a teacher has participated in a supervision group, where he has understood that "a teacher can be angry" but should be open about the reasons behind the anger. Another participant noted that truly listening to the students' problems and emotions can be a heavy task: "I come home, and I really think about them, I worry, I haven't cried yet but have been close to it. Compassion can get you trapped." One of the participants concluded that this job "seems even more complex after this discussion". For him, "listening to all those nuances and thinking again what it was like to be in high school… [it seems] there are so many unknown influences" which make it "difficult to predict all that can happen during such a conversation and how one should act to be able to facilitate it well".

The participants noted that also our focus group discussion itself, which touched upon philosophical questions about the purpose of education as well as practical issues, was a much-needed reflection for them as teachers and youth workers. Otherwise, "there is so much work and so little time to even think about what it is I actually do as a teacher".

Conclusions

1. The analysis of all the opinions about the teacher's role and attitude in a Socratic conversation showed that, while it differs from a traditional teacher's role, it is nevertheless highly demanding. Perhaps even more so because there is no ready-made content to be taught but only a structure than can be filled with anything that the students share. There are many requirements for the teacher such as high emotional intelligence and complex group management skills. Leading a Socratic conversation is cognitively, emotionally and physically demanding, to which note-taking only adds. A possible solution for alleviating the workload would be to count on a teaching assistant during the conversation.

2. While facilitating a Socratic conversation would require a lot of skill and effort from the teacher, all respondent groups emphasized how important it is for the teacher to have an authentic interest in the process and to gain something out of it. Certain teacher personality types would be more suited for such a method and thus would succeed better at facilitating it. Hence, Socratic conversation is maybe not for all teachers, but rather for those who are in themselves more inclined to open-mindedness and open-ended questioning and have the potential to personally enjoying such conversation.

3. It is also necessary to provide such teachers with adequate support that enables them to facilitate Socratic conversations. While a more detailed step-by-step instruction for facilitating a conversation would be useful, it seems implausible that all possible aspects and directions of a conversation, which can lead anywhere, could be covered in teacher guidelines. Thus, the teachers should be able to tolerate a higher degree of unpredictability and freedom than in a traditional teacher role. One way to support them in developing such an attitude would be to organize Socratic conversations for teachers themselves.

4. Teachers could benefit of participating in a Socratic conversation themselves beforehand. It could help them better understand the method as participants and observe how to facilitate a conversation skillfully, e. g., how to balance between keeping structure and allowing for students' freedom of expression. Moreover, teachers themselves may *need* such conversations to enrich themselves by experiencing the joy of thinking, speaking, and sharing with colleagues.

5. As regards teacher neutrality when facilitating a Socratic conversation, it seems that this should not be taken as literal neutrality aiming to erase the teacher's personality, because it is unattainable and also because the teacher's personality plays an important role. Rather, this guideline can point to the necessity to be aware of one's own positions and the reasoning behind them and withhold them at times in order to make space for the students to develop their own ideas.

Summarizing, this initial exploratory research pointed to the fact that, according to the educational actors participating in this research, Socratic conversation is a method that is demanding for the teacher, requires personal interest from the teacher, and that adequate support and training should be developed. More research should investigate possibilities to prepare teachers for facilitating Socratic conversations to help them find their own personal interest and meaning in such a pedagogical approach. Moreover, it seems that teachers could also benefit from Socratic conversations not only for training purposes but also for sharing experience and renewing their own joy of thinking and learning.

This research provides a significant contribution for understanding teacher's role during Socratic conversations with high school students. It also points to ways of supporting teachers using this method for promoting students' authentic moral growth during their school years, so that teachers themselves can benefit from it.

Acknowledgements

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CULTURAL LITERACY: CONCEPTUAL ISSUES OF SELECTING CONTENT OF TRADICIONAL CULTURAL IN EDUCATION

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ABSTRACT

Cultural literacy today is an important educational outcome in the context of individual identity, civic education and multiculturalism. It allows an individual to understand and respect themselves, their culture and the diversity of the other cultures, know the origins, and connotations.

Cultural literacy as a result of education is related to two ideas: how to live meaningfully, consciously in society and the cultural environment, how to take responsibility for cultural heritage and values and create cultural values for oneself.

Traditional celebration and rituals are an important phenomenon in traditional culture. In the rituals, society has encoded the main world scenes and patterns of human behavior that have contributed to the well-being of the collective and the individual. The attachment of a ritual to a specific point in *time* and *space* is one of the most important conditions for its existence. Eternity and infinity are too vague abstractions for the limited human imagination. In order to understand the world we live in, these abstractions are saturated with reference points, markers. To master the content of traditional celebration means to orient oneself in these spatial and temporal markers, to know the *participants* of the ritual, their roles and functions, at the same time offering to experience those aspects of the *ritual* in which the experience cannot be explained only by rational thought processes. In this article the components of the content of the traditional cultural calendar celebration from the point of view of the ritual were substantiate. Recommendations for the implementation of traditional culture content in primary education are offered.

Keywords: cultural literacy, education, traditional celebration, ritual, components of traditional culture learning content

Introduction

Culture is a basic point of reference for people to make sense of their lives and is a driver of economic growth, prosperity and wellbeing. The goal of UNESCO's The 2030 Agenda Culture for Sustainable Development

is oriented towards sustainable development goals and provides integrate cultural heritage into education programs in order to open new ways for more culture-sensitive approaches in education (UNESCO, 2015).

Culture represents a source of identity, innovation and creativity for the individual and community; and is an important factor in building social inclusion and eradicating poverty, providing for economic growth and ownership of development processes. Recognizing, assessing and acquiring cultural heritage as a value is the foundation of a welfare society (Sustainable Development Strategy of Latvia ..., 2010).

The new Latvia education curriculum is focused on developing the students's cultural literacy, including highlighting the importance of learning the traditional culture within educational process. As a significant concept of ongoing education reform in Latvia, cultural literacy seen as an instrument, that will help individual to understand and respect themselves, their culture and the diversity of other cultures (Skola2030, Regulations on State..., 2018). According to Hirsh, cultural literacy is a set of knowledge and skills necessary to understand complex situations that make up the cultural structure of people. Literacy of a culture arise over time with consistent exposure to and participation in culture (Hirsch, 1987). Cultural literacy means being able to understand and engaged with traditions, activities and history of a group of people from a given culture in different cultural spaces.

There is a link between the school student's cultural literacy and the teacher's ability to promote it. An important role is played by the teacher's ability to choose the content of the curriculum – the body of knowledge and information that teachers teach and that students are expected to learn in a given subject or content area in order to develop students' cultural literacy.

There are many valuable projects and programs in different countries aimed at cultural heritage into formal education and raising awareness about the links between traditional culture / intangible cultural heritage and education for sustainable development (UNESCO, 2015). For several years, in Scandinavia has had a targeted education policy to promote the sustainability of local languages and cultures. The Saami language and culture education programs is one of the good practice examples of responsible development of local traditional culture and language content in Norway and Finland education systems. The content of education in Scandinavia includes the acquisition of oral traditions and expressions, including language as a carrier of intangible cultural heritage; learning customs, rituals and holidays; acquisition of knowledge and customs related to nature and the universe; both the acquisition of traditional craft skills (Norwegian Ministry…, 2009; Szilvasi, 2016; Keskitalo, 2021). The

importance of learning cultural traditions is also emphasized in the content of Lithuanian education. As Mardosa (2018) wrote, "The focus on the creation of civic society in Lithuania did not eliminate the need for the teaching of ethnic culture in schools. The Law on the Principles of State Protection of Ethnic Culture provide for the teaching of ethnic culture at several school stages, the status of ethnic culture in the country extends the implementation of the objectives enshrined in the Concept of National School. Problems in the teaching of ethnic culture in schools are posed by an undefined and insufficiently conceptualized interpretation of culture content."

Assessing the result of Latvia's curriculum reform, it can be concluded that the content of traditional culture is still scattered across subjects, traditions, cultural heritage, history topics more emphasized in the fields of Language, Social sciences and Art. However, the acquisition of the content of traditional culture from the perspective of traditional calendar festivals is quite clearly marked in the educational documents (Regulations on State ..., 2018) marked in the educational documents (Regulations on State ..., 2018; Siliņa-Jasjukeviča, Briška, Juškevičiene, 2019).

However, there is still a lack of scientifically based explanation how to choose the components of traditional cultural content in order to better target students' cultural literacy in education.

Methodology

This is theoretical study and it aims to contribute to the body of knowledge on teaching Latvian traditional culture content in primary education by addressing the research question: what components of traditional culture content should be included in the curriculum in order to develop student's cultural literacy as a result of education?

To achieve this goal:

1. The concept *cultural literacy* was analyzed;
2. The term *traditional culture* was analyzed and components of traditional culture content from the ritual perspective were conceptualized.
3. Suggestions for the implementation of traditional culture content in teaching and learning process in primary education were provided.

Research method: monographic method, identifying, selecting and analyzing professional and scientific literature in international databases and desk research (policy planning documents).

Results and Discussion

Cultural literacy as a result of education

Every nation in the world has its own, unique worldview – culture. Culture is a set of spiritual, material, intellectual and emotional characteristics that belong to a society or social group and are passed down from generation to generation. Culture is not only art and literature, but also a way of life, a way of coexistence, a system of values, traditions and beliefs: in a narrower sense, culture is understood as a professional activity in literature, fine arts, music, dance, theater and related fields; in a broader sense, culture is a system of attitudes, ideas, meanings, symbols and values, a way of life of a group of people or a nation, a set of beliefs, traditions, practical skills; in the broadest sense – everything man-made, cultivated, transformed, which is not nature (Geertz, 1973; Rogof, 2003; Griswold, 2013; Banks, Cherry & McGee, 2015 et al.)

The development of a child outside culture is not possible (Rogoff, 2003; Parker, Webb, Wilson 2017). Culture makes a person a person, and a person understands and continues to shape culture. Culture as a whole includes external, visible, material manifestations and the inner, symbolic meaning or cultural core. Society and people who share a same culture attach a specific denotation to an object, sound, or place. Education plays a major role in transmission of culture, and at times, force the transformation of culture (Young, 2014).

Cultural literacy is one of significant outcomes of education. *Literacy* is the highest degree of mental activity, which is manifested in the process of cognition, analytical thinking directed at the essence of things, exploration of ambiguities or contradictions, deeper exploration and finding connection (Glossary of Linguistic Didactics, 2011).

In the same time there are various explanations in the scientific literature what cultural understanding is. The following terms are used to denote this phenomenon. *Cultural understanding* are used, when we talk abot the knowledge and understanding of and experiences with one's own culture as well as cultures of others that inform one's ability to navigate new experiences (Poirier, Wooldridge 2009; 2015; Parker, Webb, Wilson 2017). *Cultural awareness* describes someone's cultural awareness and their understanding of the differences between themselves and people from other countries or other backgrounds, differences in attitudes and values (Collins Dictionary, 2022). The term *cultural competence* are used, when we thought about the form of attitudes, skills, and system savviness for cross cultural situations involving individuals' flexibility and capability to properly assess and treat all people respectfully and in a suitable manner appropriate to their culture (Chrisman 2007; Robinson 2019). The term *cultural literacy*

includes all above mentioned and adds the ability to critically reflect on and, if necessary, to bring about change in one's own culture. It also embraces the ability to analyze the behaviors of dominant cultures in relation to other cultures, for instance, the impact of globalization or cross-cultural partnerships on local cultures around the world (Polistina, Leader 2009; Hirsh, Kett, Trefill 2002, 2016). It can be concluded, that the term *cultural literacy* is a more precise concept for development of understanding of culture in education, as it includes one's *holistic involvement and active cultural experience and participation.*

In new curriculum *cultural literacy* is explained as a complex phenomenon, it allows the individual to better understand oneself and one's own culture, and is essential in dealing with other cultures. It is an important point of contact for different areas of life and provides an opportunity for dialogue, despite the differences. The school student develops an understanding of the traditions, beliefs, habits, lifestyle patterns, values and expressions that characterize a society or a particular community. Cultural literacy is acquired in a number of learning areas to enable the development of a multifaceted understanding and attitude based on respect for one's own culture and the diversity of other cultures (Regulations on the..., 2018).

Analyzing content of different fields in the new curriculum, the cultural literacy is developed in the following directions:

- understanding of one's own cultural thoughts and behavior (critical reflection on one's own cultural choices, judgments, interpretations, prejudices, stereotypes, rules, desires, attitudes, etc., exploring one's own cultural identity and background);
- understanding of the direct (social and physical) cultural environment (knowledge of the cultural norms, habits, etc. of one's place of residence, understanding of how the direct social and physical environment shapes cultural thinking and behavior);
- understanding of the country and history (exploring one's cultural roots and identity, understanding of festive events, cultural traditions, customs, heritage and history). Understanding the heritage of a region or country as a unique value;
- international, intercultural understanding (ability to approach the expressions of other cultures without previous assumptions, stereotypes or disrespect, but with empathy, understanding, empathy and respect) (Regulations on the ..., 2018).

Purposefully planned and implemented traditional cultural acquisition in education includes the directions of cultural literacy listed above, if the school student's subjective feelings, emotional experiences, and the personal significance of learning are taken into account (Grossberg, 2010); if the cultural context is taken into account and its diverse communication with

others takes place (Helds, 2006); learning is linked to a student's personal cultural experience (Dewey, 1979; Griffin, Holford & Jarvis, 2003); culture is known not only as cognition but also as personal involvement, cultural experience, analysis, interpretation and evaluation (learning through culture) (Dewey, 1979; Bennett, Grossberg & Williams, 2005; Grossberg, 2010; Halupa, 2016; Briška, Kalēja-Gasparoviča, 2020).

The evaluation of meaning of traditional culture and related knowledge and practices in future education is encouraged by the UNESCO report (2021), which proposes to take stock of the prevailing view that epistles of local traditional cultures, i. e., the traditional common space of knowledge are objects of study, not real approaches to understanding and exploring the world. Moreover, report emphasizes the idea that both innovative and tradition-based practices can be promising, as both create new opportunities in our future living.

What components of traditional culture content should be emphasized in the educational process in order to develop better cultural literacy as aresult of education?

Traditional culture – Tradition – Ritual

Traditional culture is a culture that is centered on tradition – a set of ideas, rituals, habits, activities that are passed down from generation to generation in a particular community of people. However, it must be borne in mind that today traditions themselves, while serving as a basis for passing on values, are becoming volatile and changeable. With the gradual disappearance of the traditional way of life, there has been a break in the transmission of traditions from generation to generation and the school is now becoming one of the main institutions where children can learn about the intangible cultural heritage – values, cultural norms and their perceptions of the world and society.

Nowadays, the understanding of traditions has changed. If in the past tradition was considered to be the basis of events in the present, it is now assumed that the past is created by the present. Traditions do not exist as a force that develops on its own, they exist as interpretations, the content of which is formed by the view of the present (Kūle, 2005).

Many theoretical approaches to the concept of "tradition", especially in relation to ritual activities, are structured around the familiar problem of continuity and change. It is clear that some traditions remain consistent enough over time to give people a sense of continuity with what is considered a precedent. But it is equally clear that traditions change over time in structure, details, interpretation, and the like (Bell, 2009: 119). In order to interpret tradition creatively, one must be knowledgeable, educated in traditional culture and know the principles that exist in it. Creativity

based on knowledge allows you to develop ideas, improvise freely, react to situations.

Various disciplines explore cultural practices through the lens of ritual and ritual is itself, in turn, conceived of in an open way (The Study of…, 2015). Also in the theory of traditions, the ritual occupies a central place, therefore the understanding of traditional celebration rituals is important in the acquisition of traditional culture. A ritual is a set of actions based primarily on their symbolic values. The team constantly translates samples, stereotypes, it is focused on repeated messages determined by tradition or a priestly decree (Penner, 2016; Baiburin, 1993). Despite the variety of recognized methodological perspectives, there is a surprising degree of consistency in ritual descriptions. According to Bell (2009) ritual is a form of critical thinking, a node in which some opposite social or cultural forces come together. Examples include oppositions such as tradition and change, order and chaos, the individual and the group, subjectivity and objectivity, nature and culture, the real and the imagined ideal.

By learning rituals and cultural awareness, children learn not only folklore – songs, fairy tales, riddles, proverbs, but also non-verbal communication, which has its own structure and semantics. Ritual behavior is an obvious means of non-verbal communication and meaning and must be learned in practice alongside an understanding of the relationship between ritual and myth. Elements of speech in a ritual environment, referring to a belief system or mythology, together with kinesis, better reveal the meaning and significance of the ritual (Penner, 2016).

Ritual-oriented culture does not have a unified semiotic system through which information is recorded, stored, and processed as it is in written culture. The natural and cultural environment in which a person lives acquires the character of signs/meanings. All these semiotic means, together with linguistic texts, myths, kinship terms, music and other cultural phenomena, acquire a common field of meaning that forms the worldview. In a culture that focuses on repeating the same texts rather than reproducing them in modern culture, the transmission of information is not through laws (a type of modern culture) but through samples and 'quotations'. Such a culture cannot be learned with the usual logic, it can only be learned "by heart" in the same way as puzzle memories. Mnemonic means, including rhythm, sound, melody, play a key role in a culture built on remembrance and memorization (Baiburin, 1993).

A definition of rituals is that they are patterned human activities with *deep cultural meaning,* and each cultural group stipulates this distinct meaning. Cultural meanings of different ethnic groups may be quite different. We can be sure that cultural meanings are the core element of rituals. Exploration into "cultural facts" is the core of ritual study and

all anthropological fieldwork. After determining the belief systems (i. e., cultural facts) of the ethnic group through research, scholars can still do research find a meaning (Wu 2018). Often, practical activities with school students, common celebration of calendar holidays help participants of the ritual to come to an understanding the meaning of cultural processes.

Ritual and its components

In traditional culture, a person's life takes *place* on two levels – the execution of a ritual program (both individual and collective scenario) and daily life, which serves as an intermediate between rituals (experiencing the past and preparing for the next festival) (Baiburin, 1993). The ritual program is based on two-cycle rituals. Calendar rituals determine the rhythm of collective life, rituals in honor of a person's life determine the rhythm of individual life and they are always associated with change, transition, transformation.

As ritual theorist Ronald L. Grimes writes, ritual is conceptualized as factorable into constituents: *actions, actors, places, times, objects, languages, and groups*. If one thinks of the whole statically, together these constitute ritual "structures." If one imagines dynamically, they are "processes". Ritual includes paradoxical pairs of processes – empower and disempower groups, reinforce the status quo and enact transformation, make and unmake meaning, etc. (Grimes, 2013). Perhaps thanks to this phenomenon, with the help of rituals, existential crises in a person's life can be solved, as well as allowing him to discover own personal meaning.

The ritual is always tied to a certain point in *time* and *space*. In order for a person to understand the world in which he lives with his limited imagination, abstractions such as space and time are filled with markers. Calendar rituals are the following time markers. They mark a certain time of day, month, year, stage of life or the beginning of a new event. With the help of a ritual you can switch from one flow of time to another. Thus, a certain space-time orientation in which the ritual takes place marks "sacred time" and "sacred space" (Penner, 2016).

Ritual *objects or attributes* are an important component in understanding the ritual. They have several meanings – functional, symbolic, historical. They gain their power in the ritual, when a combination of person, object and action is formed, which is also the essence of the ritual. Things, objects, materiality are imbued with religious meanings (Nugteren, 2019).

There is no spectator category in the ritual, all *participants* are involved, everyone is equally responsible for what is happening. Therefore, the participants' knowledge and understanding of the meaning of the celebration, the processes and the tasks to be performed are important. There is only one specific reality in a ritual. It has no viewers. There are no roles

for the participants, but if there are any, they are the only ones possible. Consequently, there is no alternative pattern of behavior. The ritual always has an end goal, a functional direction towards it. The ritual is passed down from generation to generation through learning – learns parts, fragments (texts, songs, games, ritual attributes, food, actions, etc.). By repeating the ritual from year to year, the structures of thoughts, behaviors and organizations disorganized over time are restored, preserved and supplemented. The immutability of the world model, the paradigm of meaning, is being tested (Baiburin, 1993). Therefore, it would be important to experience the traditional celebration in every primary school class, filling their content with new, deeper knowledge and skills from year to year.

Traditional culture and modern culture

Today, as social, economic, and political conditions change, so do rituals, and their transformation involves the reconceptualization of space and time (Tong, Kong, 2000). Holidays from the traditional rural environment and calendar have now moved to the city and are celebrated in schools with classmates, teachers and parents, often at a time that suits everyone. In traditional schools, schools are replaced by schoolmates, the hostess – the teacher and the parents of the children are often guests who have come to celebrate. Modernity requires modifications, while preserving the essence and *meaning* of rituals.

The persistence of traditional rituals and celebrations in today's world is complicated. One might think that consumer society requires that events and rituals be constantly changing. However, what we see happening and which needs explanation and understanding is very different. Even in today's and globalized world, there are traditional holidays that are preserved and valued. Some are even growing in popularity. In addition, there is a trend towards creativity based on a romanticized view of the past and the appropriation and adaptation of other cultural rituals and customs. Traditions and how we use them are at the heart of many of our contemporary events (Laing, Frost, 2015).

Modernity in the acquisition of tradition, cultural literacy requires such an aspect as an understanding of meaning. Can the meaning be understood by learning only a set of facts and information? As Baumann points, the creation of culture is not an improvisation over time, but an internal project of social heredity that competes with moments of social change. So sociums function simultaneously in different vector directions. On the one hand, traditions ensure the maintenance of qualitative certainty, on the other hand, innovation offers a qualitatively different future. Both positions compete with each other, while both are equally responsible for the future of society (Baumann, 1996).

According to Lakatos (2003), three components are important to the continuation of any tradition: its constant and enduring 'core', the 'protective belt' that surrounds and protects the core, and its variable and dynamic periphery. In traditional society, too, individual forms of behavior have existed and alternative solutions have been allowed. The plasticity of stereotypes is allowed by several conditions: differentiation of roles in the collective, different degrees of rigor in the regulation of different spheres of life, diversity in the realization of the same notions, and finally, the impossibility of two absolutely identical situations (Lakatos, 2003).

Today, the importance of communication in the sustainability of culture is emphasized. Why support an approach to teaching traditional culture from a ritual perspective? In preparation for and celebration of festivities, the individual is socialized, and the qualities (self-control, observance of collective demands, self-denial, etc.) necessary for life in society develop. The team that performs holiday rituals together is more aware of mutual togetherness, solidarity, strengthens its internal ties. Ritual as a phenomenon of traditional culture allows to get to know and experience this culture as a whole, not in fragments. Festive rituals also have an emotional, psychotherapeutic effect, the accumulated tension is removed. A common emotional mood unites the participants.

The "things" tested are not museum objects, but dynamic festivals and celebrations that continue to exist. Based on the power of historical and cultural traditions, they are manifestations of heritage that exist in three temporalities: the celebration of the past, the present, and the goal of continuing and influencing the future (Laing, Frost, 2015).

Choosing and combining the content of different school subjects can become a useful tool for developing the student's cultural literacy in traditional culture. In the process of building cultural literacy, it is important to pay attention to time, space, participants, actions, and their meaning. The student practices traditional culture: not only learns about it at school, but learns to use cultural traditions in certain every day and festive situations. The child does not study *about* language, *about* mathematics, *about* natural science, but learns these school subjects in the context of culture thus improving their cultural literacy. The content of learning becomes a means of getting to know and understand the world (nature, society and culture). The following explanations offered below include all content components important for getting to know culture in a whole. For example, the learning content of natural science and social science helps to understand the natural processes, the rhythm of the seasons and the related traditions of work and celebrations, the norms of co-operation behaviour in everyday life and celebration. The language, music and sports learning content allow to participate and express

oneself in song, dance, music, various ritual activities. The preparation of attributes: traditional room decorations, masks, wreaths, braids, dishes, becomes a result of learning the content of handicrafts and technology. By using language meaningfully in cultural context, the child learns to listen and hear, ask and answer, name, tell and recount, justify and evaluate, get to know traditions through folk songs, fairy tales, legends, beliefs, riddles etc. The learning content of the mathematics becomes an important tool if it is necessary to measure, weigh, count, calculate the attributes of the traditional celebration, calculate the number of participants, plan the duration of various activities. In a meaningful process of learning traditional cultural content, the child learns to understand that what has been done, taught and prepared is not accidental, but is useful in various episodes of the celebration. The knowledge and skills acquired in the context promote a positive attitude towards learning in general. The child perceives the traditional culture content offered by the teacher with understanding, because he sees the importance of learning it in a wider – celebration – context.

Conclusion

The research lead to folowing conclusions:
- The cultural literacy is at the heart of competence-based education.
- The cultural literacy is complex, allows for a better understanding of oneself and one's own culture, and is essential in dealing with other cultures.
- The new competence education emphasizes the acquisition of traditional culture, cultural heritage and traditions.
- Learning traditional culture from a ritual perspective is conceptualized by the following components:
  Time. When? Why?
  Space. Where are the activities carried out during the preparation and running of the traditional celebration? Why?
  Participants. Who participates? Why?
  Action. What is traditionally done? How are you dressed? What special items are prepared and used? What are you eating? What do you do, sing, play, dance, say?
  Purpose, meaning. Meaning of the actions to be performed.
- The sum of these components provides a holistic understanding of the essence of traditional culture and ensures the continuity of culture. It is recommended to pay attention to all these components in the learning about any traditional, modern or other personally significant cultural traditions in order to promote their understanding as a whole.

- In order to create an understanding of society, culture and its values (to develop cultural literacy), each field of education, the content of each school subject has its own meaning. The education becomes not only a tool of cultural learning but also the tool of cultural transmission.
- The practical activities with school students, common celebration of calendar holidays help participants of the ritual to come to an understanding the meaning of cultural processes.

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ENTREPRENEURIAL SKILLS – A PATHWAY TO SUSTAINABLE SOCIAL INNOVATIONS?

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ABSTRACT

Along with globalization processes and adjustments – social and environmental problems that are challenging global sustainability in the labor market and society, it's essential to ask whether the demand for education is also changing? Having regard to the fact that in 2015 United Nations (UN) member states adopted the 17th Sustainable Development Goal (SDGs) to address global challenges and emphasized the importance of quality education in Sustainable Development Goal 4 and The Organisation for Economic Co-operation and Development (OECD) countries have long recognized the need to develop skilled people through education. As they strive to find new sources of growth to underpin a solid and sustainable future, it is crucial to understand the best ways to advance social innovation, which is key to solving these increasing demands in the entrepreneurial process. It can manifest itself in various elements of pedagogical work.

The study conducted content analysis to find out how social innovations and entrepreneurial skills show in the experience of four academic representatives of educational sciences to analyze various perspectives and opportunities of social innovation implementation by promoting entrepreneurial skills.

To reach the aim of the research, three following questions were asked:

1. How has the meaning of social innovation in the educational sciences changed since 2015, when UN member states adopted the 2030 Agenda for Sustainable Development and 17 Sustainable Development goals (SDGs)?
2. What entrepreneurial skills help implement social innovation in the educational sciences?
3. What are the most critical factors for the sustainable social innovations implemented in the educational sciences?

The study results reveal diverse and ordinary comprehensions depending on professional academic experience, which has been listed and analyzed through the theories of social innovation.

Keywords: *Entrepreneurial skills, Higher education, Education for Sustainable Development, Pedagogical entrepreneurship, Social Innovations*

Introduction

The increasing global inequality of opportunities and individual marginalization call for initiative and innovation to promote individual participation in democratic institutions, social unity, and justice, and human rights and autonomy, which all profoundly impact society and the economy (United Nations, 2020).

In 2015, the United Nations General Assembly adopted Transforming Our World: A 2030 Agenda for Sustainable Development, or Agenda 2030. It sets out 17 Sustainable Development Goals (SDGs) and 169 sub-targets for global poverty reduction and sustainable development (United Nations, 2015).

All 17 goals of sustainable development that affect the environment, society, and the economy are essential, but none of them can be achieved without education. That is why United Nations Educational, Scientific and Cultural Organization (UNESCO) is developing various initiatives to strengthen the role of education in global processes.

However, in the Prospective Report on the Future of Social Innovation in Education, it is mentioned that numerous social, economic, and technological developments keep bringing changes to the context in which policy making aims to shape the future of education (European Union, 2020).

In 2020, the International Commission on the Future of Education was established. Within two years, in the process of the global consultation, it formulated a vision for education development in 2050, placing education as a common good for society (UNESCO, 2021).

All the above-mentioned means that there is a growing consensus among practitioners, policymakers, and the research community that technological innovations alone cannot overcome the social and economic challenges modern societies – including the field of education – are facing. The importance of social innovation in successfully addressing social, economic, political, and environmental challenges of the twenty-first century has been recognized from a global perspective (Domanski et al., 2020). This shows that without relevant social skills, we will not be able to succeed in tackling the challenges of sustainability.

Some skills have been identified as being fundamental in developing innovation: 1) creativity; 2) self-efficacy; 3) energy and enthusiasm; 4) empathy and curiosity; 5) brokering, linked to empathy; 6) risk-propensity, 7) leadership (Zazzerini, 2021). These skills almost overlap with the entrepreneurial skills (Lackeus, 2015), which are formed, consolidated, and, finally, realized by separate individuals due to certain abilities characteristic to everyone in varying degrees. These separately identified abilities determine general entrepreneurial ability, as well as his ability to

engage in entrepreneurship in the innovation sphere where the long-term social and sustainable projects can be developed. It has been researched that innovation and entrepreneurial skills can be acquired, trained, and developed over time (Zazzerini, 2021) thereby the educational process can be used as an instrument for the development of entrepreneurial skills and innovative solutions in diverse spheres of life.

The research problem is formulated based on the social innovation perspectives developed by Matteo Bonifacio (2014), analyzing policy documents.

The eight Millennium Development Goals (MDGs) addressed to the **social demand perspective**, which applies to the most vulnerable social groups to reduce such issues as poverty (United Nations, 2000; Bonifacio, 2014; Komarkova et al., 2015).

Sustainable development goals (SDGs) follow the perspective of a societal challenge and help address societal challenges in various areas – environmental, economic, and societal- showing that these areas are not separate but interlinked (United Nations, 2015; Bonifacio, 2014; Komarkova et al., 2015).

In turn, the UNESCO report on the Futures of Education shows **a systemic perspective to change** and promotes the change and a new culture of cooperation, emphasizing the well-being of people through education as a common good for society (UNESCO, 2021; Bonifacio, 2014; Komarkova et al., 2015).

All the above shows that understanding social innovation from a global perspective has been very diverse and multifaceted. Still, it is only in recent years that international policy documents have shown that the issue of social innovation is also becoming relevant in education. Hence, there are still challenges to successfully implementing them and making them sustainable (European Union, 2020; Oeij et al., 2019). Therefore, this article will focus on promoting social innovation through entrepreneurial skills.

Entrepreneurial skills as a Pathway to Sustainable Social Innovations

Although entrepreneurship has a long history in academic research, policy, and practice – as an economic, organizational, and individual phenomenon, initially, the conceptualization of entrepreneurship competence was strongly dependent on the financial aspects of entrepreneurship (Komarkova et al., 2015). Since the 20th century, the Austrian economist Joseph Schumpeter viewed entrepreneurs as agents of change responsible for the 'creative destruction' that happens as a consequence of entrepreneurial activity, accordingly, presenting the element of innovation and introducing a new value proposition (Schumpeter, 1934).

Entrepreneurship competence, defined as a "sense of initiative and entrepreneurship, is recognized by the European Union as one of the eight key competencies for lifelong learning. It has been stated that entrepreneurship competence is necessary for all members of a knowledge-based society (European Parliament and Council, 2006) where many reasons can be said. For instance, the development of entrepreneurial skills deals with the promotion of creative skills that can be used in practice, education and an environment that supports innovation (Binks et al., 2006; Gundry et al., 2014). Within the framework presented in EntreComp, entrepreneurial skills are described as a basic generic competence applicable to individuals and groups and include three competence areas and 15 dimensions (Bacigalupo et al., 2016). The three competence areas presented in EntreComp are interconnected:

1) ideas and opportunities – the ability to spot opportunities, creativity, vision, evaluation of ideas, ethical and sustainable thinking;
2) resources – assessment of one's abilities, motivation, and perseverance, mobilizing resources, financial and economic competence, communication, and human resources mobilization;
3) into action – initiative, planning, action in times of uncertainty, teamwork, learning from experience (Bacigalupo et al., 2016).

Proactivity and risk-taking is a part of entrepreneurial skills, and it has been researched that proactivity and risk-taking influence the number of innovations generated (Pérez-Luño et al., 2011) where social as well as purely commercial products and services are made. Entrepreneurial ability also demands adaptive behaviors and schemes to impact others' activity in associative factors (Ferris et al., 2005; Tocher et al., 2012), in that way promoting innovation and initiate high returns (Wei et al., 2019).

The link between innovation and entrepreneurship has been widely discussed in research (Komarkova et al., 2015), and there are stated two main models of entrepreneurs:

1) those who run the business without any innovation and
2) those who transform innovative ideas into economically viable ventures (Baumol, 1993).

Although mainly entrepreneurs are associated with business, different types of terms and broader meanings than commercial can be applied. In this research, the authors step beyond the traditional view and look at the general concept of the relation between entrepreneurial skills and social innovations, considering that innovations (either social or commercial or both) are a part of alert types of firms. There is a particular term for entrepreneurial employers defined – intrapreneurs, that presents an emerging behavior that involves intentions and actions that depart from 'customary ways of doing business' (Antoncic & Hisrich, 2001; 2003), and it plays

a vital role in the innovativeness and competitiveness of established and large organizations (Pinchot, 1985; Zahra, 1991). Also, the term social entrepreneurship has been recently entering the global stage, and it is an emerging type of entrepreneurship that targets social/societal value creation. It may be seen as a phenomenon that combines two inseparable elements – economic and community/social – be they only different levels of the same action (Komarkova et al., 2015).

MacLean et al. (2013) identified three common characteristics between social innovation and social entrepreneurship:

1) innovation is the basis for both, with social entrepreneurship about channeling entrepreneurial activity towards solving social problems;
2) the creation of social value is central to both concepts;
3) the rise of social entrepreneurship is due to the increasing inability of the state to satisfy growing social welfare needs.

In this research, entrepreneurs are seen from a competence perspective, analyzing the characteristics that can be applied in diverse disciplines, including education and feeding the soil for generating innovative solutions. The innovative entrepreneur's characteristics are imagination, boldness, ingenuity, leadership, persistence, and determination (Baumol, 1993; Metcalfe, 2004; Kirzner, 1978; Komarkova et al., 2015). Five dimensions determine entrepreneurship: 'risk-taking,' 'innovativeness,' and 'proactiveness' together with 'autonomy' and 'competitive aggressiveness' (Lumpkin & Dess, 1996; Rauch et al., 2009). Innovativeness is associated with creativity and experimentation and leads to the conclusion that entrepreneurship and innovation are inseparable.

The concept of entrepreneurship is often associated with innovation, which does not always have to be a tradable product for the market – it can be a social innovation, for instance, in an education system, environmental policy, or social inequity (Altan, 2015).

Social innovation is critical in the entrepreneurial process. It can manifest itself in various elements of the educational field – where entrepreneurial academic staff see problems as opportunities for the social change they have envisioned (Van der Heijden et al., 2015).

However, it is essential to mention the general difference between social innovation and innovation. This difference is mainly due to the concept of 'social.' In this context, it is argued that social innovation does not mean technological advances or in the context of tangible goods or services, but the level of social practices that aims to benefit society (Oeij et al., 2019).

This means that social innovation is not only a difficult concept to define because the social element is hard to measure, but the term "innovation" concerning "social" is also a complex one (Van der Have & Rubalcaba, 2016; Ozdemir & Gupta, 2021).

In the context of current EU policies (2017), the term social innovation was used in the "European Pillar of Social Rights" to confirm the European commitment to the three categories: Equal opportunities and access to the labor market, fair working conditions, and social protection and inclusion.

The definition of social innovation states it as new responses to current social needs and the development of new social relationships and different combination of forms of cooperation that go beyond established institutional contexts, enabling and reinvolving vulnerable groups either in or because of the innovation process (Unceta, et al., 2019) Thus, social innovations are social in terms of their goals and the means to achieve them (BEPA, 2010; Edwards-Schachter & Wallace, 2017).

Hence, if social innovation and innovation are seen as a process, then researchers use procedural phases in both. This process is inherently complex because many variables interact, and the outcome of their interactions cannot be predicted or controlled. Three successive phases are distinguished in the innovation process: invention, development, and implementation. Different stages require different skills and different types of stakeholders. (Garud et al., 2013).

Edwards-Schachter and Wallace (2017) state that identifying and addressing societal and wicked problems as drivers of social innovation goes along with the participation of 'non-traditional' actors such as civil society, third sector, non-governmental organizations (NGOs), social movements, social entrepreneurs, and activists.

Importantly, especially in education, many definitions of social innovation emphasize the empowerment of citizens as a primary aim. This distinguishes social innovations from other services consumed and driven by demand based on prices, income, and preferences. Social innovations attempt to assign new roles and relationships (e. g., between groups in society) to individuals or parts of society in need, and they develop assets and capabilities and the more efficient and environmentally sustainable use of existing assets and resources (Von Jacobi & Chiaperro, 2015; Windrum et al., 2016).

In this research, the focus is on social innovations in the field of educational sciences. Due to the changing demands and ongoing challenges, academic staff, students, and other stakeholders must show initiative that has a positive relationship with innovation (Naldi et al., 2007). Students' views on their entrepreneurship education are related to their perception of innovation; fostering innovation through entrepreneurship education is the primary task of universities. Innovative awareness and creative ability are the core process of students' innovation activities, which are also influenced by innovative personality. It might enhance the confidence of the students that they will be able to solve new and unexpected problems (Wei et al., 2019).

Students and academic staff with entrepreneurial skills can more effectively cope with environmental uncertainties and new challenges (Brian & Norma, 2010; Seikkula-Leino, 2011; Premand et al., 2016; Ferris et al., 2000) recognize opportunities and exploitation, take risks and innovate (Chandler & Hanks, 1994; Fillis & Rentschler, 2010). Opportunity recognition is defined as the process of identifying new and potentially successful ideas (Shane & Eckhardt, 2003), which are influenced by individual characteristics and contextual factors (Wei et al., 2019) in education, it can be observed in the classroom and lectures where teachers and professors evaluate the needs of the concrete audience and create appropriate solutions/ innovations to improve the quality of the study. Entrepreneurial activities are present in diverse levels of educational discipline, starting with the teacher to academic and non-academic institutions such as social enterprises that offers topical solutions. For instance, digital applications were developed during the pandemic to facilitate the learning and teaching process.

Another significant factor of entrepreneurial skills is a social network and interpersonal relationships that help expand the scope of resource acquisition and improve the ability of resource integration. Interpersonal relationships help participants understand and implement innovative decisions and enhance the efficiency of resource development and product innovation (Wei et al., 2019).

In summary, specific entrepreneurial skills, such as proactivity, risk-taking, teamwork, spotting opportunities, and resource management, are catalysts for innovative actions. The outcome of innovation is the generated value, which may have the form of economic and financial gains, be it of social, societal, environmental, and cultural nature, or a combination of all these factors as encountered in academic debate. More importantly, this value should be novel – a result of the creative variety of resources and innovative capabilities that respond to existing (or future) opportunities.

All things considered, the concept of entrepreneurship is often associated with innovation, which does not necessarily have to be a market product – it can be a social innovation, for example, in the education system. Social innovation is a difficult concept to define, as the social element is difficult to measure; it is also reflected in the meaning of the term "innovation" in relation to "social."

However, the main difference between social innovation and innovation, in general, is that social innovation is social in terms of its goals and the means to achieve them, emphasizing the empowerment of citizens as a primary goal. Additionally, similarities can be found by analyzing social innovation and innovation from a procedural perspective, where both can be implemented in three phases: invention, development, and implementation.

Entrepreneurship skills – opportunity recognition, creativity, evaluation of ideas, ethical and sustainable thinking, mobilizing resources, initiative, and proactivity can foster social innovations in educational sciences – where the academic staff sees problems as opportunities for their intended social change and by using recourses deals with global, national, and community issues, fostering sustainability.

Methods

Content analysis was used in this study to analyze various perspectives and opportunities for social innovation implementation by promoting entrepreneurial skills through the experience of four academic representatives of the educational sciences field.

To reach the aim of the research, four research tasks were performed:

1. Conduct four structured interviews with experts from educational sciences and social entrepreneurship fields.
2. Store data in the QSR NviVo 12 program.
3. Analyse data using an Inductive qualitative content analysis approach with three main phases (Elo & Kyngäs, 2008).
4. Structure and report findings.

To perform the first task of the study, four remote interviews were organized with educational science field experts. Discussions took about 30 minutes and consisted of three open-ended questions:

1. How has the meaning of social innovation in the educational sciences changed since 2015, when UN member states adopted the 2030 Agenda for Sustainable Development and 17 Sustainable Development goals (SDGs)?
2. What entrepreneurial skills help implement social innovation in the educational sciences?
3. What are the most critical factors for the sustainable social innovations implemented in the educational sciences?

The inductive coding process was represented in three main phases: preparation, organizing, and reporting (Elo & Kyngäs, 2008).

In the **Preparation** phase, units of analysis in the video format were transcribed in words. They were selected and stored as sentences and words as it was decided to analyze only manifest content without latent content.

In the second phase – **Organising**, researchers "got to know" unstructured data using QSR NVivo 12 – a qualitative data analysis program (QDA) with open coding (notes and text written), developing coding sheets (headings), grouping them by higher-order, categorizing and making abstractions – formulating a general description of the research topic through generating categories.

The last phase – **Reporting,** was the formulation of a general description of the research topic through generating categories and reporting results by developing categories and sub-categories. The aim of the third phase was to attain a condensed and broad description of the phenomenon, and the outcome of the analysis is concepts or categories describing the phenomenon. Usually, the purpose of those concepts or types is to build up a model, conceptual system, conceptual map, or categories. (Elo, Kyngäs, 2008; Granenheim et al., 2017)

To ensure the validity of the open coding of the study data, categories and subcategories were discussed among the researchers and how the data would be labeled and re-coded as needed.

Results

As a result of the inductive content analysis, three main categories were developed: Social Innovation in Education, Entrepreneurial Skills for Development of Social Innovation, and Criteria for Sustainable Social Innovation. Each of the three categories had several generic categories, and those were divided into several sub-categories. Categories were created based on the theoretical analysis of social innovation and entrepreneurship described in the previous chapters.

Regarding the first main category, six generic categories and 15 subcategories were developed. Experts emphasized that the first generic category – Innovation in the study process, can be a new study program, inclusive education, and Education for a Sustainable development approach where environmental issues can be tackled.

Second generic category – Added value in education implies science communication aspects, social entrepreneurship, intellectual commercialization, and interdisciplinarity aspects.

The third category – Global Competence, implies civic participation and citizen science that is needed to solve current global issues.

The fourth generic category emphasizes the paradigm shift in education, where the co-creation of knowledge is important. The teacher is no longer the only source of knowledge but creates knowledge together with the student.

The fifth general category is sustainability, which experts describe as a solution to significant ongoing social problems that have a long-term social impact.

The sixth category is a culture of cooperation, where experts mention the importance of cooperation between students and lecturers in the process of social innovation, as well as respect for students' needs and work-study balance (see Table 1).

Table 1. Social innovation in Education category

Main category	Generic category	Subcategory
Social innovation in education	Innovation in the study process	New study program Inclusive education Education for sustainable development
	Added value in education	Science communication Social entrepreneurship Intellectual commercialization Interdisciplinarity
	Global competence	Civic participation Citizen science
	Education paradigm shift	Co-creation of knowledge
	Sustainability	Solution for significant ongoing social problems which have long term social impact Comprehension about SDG's
	Culture of cooperation	Interaction of students and lecturers Student needs Work-studies balance

Regarding the second main category it be stated that entrepreneurial skills for the development of social innovation focuses on four generic categories (see Table 2).

Table 2. Entrepreneurial Skills for the Development of Social Innovation Category

Main category	Generic category	Subcategory
Entrepreneurial skills for the development of social innovation	Problem solving	Problem identification Focus Critical thinking
	Resources	Resource mobilisation Finding solutions by streamlining resources to create added value Planning and organising
	Communication	Co-creation Locally and globally
	Market analysis	Knowledge of society, Citizen science Ability to assess the impact of innovation on society Professional development

Problem solving which involves problem identification, critical thinking, and focus. The idea stands for ability and willingness to solve diverse problems – not only personal but societal as well. Resources that involve ability to plan and organise how to pool the necessary recourse to create an added value. Communication – within the community and globally if needed. It highlights the power of corporation and co creation. Market analysis – process of research where the social needs are discovered and the assessment of the impact of innovation on society is made.

Regarding the third main category – Criteria for Sustainable Social Innovation, experts mentioned three generic categories and seven subcategories.

The first generic category is Planning, where experts emphasize the importance of matching the needs of the labor market and students, attracting experts, performing Practice-based learning, Problem situation modeling, and solution prototyping to achieve sustainability in social innovation. The second generic category is feedback, where experts mention graduate testimonials like bachelor's, master's, or doctoral thesis, where sustainability issues can be tested. The third generic category is an example where experts mention that teachers or university lecturers need to be catalysts of change who inspire students. Lifelong learning also was mentioned as a criterion for sustainable social innovations and also voluntary work, which brings social innovation in practical dimensions and shows examples of its acquisition (see Table 3).

Table 3. Criteria for Sustainable Social Innovation category

Main category	Generic category	Subcategory
Criteria for sustainable social innovation	Planning	Matching the needs of the labour market and students Attracting experts Practice-based learning Problem situation modelling and solution prototyping
	Feedback	Graduate testimonials
	Example	Teachers – catalysts of change Lifelong learning

Discussion

Considering the Sustainable development goals as a topical policy stream, it can be acknowledged that Education for Sustainable Development is a newsworthy form of social innovation, as it addresses current social problems. However, the concept is complex and abstract because it aims to

integrate a balance between ecological, social, and economic dimensions into all aspects of teaching and learning. Corresponding is the concept of social innovation because it is difficult to define, and the social element is strenuous to measure.

Conclusions

Concerning the results of the study, it can be stated that at the beginning of 2015, social innovations were more related to environmental problems. However, over time, the relevance of Sustainable Development appears in education. Social innovation acquires a new meaning in educational sciences as it relies on the global policy process and is used to address pressing social needs.

In the entrepreneurship definitions, the most indistinguishable concept of social innovation in social entrepreneurship as they have at least three similarities – innovation is the basis for both. They tend to solve social problems, satisfy growing social needs, and create social value in this process.

Entrepreneurial skills such as – initiative, problem-solving skills, vision, ability to pool and effectively use resources, to plan, organize, lead, commercialize, assess impact, collaborate, co-create, be flexible, reflect and use feedback, recognize opportunities, think ethically and sustainably support the creation of social innovation in the educational sciences.

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THE NOTION OF SUSTAINABLE TEAM IN EDUCATIONAL INSTITUTION

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ABSTRACT

Sustainability has been a topical issue for more than 20 years not only dealing with environmental/ecological, social/cultural and economic issues. Combining social, economic, and environmental initiatives in education is a complex process that should result in a completely new vision of educational institutions. It raises the necessity for a management structure to encourage and support the sustainability initiatives within the organisation.

The article deals with one aspect of a larger scale and long-term grounded theory research to explore and define the concept of a sustainable team in educational institution. This article answers the research questions on how students are seen and perceived in the education management hierarchy of an educational institution, and what fosters the development of sustainable team in an educational institution. The data were collected by the content analysis of the education management hierarchy structure reflected on 33 homepages of educational institutions; content analysis of 62 students' teaching practice assignments on the education management hierarchy structure; 12 interviews with school administration on the state of the art of sustainable team. Research sample was 107 educational institutions: 23 primary schools, 66 secondary schools, and 18 state gymnasiums with broad geographical representation – the schools in the capital, cities, small towns, and countryside.

Sustainable team achieves institutional goals and cultivates a culture where collaboration, appreciation, and teamwork are valued. According to the data of the study, there is a misunderstanding of the notion of a sustainable team in educational institutions in Latvia. There is also a lack of evidence of students as meaningful players in how the education management hierarchy is seen and interpreted which slows down the implementation of the sustainability initiatives.

Keywords: *education management, students, sustainable team, teamwork, team performance*

Introduction

Education is a transformational tool in every society and should be held in high esteem. It is the acquisition of knowledge and skills required to sustain individual, groups, and organisational advancement at all levels

and spheres of life. Effective management of human, material, time and financial resources is highly crucial of the development of sustainability in an educational institution.

International Commission on the Futures of Education (2021) highlights the importance of sustainability for future education, especially in the field of education management, which includes teamwork, collaboration and culture of organisation. Among the priorities, there is mentioned steering education opportunities towards inclusion and sustainability. It also states that: "Educational institutions should unite collective endeavours and provide the knowledge, science, and innovative approach to shape sustainable futures for all anchored in social, economic, and environmental justice and prepare their teams for environmental, technological, and social changes on the horizon" (International Commission on the Futures of Education, 2021, p. 15).

In 2016, the National Centre for Education of the Republic of Latvia (Skola 2030, n. d.) started a project "Competence Approach to Curriculum" (Project School2030) to introduce a competence-oriented curriculum in all Latvian educational institutions from pre-school to general secondary school with the aim of promoting the acquisition of necessary skills for living in the 21st century. Project School2030 highlights the importance of team in educational institutions. The implementation of Project School2030 goals is related to significant changes in the structure of school and pre-school curriculum, the system of evaluation of learning outcomes, teacher education, and as a result, it affects the management of educational institutions. According to Project School2030, the elements of effective institutional performance include *education management support for development, a culture of cognition and innovation, teamwork and mutual learning,* and *a vision of student involvement in the organisational process.* Project School2030 promotes partnership and encourages students to be involved in school management process.

In the context of Project School2030, teamwork and sustainable development principles have recently become priorities and ambitious ideologies in education. Combining social, economic, and environmental initiatives in educational institutions is a complex process that results in a completely new vision of educational institutions that is student-centred. This necessitates the development of appropriate factors in order to identify a management structure within the organisation that encourages and supports the sustainability initiative. The importance of factors such as *involving every member of the organisation in decision-making; maintaining and improving the founders' idea and vision; creating a sense of integrity; the greater the number of members of the organisation who identify with the organisation's values, the stronger the feeling of its members' identity; encouraging members to participate*

in the organisation's activity for developing a culture of sustainability determine sustainability.

Furthermore, the Regulations of the Cabinet of Ministers No. 618 on the procedure of the accreditation of educational institutions note the criterion "Support and cooperation" for evaluating the professional activity of the principal of an educational institution and point at the importance of the requirement that learners are involved in achieving the institution's priorities (Ministru kabinets, 2020). According to State Education Quality Service (Izglītības kvalitātes valsts dienests, 2021a), for a high evaluation of an educational institution, the principal should have a vision of what type of graduate this educational institution wants to raise and what the learning process should be for such students to grow up. This vision should also be shared with the administration team, teachers, school personnel, students, and their parents. The principal should ensure that learners' personal growth and development are successful throughout the proposed education process, including the civic participation experience available to learners throughout the education management process.

The aim of the research is to explore and define the concept of sustainable team in educational institutions.

Research questions put forward are:

RQ1: How students are seen and perceived in the education management hierarchy of an educational institution;

RQ2: What fosters the development of sustainable team in an educational institution.

Literature review

In the scientific literature, the term of the sustainability of organisation is used as a synonym of sustainable development or organisation's social responsibility – organisation's sustainability is based on economic, environmental and social responsibility aspects (Bagdonienė et. al., 2009). A sustainable organisation is becoming one of the most popular and ambitious concepts because environment and organisational performance are closely related and its long-term success depends on the fact how the organisation is able to integrate human capital into the environment (Seivwright & Unsworth, 2016).

According to Project School2030 context, an educational institution has to implement the harmony between economic, social and environmental pillars, as well, perform effective management of human capital (teamwork) and the following factors of sustainable development in the organisation – management and leadership, culture, intellectual capital, processes, technologies and infrastructure (Seivwright & Unsworth, 2016).

The most effective means is the improvement of organisation's teamwork and reaching for the highest levels of maturity such as to build sustainable team. Sustainable team not only conditions the possibilities for the organisation to create a competitive advantage, but also to gain new competences corresponding to the economic changes.

According to Heller (2012), effective education management includes four factors that have a significant impact on organisational performance for long-term development: effective teamwork – leaders and group work, decision-making together, good team-building methods, and an emphasis on action.

Project School2030 – the initiative of the National Centre for Education of the Republic of Latvia emphasises the value of collaboration in educational institutions. It depicts an educational institution as a learning organisation that supports each student's learning and employs an in-depth learning approach. It operates as a learning organisation that is constantly changing and adapting to new circumstances. It teaches students, teachers, school administration, and other personnel members how to work together and individually achieve their own and common goals.

Jay Martin Hays and Hayo Reinders (2020) introduce sustainable learning and education as an emerging philosophy of learning and teaching based on sustainability principles. The authors stress the significance of systems and ecological thinking, as well as the critical role of self-sufficiency as a means and target in sustainable learning and education. The authors acknowledge the importance of building community: "the more we accept and appreciate our team members, organisations, and societies as important, interdependent, and deserving of a viable future, and the more we engage with them toward positive ends, the more universally accepted the imperative of sustainability will be, and the more likely we will achieve it" (Hays & Reinders, 2020, p. 68).

Also Marco Kools, Louise Stoll, Bert George, and others (2020) admit that the school as a learning organisation is associated with eight dimensions (see Table 1).

OECD (2016) provides an in-depth explanation of the learning organisation within the context of an educational institution. It identifies and operationalizes the characteristics of a school as a learning organisation in an integrated model comprised of seven overarching 'action-oriented' dimensions, as shown in Table 1.

Both sources put "learning of all students" in the first place. OECD (2016) is more specific in defining the dimensions by corresponding action verbs, whereas Kools et al. (2020) focus on the expected outcomes, but they also add one more dimension "partners contributing to school vision" which would be essential for the notion of sustainable team in educational institution.

Table 1. The characteristics of the school as learning organisation (OECD, 2016; Kools et al., 2020)

The school as learning organisation (OECD, 2016)	The school as learning organisation (Kools et al., 2020)
Developing and sharing a vision centred on the learning of all students	A shared vision centred on the learning of all students
Creating and supporting continuous learning opportunities for all personnel	Partners contributing to school vision
Promoting team learning and collaboration among personnel	Continuous learning opportunities
Establishing a culture of inquiry, innovation and exploration	Team learning and collaboration
Establishing embedded systems for collecting and exchanging knowledge and learning	A culture of enquiry, innovation and exploration
Learning with and from the external environment and larger learning system	Systems for collecting and exchanging knowledge and learning
Modelling and growing learning leadership	Learning with and from the external environment
	Modelling learning leadership

According to Project School2030 (Skola2030, 2020), the effective institutional performance consists of four elements, where students also play essential role:

1. A vision of student involvement in the learning.

All parties involved share the school's vision of engaging in learning that delivers and improves performance for each student. The school's vision inspires and motivates students by covering a wide range of outcomes – both cognitive and socially emotional. The vision is the result of a collaborative process involving all school personnel. The school, teachers, students, and others who have an impact on students' learning on a daily basis have clear, specific, realistic, time-bound, and measurable goals for each student's growth.

2. Teamwork and mutual learning.

Teachers plan curriculum on a daily basis at the school level, within curriculum, across disciplines, within a group of classes, considering curriculum development by age, integrating transversal skills and value-based habits into the learning process, and in other ways as needed. All school personnel participate in professional development aimed at achieving school goals; it includes opportunities for each participant to evaluate their work and receive feedback; it has time and other resources; and the school culture promotes and supports all involved one's professional learning.

3. A culture of cognition and innovation.

School personnel desire and dare to innovate in their work; problems and errors are viewed as learning opportunities. Students are actively engaged in conducting research on the school as an organisation. The nature of change is understood by everyone at school. Setting goals at school is preceded by an assessment of the current situation; the school's development plan is based on available data, evidence, and self-assessment, and it is regularly updated.

4. Education management support for development.

School administration works as a team to achieve goals, motivate school personnel, and plan the learning of all school personnel. Leaders of educational institutions are change agents; they promote and develop a culture of learning, change, and innovation at their institutions. The principle's develops the culture of the school organisation and creates conditions for professional dialogue, cooperation, and the exchange of experience; ensures that the organisation's activities are consistent with its vision, goals, and values. The principal sets an example by learning, sharing, and delegating responsibilities, as well as developing management skills and the ability of personnel, including students, to accept responsibility (Skola2030, 2020).

Ligita Šalkauskienė (2017) admits that by combining the factors of teamwork *(management, leadership, decision-making, role change, coherence of organisational behavioural models, etc.)* and sustainable organisation *(management and leadership, culture and intellectual capital, etc.)*, a sustainable team can be created in the organisation. Furthermore, the practice of sustainable activity and the formation of a sustainable team benefits the organisation.

The establishment of the organisational structure of an educational institution is determined by several documents in Latvia, such as Education Law (Saeima, 1998); Recommendations of the Cabinet of Ministers No. 2, Procedure for the Establishment of the Structure of a Public Administration (Cabinet of Ministers, 2010); Institution Model Law of the General Education Institution of the Ministry of Education and Science (State Service of Education Quality, 2021b) and Regulations of the State Service for the Quality of Education (State Service for the Quality of Education, 2021a). Additionally, the principal has the authority to hire personnel to assist in the achievement of the institution's goals as project managers, support team members, and interest education teachers. According to Project School2030, students should be placed in the centre of the organisational structure of an educational institution.

According to the research of Tamika Kampini (2018), organisational structure has an effect on employee performance, as well as, the results of the study show that building a good organisational structure is important

for employees to perform well in their work and it helps in motivating employees' performance. Also, Sylvia Maduenyi et al. (2015) admit that the performance of organisation largely depends on the structure of the organisation, as well as, authors indicate that there is a relationship between the specialisation of work process and labour productivity, and organisational structure affects the behaviour of employees in the organisation.

When analysing the development of a sustainable organisation, the concept of a sustainable team must be emphasised. Mycolas Dromantas (2008) and David O. Baker et. al. (2006) have examined the aspects of the sustainable team in the context of sustainable development and teamwork (see Table 2).

Table 2. The comparison between the teamwork and sustainable team. (Baker et al., 2006; Dromantas, 2008)

The characteristics of the teamwork (Baker et al., 2006)	The characteristics of the sustainable team (Dromantas, 2008)
Action (defines the activeness, achievements, search for solutions and development of the team)	Potency (competence, construct of personal effectiveness)
Structure (organisation, methods, process, strategy, tactics and discipline)	Meaningfulness (understanding the meaningfulness of the team)
People (communication, motivation, empathy, social contact)	Autonomy (an extent to which members of the team experience and understand freedom and independence of their actions at work)
Ideas (creativity, ideas)	Influence (members of the team seek, share and understand feedback received from other members of the organisation)

It can be concluded that there can be distinguished several types of the teams or several development stages for the team to reach the status of a sustainable team in an educational institution (see Figure 1):

1. The first stage is a team "a group of people who are interdependent in terms of information, resources, knowledge, and skills and who seek to combine their efforts to achieve a common goal" (Thompson, 2008: 34). Usually it is a small group of people working together, and they stick together due to common interests.

2. The second stage – administration team (Boles, 1975) is administering the management of an educational institution. The main functions of the administration team are the following: the formation of plans, policies, and procedures; setting up goals and objectives; enforcing rules and regulations, etc. The nature of the administration team is bureaucratic. It is a formal and appointed team of people responsible for forecasting,

planning, organising and decision-making functions at the highest level of the organisation.

3. The collective team refers to small organisations which due to a small number of persons are considered as one group or whole. It can be also called a family team, but not involving the features of nepotism.

4. The next stage – effective team is related to the development within the educational organisation (Don & Raman, 2019). The team's combination of skills, experience, and judgement allows it to outperform a group of individuals. Individuals who are effective at work engagement and teamwork have traits such as high self-esteem and a desire to plan and review their work, as well as develop their skills to be effective team members.

5. Finally, sustainable teams achieve corporate goals, progress in a timely manner, and cultivate an ethics and culture in which collaboration, admiration, and teamwork are developed and valued. Sustainable team management activities are centred on adding value to organisations. The sustainable team is linked to the core management strategy, creating value for both internal and external parties; therefore, cross-departmental bridges must be built (United Nations General Assembly, 2015). Well-being, internal effectiveness, and organisational performance are all related to long-term team' performance (Warr & Nielsen, 2018).

Figure 1. Stages of the development of sustainable team management (created by authors)

According to the literature summary and conclusion, six interrelated elements that have an impact on the development of a sustainable team in an educational institution can be identified. They are *actively participating as an equal team member, strong leadership in the workplace, team-building and developing sustainable activities, supporting a culture of transparency and integrity, the three Ps of the team members – personality, performance, and potential, and work – life balance* (Warr & Nielsen, 2018).

Methodology

Due to the need of exploring theoretical notions and defining the concept "sustainable team", the research was organized using grounded theory method research design. The authors of grounded theory method, Barney Glaser and Anselm Strauss (1967) originally introduced it to facilitate

theory development that consisted of obtaining and analysing data. Tony Bryant and Kathy Charmaz (2007, p. 1) describe it as a method containing "a systematic, inductive, and comparative approach for conducting inquiry for the purpose of constructing theory".

It is considered one of the most generally applied and popular qualitative research methods and is used in areas that have not been widely researched, or to acquire a new insight in previously researched areas (Mārtinsone, 2011). In order to develop a theory, the researcher should start by defining research questions, as well as selecting participants, using theoretical sampling, followed by data collection, data analysis and validation stages. This is what the present research article also reveals as it deals with one aspect of a larger scale and long-term grounded theory research. The theoretical saturation stage when theoretical saturation is defined, meaning that in the development of theory no new categories, concepts, dimensions or incidents arise and finally discovery and conclusion stage when the findings and restrictions of the research are demonstrated are not discussed in this article.

The data were collected by performing the content analysis of the education management hierarchy structure reflected on the homepages of educational institutions in Latvia ($n = 33$), followed by the content analysis of students' teaching practice assignments on the education management hierarchy structure ($n = 62$). Finally, the interviews with school administration on the state of the art of sustainable team in educational institutions ($n = 12$ principals) were carried out.

Research sample was 107 educational institutions: 23 primary schools, 66 secondary schools, and 18 state gymnasiums. 12 school principals represented four primary schools, four secondary schools, and four state gymnasiums, as well as geographically they were from the schools in the capital, cities, small towns, and countryside.

Results and Discussion

The content analysis of the education management hierarchy structures reflected on the homepages of educational institutions and students' teaching practice assignments was performed to search for the answer on the research question: how students are seen and perceived in the education management hierarchy of an educational institution in Latvia. 95 sources of the education management hierarchy structure were examined, including 33 structures from the homepages of Latvian educational institutions and 62 from students' teaching practice assignments on the education management hierarchy structure. According to Figure 2, the data of the analysis of the education management hierarchy structure show that 38 percent

(36 educational institutions) mentioned the student council in the education management hierarchy structure, and 27 percent (26 educational institutions) did not include students at all. Only 1% (10 educational institutions) have a student-centred education management structure, and both student councils and students are mentioned in their education management hierarchy structure.

According to the data, less than a quarter of educational institutions involve students in teamwork, indicating a lack of students' as meaningful players in how the education management hierarchy is perceived and interpreted in the context of Project School2030.
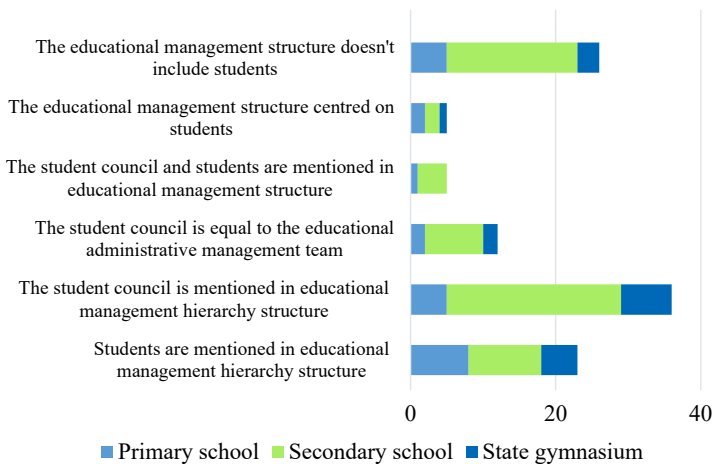
Figure 2. Data of the analysis of education management hierarchy structure

Twelve interviews with educational institution principals were conducted to analyse the policy of school regarding student involvement in teamwork. According to the data collected, the majority of principals had meetings with students both remotely and in person, and they collaborated with the student council. Principals acknowledged that the student council represented students' interests at educational institutions, and that individual consultations aided in involving students in education management processes. Furthermore, 60 percent (8 educational institutions) acknowledged the importance of teamwork and mutual trust, and the majority of schools involved students in the development of project planning. In addition, school administration conducted annual surveys on the improvement of school management.

In order to find out what fostered sustainable team in educational institution, the principals were asked, *"What is the evidence that your school is performing as a team?"* 25% (three educational institutions) named their teams

as families, it should be noted that the principals represented small primary and secondary schools, where the teaching personnel did not exceed 20 teachers. 41% (five educational institutions) emphasized that they promoted teamwork and cooperation, organised teacher-building events, cooperated with supervisors (especially during Covid-19), and organised parent and teacher events. 16% (two educational institutions) admitted that they did not pay enough attention to teamwork cooperation, which was influenced by the frequent change of teachers, Covid-19 pandemic and the workload of teachers. 16% (two educational institutions) noted that the school personnel had not changed for several years, but in connection with what had been happening in the world in the last two years, faced a shortage of teachers. They were actively attracting new teachers and colleagues to join their team, also, with the support of the local government offered bonuses and benefits to teachers for demonstrated initiatives, like providing additional vacation days.

Only eight of the twelve educational institutions had active student councils, and five (three secondary schools and two gymnasiums) had two student councils: primary school student council (from Forms 7 to 9) and secondary school student council (from Forms 10 to 12).

According to the findings of the interviews, the majority of educational institution principals agreed that a student-centred participatory approach was related to teacher' performance in terms of personal gains by teachers and students ranging from increased self-esteem to the ability to work in teams and develop leadership skills.

The majority of principals admitted that primary school student councils were more motivated to participate in education management and learning processes, whereas secondary school students were more focused on their studies and exams. Furthermore, principals emphasised that students lacked knowledge and experience in managerial processes, so it could be very useful to create guidelines to guide students for a better understanding of their contribution and involvement in education processes. According to the findings of the interviews, principals mentioned the areas of school management that students could influence, such as *"organisational climate and environment, teamwork with teachers, student academic performance, organisational performance, promoting the school's name on a local and national level, implementing and participating in school projects and events, as well as taking the initiative and participating in youth and NGO conferences and forums".*

According to the findings of the interviews, students were mostly involved in "project and lesson planning with teachers", and only 42 percent (five educational institutions) focused on *"teamwork culture and organise team-building events for teachers and students, excluding regular school events such as class events, excursions, and visits to cultural events".*

Less than half of the interviewed principals, 42 percent (five educational institutions), continued to focus on *"student well-being and the joy of learning at school",* indicating, *"principals and administration teams do not understand how to develop and maintain sustainable team management". Furthermore, the educational institution lacked "an appropriate environment for the long-term development of their team and organisation".*

What is more, principals admitted that they had *"encountered problems with student involvement; students do not understand how they can help improve education processes at educational institutions".* For a better understanding, they suggested having *"student involvement guidelines,"* which would define the importance of student involvement, as well as areas of education management processes where students could contribute, and describe how cooperation would benefit the administration team, teachers, and students.

According to the findings of interview analysis, 8 percent (one education institution) operated as administrative teams (Figure 1), 50 percent (six educational institutions) operated as a collective team, 34 percent (three educational institutions) functioned as an effective teamwork, and only 16 percent (two educational institutions) understood how to create an environment for a sustainable team in an educational institution.

The educational institutions which operated as a sustainable team in the education management process involved principal, administration team, deputies, support team, as well as students', parents' and school councils. They kept focus on teamwork relations, social activities, intelligence enhancement, emotional intelligence, activities of class teacher-tutor, mentoring, class group as a social group, extra curriculum activities, as well as the programme "Latvian School Bag".

Principals acknowledged that collaboration was critical for successful organisational performance and it was of importance in the establishment of school priorities. *"First, the administration thought about strategic and organisational issues, then they put forward the changes in the short and long term plan, afterwards there was a meeting with the school and students' councils. When they received feedback and discussed this, final decisions we made and development plan was accepted when all parties had given their opinion about it".*

The principals of sustainable team educational institutions had a special strategic plan how to engage students in organisational processes, delegating responsibilities for active student council involvement such as *"every class has a leader who is responsible for class needs and surveys".* The principals had experienced that it helped to plan working day, education process and create the development plan of educational institution.

According to the findings of the interviews, the principal said: *"It is important for us that students feel good they give us direction, and we drive and*

organize it. Students set a goal, optimize their strategy, and learn what they do not know along the way in order to develop comprehensively. Young people can act as a feedback loop".

It is critical to emphasise this when answering the question, *"Without who would your school team not exist?" "What are the requirements for the team to continue operating successfully?".*

Only two principals responded that students and teamwork were important, with the most popular responses being *"teachers, support personnel, school values, municipal support, administration, and the parents' council".*

Principals responded that the most important factors for sustainable team development were *"organisational culture, well-being and welfare of the team, shared responsibilities in the team, strategy for education management, teamwork and cooperation, involving students and parents in decision-making, emotional intelligence, financial support from government and municipality, international cooperation such as Erasmus projects and other grants".* Some principals mentioned skillful conflict resolution and putting students at the centre, but agreeing on the *"limits of power".*

According to the analysis of interviews, the elements that foster the development of sustainable team in an educational institution are principal, administration team, deputies, support team, as well as students', parents' and school councils, also, the focus on teamwork relations, social activities, intelligence enhancement, emotional intelligence, activities of class teacher-tutor, mentoring, class group as a social group, extra curriculum activities, and for effective implementation there should be created a special strategic plan how to engage students in organisational processes.

Conclusions

The notion of a sustainable team in an educational institution is based on such factors as potency, meaningfulness, autonomy and influence. The fundamental element for the evidence of sustainable team is collaborative relationships with students. Involving students as equal decision-makers in teamwork is one of the most important aspects of creating a sustainable team in the educational institution. Whereas, the effective institutional performance can be defined by the following elements: education management support for development, a culture of cognition and innovation, teamwork and mutual learning, and a vision of student involvement in the organisational process. Besides, there are several types of the teams and several development stages for the team to reach the status of a sustainable team in an educational institution such as team, administration team, collective team, effective team and sustainable team.

The development of a sustainable team in an educational institution depends on equally participating active team members, strong leadership in the workplace, team-building and sustainable activities, a culture of transparency and integrity, the three Ps of the team members – personality, performance, and potential, and work – life balance.

Based on preliminary data of a larger scale and long-term grounded theory research, it can be concluded that the structure of the educational institution reflects the involvement of students in the education management process of the educational institution to the greatest extent possible. The analysis of the data shows that 38 percent (36 educational institutions) mention the student council in the education management hierarchy structure, and 27 percent (26 educational institutions) do not include students at all. Only one percent (10 educational institutions) has a student-centred education management structure, and both student council and students are mentioned in their education management hierarchy structure.

It can be concluded that according to the analysed data of the interviews, fewer than a quarter of educational institutions involve students in teamwork, indicating a lack of students' as meaningful players in how the education management hierarchy is perceived and interpreted in the context of Project School2030. In addition, students are not recognised as equal team members of an educational institution that does not meet the needs of students or the Project School2030 vision.

Based on the analysis of interview data, there can be summarized the following criteria that foster the development of a sustainable team in an educational institution, such as sustainable team involves principal, administration team, deputies, support team, as well as students', parents' and school councils, also, keeps focus on teamwork relations, social activities, intelligence enhancement, emotional intelligence, activities of class teacher-tutor, mentoring, class group as a social group, extra curriculum activities, and for effective implementation creates a special strategic plan how to engage students in organisational processes. It should be admitted that is necessary to describe the concept of a sustainable team in an educational institution at the national level, as well as the role of students in it must be defined. In addition, there is no shared understanding of sustainability among the members of the education management teams in educational institutions.

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QUALITY OF EDUCATION IN LATVIAN MUNICIPALITIES AND STATE CITIES – RESULTS OF INTERNATIONAL STUDIES AND STATE EXAMINATIONS

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ABSTRACT

In 2021 a new Law on Administrative Territories and Populated Areas came into force in the Republic of Latvia. To reduce fragmentation, the number of municipalities and State cities was reduced from 119 to 43. There were no changes in 11 local governments, however, other new structures were formed by merging two to eight local governments. On the one hand, these changes are creating new challenges in the education process and institution management, but on the other hand – larger local governments with larger numbers of schools and students opens up new opportunities. One of the opportunity is to make a more accurate assessment of student achievement, which characterizes the performance of a local government's educational institutions. The aim of this article is to show that despite the great differences between local governments (e.g. population differences from 3 to 614 thousand) it is possible to assess the quality of education in local governments by using data from state examinations and international comparative education studies.

Over the last few years Latvia has taken part in IEA (International Association for the Evaluation of Educational Achievement), ICCS (International Civic and Citizenship Education Study), PIRLS (Progress in International Reading Literacy Study), and TIMSS (Trends in International Mathematics and Science Study), as well as in OECD PISA (Programme for International Student Assessment). To obtain the results the data were used from all mentioned studies. This article was supported by European Social Fund project No. 8.3.6.2/17/I/001

Keywords: achievement, state examinations, ICCS, IEA, OECD, PIRLS, PISA, TIMSS

Introduction

OECD has pointed out, that Latvia faces challenges to provide quality education opportunities in all geographic areas of the country (this can be explained by the significant demographic changes, emigration, and urbanization factors) (OECD, 2017). Newly formed municipalities have

opened up new possibilities to assess and improve the quality and equity of education in Latvia.

The main aim of this article is to show, that it is possible to assess the quality of education in newly formed municipalities, based on data obtained from state examinations and international large-scale assessments (ILSA) in education. The usage of ILSA to show the differences in municipalities or regions is not widely used, but some countries where are very large regional differences (e. g. Italy, Spain, Canada, and the United States) share a good example. In these studies links between the local economic situations, employment, regional autonomy in education, and the suitability and administration of schools have been studied (Bratti et al., 2007; Agasisti & Cordero-Ferrera, 2013; Hippe et al., 2018; Daniele, 2021). Similarly, in previous studies, the education systems in the United States (Lee et al., 2011), Canada (Edgerton et al., 2008), and Turkey (Erberber, 2010) have been analysed. This study show how ILSA and state examination data can be used to assess the quality of education in municipalities of Latvia.

Assessing Quality of Education

All students should have a chance to receive a good quality education, regardless of their socio-economic background or other factors (European Commission/EACEA/Eurydice, 2020; Frønes et al., 2020).

Historically quality is associated with industry when an industrially made product had to meet certain quality standards (Scherman & Bosker, 2017). In education the concept of "quality" is more complicated than just meeting the fixed quality standards, as education quality depends on the needs of an always-changing society and processes that are closely related to this change, therefore measuring the quality of education can be quite challenging (Kirsch & Braun, 2020). Quality of education includes a variety of indicators at various levels (Crissien-Borrero et al., 2019; Sulis et al., 2020). Students' academic performance is the main result of various school inputs, and an important aspect of assessing the quality of education (OECD, 2005; Rodríguez et al., 2022). This study is focusing on education quality through the evaluation of student assessment of their academic performance in ILSA and state examinations, keeping in mind the equity aspect and statement that all students should be able to access high-quality education, regardless of their geographical location and background factors.

Within the country, enhancement of the quality of education is important for various reasons e. g. as socioeconomic human capital and development of the economy and welfare (Scherman et al., 2017; Geske et al. 2015; OECD, 2021). Accordingly, that promotes the development of higher socio-economic status (SES). Previous studies have shown that students with higher SES outperform students with lower SES (Sirin, 2005;

OECD, 2013, 2019a, 2022; Marchant & Finch, 2015; Finch & Finch, 2022; Lee et al., 2019; Zhao et al., 2022). Therefore assessment and improvement of the quality of education are important not only for achieving better academic results, but it is also important to promote the overall economy and welfare.

Assessing the quality of education is equally important in the context of equity in education. The OECD has emphasized that one of the main challenges to the quality of education in Latvia is to reduce the differences in the achievement of rural and urban students (OECD, 2016, 2017, 2020). That leads to the question if students in rural areas have equal opportunities to access the same education quality as students from urban areas, keeping in mind that the majority of students are limited in their geographic mobility and the school choice will largely be determined by the location of their family home. Social and academic segregation is a challenge that can be overcome by improving equity in education (OECD, 2019a). Although OECD PISA results show that, with variations, students' performance is related to their SES (OECD, 2019b), in Latvia schools SES has a greater influence on students' achievement than the SES of students' families (Geske et al., 2015; Geske et al., 2020). That should be taken into consideration when taking actions within the school reorganization process that is currently happening within the newly formed municipalities. The newly formed municipalities can make a significant contribution to ensuring equity in education by encouraging evidence-based education policy decisions concerning the reorganization of the school network.

Methodology

To monitor educational outcomes, data from ILSA can be utilized and combined, even with other existing data sources (Strietholt & Scherer, 2018). Merging data from different ILSA and adding other data sources might rise a question – is it legitimate to do so? Can the different tests and other background data be aggregated? It's commonly known, that results may differ from survey to survey. The main reasons why they differ are: different aims; sampling and non-sampling errors that vary across surveys; different item response models that are used (Brown et al., 2007).

In previous studies, Hanushek and Woessmann as well as Brown and Micklewright have proved that combining ILSA with other data sources is legitimate (Hanushek & Woessmann, 2011; OECD, 2015; Brown & Micklewright, 2004). Brown and Micklewright have encouraged combining data by following some simple rules: to look at correlation matrices for the basic results on central tendency and dispersion and to scale the results by assigning the value 500 to the mean and 100 to the standard deviation

(Brown & Micklewright, 2004). As data from various ILSA tests and cycles, as well as other data sources, vary – all data should be recalculated to form a common scale.

The authors of this study have followed the similar methodology, that previously had been used in the related studies in the USA, that have been carried out by Hanushek & Woessmann: to derive a common scale, all data were recalculated to a standard deviation of 100 and a mean of 500 (Hanushek et al., 2012; Hanushek & Woessmann, 2011; Hanushek & Woessmann, 2008; Hanushek et al., 2010).

In this study data from ILSA and from Latvian state examinations were analysed. Particularly data from three IEA (International Association for the Evaluation of Educational Achievement) studies that were conducted in Latvia: PIRLS 2016 (Progress in International Reading Literacy Study); ICCS 2016 (International Civic and Citizenship Education Study); TIMSS 2019 (Trends in International Mathematics and Science Study). And data from PISA 2018 (Program for International Student Assessment) – organized by the OECD.

In addition to ILSA, data from 2018, 2019, and 2020 Latvian state examinations were used (state examination data are available to the public on the website of the State Education Content Center). Data from the year 2021 were not included in the analysis regarding the Covid-19 pandemic and its great impact on the learning process, which might affect the exam results.

Data from three compulsory state exams were selected: the Math exam, the foreign language exam, and the Latvian language exam. In a foreign language exam, the language in which students must take the exam is not specified, however, the majority of high school graduates (87–90%) have chosen English, therefore the English as a foreign language exam was included in the data analysis. The Latvian language exam is compulsory for all high school graduates, regardless of the language of instruction.

To exclude potentially inadequate data, only schools whose language of instruction was Latvian were selected. Students who took their state exams at the University of Latvia, Daugavpils University, and the University of Liepaja were excluded from the analysis. All analysed state examinations are centralized examinations. This means that students took the exam in their school, but their assessments were made in Riga without the assessors knowing the students' names and their schools. The total number of students and schools in each of the data sources is summarized in Table 1.

On 1st July 2021 a new Law on Administrative Territories and Populated Areas came into force in the Republic of Latvia. As a result, the total number of municipalities decreased from 119 to 43. There were no changes in 11 local governments, however, other new structures were formed

by merging two to eight local governments. 11 previous municipalities remained unchanged and the rest were reformed. During the data analysis, each school that was included in the study had to be assigned to the new territorial division.

As shown in Table 1, the IEA studies did not cover all municipalities. That can be explained by the relatively smaller number of schools in the IEA studies sample and the small number of schools and students in particular municipalities (e. g. in Varakļāni and Ventspils municipalities). Nevertheless, the total school coverage in municipalities is considered sufficient.

Table 1. Number of Students and Schools Included in the Data Analysis in Separate Studies and Exams

Study/Exam	Year	Age/Grade	Students	Schools	Municipalities
PIRLS	2016	Grade 4	4157	150	40
ICCS	2016	Grade 8	3224	147	38
PISA	2018	15 years old	5985	308	43
TIMSS	2019	Grade 4	4481	154	39
SE Math	2018	Grade 12	13899	409	43
SE English	2018	Grade 12	12544	407	43
SE Latvian	2018	Grade 12	10555	292	43
SE Math	2019	Grade 12	14477	397	43
SE English	2019	Grade 12	13017	393	43
SE Latvian	2019	Grade 12	11053	282	43
SE Math	2020	Grade 12	14139	383	43
SE English	2020	Grade 12	12343	377	43
SE Latvian	2020	Grade 12	11137	274	43

To combine the data, students' achievements had been recalculated. In the original databases of state exams, students' results are given as a percentage of the maximum possible. For each state exam, the results were recalculated in points with an average value of 500 and a standard deviation of 100. In the ILSA studies data, there are given five plausible values for IEA studies and 10 plausible values for OECD PISA 2018, which also were recalculated to mean values of 500 with a standard deviation of 100.

In the OECD PISA 2018 study, three areas were examined: reading, mathematics, and science. The correlations of student achievement at the regional level ($n = 43$) were strong (0.89, 0.91 and 0.95). These results were combined to prevent the artificially increased impact of PISA 2018

results. The same procedure was done with the TIMSS 2019 results in mathematics and science (r = 0.93). The correlations between all four ILSA studies are shown in Table 2.

Table 2. Correlation of ILSA Students' Achievements at the Regional Level (n = 43)

	TIMSS 2019	PIRLS 2016	ICCS 2016	PISA 2018
TIMSS 2019	1	0.31	0.43	0.38
PIRLS 2016	0.31	1	0.11	0.33
ICCS 2016	0.43	0.11	1	0.48
PISA 2018	0.38	0.33	0.48	1

Compared to other studies, the lowest correlations are in PIRLS 2016. This can be explained by the difference in participants' age groups. The existing correlations are strong enough to combine the results into a single scale with Cronbach's alpha 0.67.

Table 3 shows the correlations between the results of the national exams. Correlation values range from 0.01 (for Mathematics and Latvian language exams in 2018) to 0.87 (for English language exams in 2019 and 2020). Table 3 shows that there are relatively high correlations for single-subject exams in three consecutive years – the highest correlations are in English language exams, but the lowest correlations are in Latvian language exams. The correlations between Mathematics exams and English language and Latvian language exams are significantly weaker. Nevertheless, the correlations are strong enough to combine the results into a single scale with Cronbach's alpha 0.90.

In each ILSA study, the SES of students' families was determined. Students' SES is an important indicator for assessing student achievement at the individual, school, county, and national levels. Overall, higher student SES is associated with higher student achievement. SES measurements in ILSA studies slightly differ. Eighth-grade student questionnaires include more complicated questions about their family than fourth-grade student questionnaires, however, fourth-grade students have an additional parent questionnaire that helps to gather information about family aspects, that form the family's SES. For SES analysis, the following indicators were used: in TIMSS and PIRLS – home resources for learning; in ICCS – National Index of Socio-Economic Background, in PISA – Index of Economic, Social and Cultural Status. All of these indicators include information on the parents' education, work responsibilities, the number of books at home, and the presence of other subjects or services in the family.

Table 3. Cross-correlation at the Municipality Level of the Results from State Centralized Examinations ($n = 3$)

	SE English 2018	SE English 2019	SE English 2020	SE Latvian 2018	SE Latvian 2019	SE Latvian 2020	SE Math 2018	SE Math 2019	SE Math 2020
SE English 2018	1	0.85	0.84	0.51	0.66	0.77	0.32	0.30	0.36
SE English 2019	0.85	1	0.87	0.47	0.78	0.75	0.22	0.44	0.26
SE English 2020	0.84	0.87	1	0.53	0.68	0.87	0.23	0.33	0.32
SE Latvian 2018	0.51	0.47	0.53	1	0.61	0.62	0.01	0.05	0.16
SE Latvian 2019	0.66	0.78	0.68	0.61	1	0.75	0.26	0.42	0.28
SE Latvian 2020	0.77	0.75	0.87	0.62	0.75	1	0.48	0.53	0.64
SE Math 2018	0.32	0.22	0.23	0.01	0.26	0.48	1	0.69	0.83
SE Math 2019	0.30	0.44	0.33	0.05	0.42	0.53	0.69	1	0.79
SE Math 2020	0.36	0.26	0.32	0.16	0.28	0.64	0.83	0.79	1

To suit the purpose of the analysis, these indicators were recalculated to have mean values of 10 and a standard deviation of 2. Even though each of the SES indicators was obtained in a different year, different class, and with a slightly different method, their correlations at the county level are very strong, from 0.52 (ICCS and PIRLS) to 0.78 (TIMSS and PIRLS). These indicators can be compiled in a unified scale that characterizes each region of Latvia (Cronbach's alpha 0.89). In state examinations, student surveys are not used, but the statistics obtained by ILSAS or some statistical data on the economic situation of the counties can be applied.

As state examinations do not provide the student surveys, ILSA studies surveys or statistics data on countries' economic situation can be used to gain the information needed to describe the students' SES. As the new municipalities were established on July 1, 2021, limited sources

for data analysis are available. To describe the economic situation of the municipalities, the authors chose data on the projected amount of personal income tax per person per year in 2022 in each region of Latvia. These data are published on the website of The Latvian Association of Local and Regional Governments (https://www.lps.lv/lv). Personal income tax (PIT) is directly linked to wage, which, accordingly is linked with a person's education and workplace, therefore PIT can be considered a good indicator of a person's SES. For the data analysis, these data were also recalculated to mean 10 and standard deviation 2.

Results and Discussion

In Table 4 the average achievements of students in Latvian municipalities and their socio-economic status are shown.

Table 4. Students' Achievements and Socio-economic Status in Latvian Municipalities

Municipality	Achieve-ment ILSAS (points)	Achieve-ment SE (points)	Achieve-ment Total (points)	SES ILSAS (points)	SES PIT (points)
Ādažu Municipality	520	548	534	10.7	14.6
Aizkraukles Municipality	510	492	502	9.1	9.6
Alūksnes municipality	482	518	500	9.2	8.4
Augšdaugavas Municipality	479	487	482	8.1	7.4
Balvu Municipality	469	500	482	9.2	8.0
Bauskas Municipality	491	502	496	9.4	9.6
Cēsu Municipality	501	494	498	10.0	9.9
Daugavpils	495	469	484	9.8	8.2
Dienvidkurzemes Municipality	463	483	472	8.8	9.0
Dobeles Municipality	466	498	480	9.1	10.1
Gulbenes Municipality	473	490	481	9.1	9.0
Jēkabpils Municipality	478	508	491	9.2	8.8
Jelgava	485	496	489	9.8	10.6

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Municipality	Achievement ILSAS (points)	Achievement SE (points)	Achievement Total (points)	SES ILSAS (points)	SES PIT (points)
Jelgavas Municipality	467	459	464	9.4	10.4
Jūrmala	499	497	498	10.3	12.9
Krāslavas Municipality	451	469	460	8.9	7.1
Kuldīgas Municipality	483	486	484	9.8	9.0
Ķekavas Municipality	510	543	524	10.4	13.6
Liepāja	480	485	482	9.7	9.4
Limbažu Municipality	474	509	492	9.1	9.4
Līvānu Municipality	482	510	496	9.4	8.2
Ludzas Municipality	466	467	466	9.3	7.7
Madonas Municipality	477	505	489	9.4	8.8
Mārupes Municipality	516	549	531	10.9	15.2
Ogres Municipality	509	487	500	10.4	11.5
Olaines Municipality	515	501	509	10.0	11.5
Preiļu Municipality	485	500	491	9.3	7.9
Rēzekne	504	478	493	10.2	8.8
Rēzeknes Municipality	415	490	447	8.4	7.5
Rīga	519	513	516	10.6	12.7
Ropažu Municipality	514	506	510	10.4	13.8
Salaspils Municipality	495	532	513	10.0	11.8
Saldus Municipality	496	486	492	9.3	9.3

Continued from previous page

Municipality	Achievement ILSAS (points)	Achievement SE (points)	Achievement Total (points)	SES ILSAS (points)	SES PIT (points)
Saulkrastu Municipality	486	517	499	10.2	12.0
Siguldas Municipality	499	549	520	9.7	11.9
Smiltenes Municipality	509	474	494	9.6	9.3
Talsu Municipality	497	507	501	9.5	8.9
Tukuma Municipality	471	482	476	9.4	9.6
Valkas Municipality	448	539	494	8.2	10.1
Valmieras Municipality	479	515	495	9.2	10.4
Varakļānu Municipality	471	512	496	9.6	8.0
Ventspils	486	505	494	9.9	10.8
Ventspils Municipality	446	531	497	8.4	9.3

Scatter plot with trend line: $y = 27{,}049x + 227{,}16$, $R^2 = 0{,}6321$. X-axis: ILSAS SES (points), Y-axis: ILSAS achievements (points).

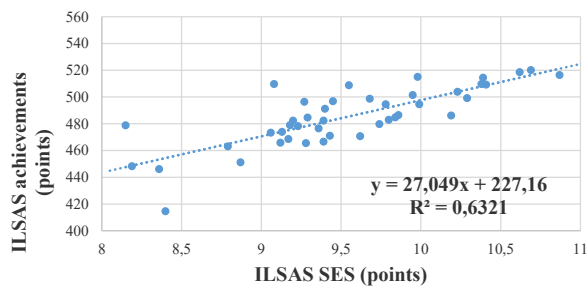**Figure 1.** Relationship Between Student Achievement in ILSA Studies and Socio-economic Status in Latvian Municipalities in Joint Scales

Figure 1 shows the relationship between these values. The relationship between student achievement and SES ($R^2 = 0.63$) in Latvian municipalities confirms that the data aggregation method used in this study is legitimate and the result is in accordance with many previous studies on the

relationship between achievement and SES (e. g. Daniele, 2021; Edgerton, et al., 2008). Accordingly, many conclusions can be made. Firstly, when evaluating the education systems of the municipalities, students (population) SES must be taken into account. It is quite clear that as for the average student achievement Augšdaugava municipality cannot compete with, e. g., Ādaži municipality. Secondly, it is possible to distinguish the municipalities where the average student achievement is higher and lower than the average SES. Although the average achievements of students in the Augšdaugava municipality are not the highest, they should be considered very high. In the municipality with the lowest SES, students' achievements are close to the average level of all municipalities.

To validate the obtained results, it is recommended to compare them with other measurements. In Latvia, it is possible to use the data of centralized state examinations and compare them with ILSA study data. It should be taken into consideration that assessments are made for different student age groups. In IEA PIRLS and IEA TIMSS studies the average student age is around 11 years, in IEA ICCS and OECD PISA – 16 and 17 years, but the state examinations – are 19 years.

The highest correlation of the ILSA scale is with the English language examination results – $r = 0.31$. The overall correlation of the ILSA scale with the results of the state examinations is 0.22. This correlation is relatively weak, but still sufficient to form a scale with four ILSA measurements and one combined state examination measurement (Cronbach's alpha 0.67). The SES measurements obtained from ILSA and PIT have a relatively strong correlation with each other ($r = 0.74$). Their corresponding correlations with the ILSA scale are $r = 0.80$ and $r = 0.23$, as well as with the state examination scale – $r = 0.63$ and $r = 0.59$. Therefore, it can be concluded that PIT data can be used to assess students' achievements in municipalities.

Conclusions

The study proved that both ILSA study results and state examination results can be used to assess the quality of education in Latvia's municipalities. In this assessment, it is important to take into consideration the SES of the population. The data from student surveys in ILSA studies as well as the information from the personal income tax (in the case of state examination) case can be used to obtain the SES measurements.

As the study used the data from PIT prognosis, a more accurate assessment could be made by using the actual data. The research was focused on the presentation of problems and challenges in the newly formed municipalities of Latvia, not on the assessment of the quality of education in the previous municipalities. The comparison obtained in this study, together

with the analysis of the possibilities of each municipality, will allow the municipal education policy-makers to manage the further improvement of the quality and equity of education in each municipality of Latvia.

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SOME ASPECTS OF TEACHING LATVIAN GRAMMAR AT SCHOOL

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ABSTRACT

The Latvian language as a subject has been a taught language since the 1st grade till 12th grade in both minority schools and schools, where the Latvian language is the language of instruction. In recent years the country has also been implementing the education reform within the framework of which the content and its acquisition methodology has been improved, but the students' level of the Latvian language as state language skills is declining in various aspects.

The topicality of the problem to be researched stems from the results obtained by analyzing the scientific research implemented in the country (2007–2021) and other research on language competence of basic and secondary education students.

The aim of the research is to analyze the content and methodology of grammar teaching in basic school and in secondary school for students' language competence.

The methodology of the study is based on linguistics, linguistic didactics, cognitivism and sociocultural theories. The empirical data have been obtained by analyzing the Latvian language learning process and the quality of the essays (content analysis of 409 essays of the 12th grade secondary school students in School Year 2018/2019 according to the previously developed criteria based on theories).

The results of the research show that students learn the grammar rules mainly formally, without linking them to a specific communicative purpose. More attention should be paid to students' work with authentic texts, pupils' own texts as well as study texts used for the acquisition of the content of other subjects. In the didactics of the Latvian language more attention should be paid to the students' sense of language as the ability to perceive, emotionally recognize and evaluate the use of language.

The significance of the results lies in the aspect that they reveal the real situation and enable us to develop recommendations for the improvement of the Latvian language learning process.

Keywords: *grammar content, language competence, linguistic attitude, sense of language, text-forming process*

Introduction

The language, in which the thought is materialized, is one of the means by which we can judge the person's level of thinking, their level of knowledge, the social environment in which they live, their attitude towards themselves and society as a whole, and their language culture.

Even though the today's processes of globalization and internationalization require a good knowledge of English or other European and world languages, no less important is the issue of the competence of the particular state language. In Latvia, it is the Latvian language that, in compliance with the Official Language Law, has to be known and used by employees of state and municipal institutions, employees belonging to the courts and judicial system, employees of state and municipal companies, as well as employees of companies in which the largest share of the capital belongs to the state or municipality to the extent necessary for the performance of professional and official duties (Section 6 of the Official Language Law).

Even though the country is undergoing an extensive education reform, within the framework of which the content and its acquisition methodology are being improved, the level of students' Latvian language skills in various aspects is declining every year. There are both objective and subjective reasons for this, but it does not discharge them from liability to learn Latvian at school at least at an optimum level, so that regardless of the students' ethnicity and place of residence, they could perceive the language as a sign system, make reasoned judgments with the help of the Latvian language.

The topicality of the problem to be researched stems from the results obtained by analyzing the scientific research implemented in the country (2007–2021) and other research on language competence of basic and secondary education.

The aim of the research is to analyze the content and methodology of grammar teaching in basic school and secondary school for students' language competence.

Methodology

The research methodology is based on the linguistics, linguistic didactics (Martena, Laiveniece, Šalme 2020; Laiveniece, 2003; Daszkiewicz, Wenzel, Kusiak-Pisowacka, 2019), cognitivism and sociocultural theories (Ralph, Stevs, 2019; Celce-Murcia, Olshtain, 2000).

The empirical data have been obtained by analyzing the Latvian language learning process during 2018–2021 (70 full-time and distance learning lessons) and the quality of students' essays (content analysis of 409 essays of

12th grade secondary school students in School Year 2018/2019 according to the previously developed criteria based on theories). The balanced corpus of modern Latvian texts has been used for this purpose, in which the above-mentioned texts of secondary school students' essays have been digitized.

In order to ensure higher reliability of data, regional dispersion, differences in terms of educational programs and social status of secondary education institutions have been taken into account (essays of students at secondary schools and gymnasiums of Latvian language of instruction and minority languages in Riga, Kurzeme and Latgale Regions have been selected). The original texts include analyses of the content in a broader context if the units found in the corpus of the language text do not reflect accurately the relationship of the statements to the research problem.

Descriptive statistical methods have been used in the analysis of the data obtained in the study. The obtained data are ranked and expressed as a percentage depending on the number of obtained data and interpreted in relation to the purpose of the study.

Results

Grammar competence as part of language competence

The Latvian language is not only a school subject but also a means of expressing one's thoughts, communication and the exploration of the world, the accumulation and transfer of cultural experience, the expression of emotions as well as a means of every person's self-actualization. The language is a means of different subject acquisition, too. This means that it is important to learn the language system, grammar rules for oral and written speech at school. Without grammar there is no language, it is as simple as that. It is not possible to use the language at all without the acquisition of language competence – the words in sentences and sentences in the text are arranged based on the grammar of the Latvian language, and children do so from the moment they start speaking (Laiveniece, Lauze 2021).

Grammar is a branch of linguistics that studies the grammatical system of a language (structure of words and sentences, word forms, their functions and composition, grammatical categories, types and techniques of word formation, structure and types of word collocations, sentences and texts) (Explanatory Dictionary of Basic Linguistic Terms, 2007).

Grammar competence is an ability to recognise and produce grammatical structures of the language and use them effectively in communication (Chomsky, 1965).

We understand the acquisition of grammar competence as a linguistically, psychologically and methodically organized system, in which there

is a unity of speech and language as a means. It is one of the individual's intellectual abilities, characterized by a conscious or intuitive knowledge of the language system, in order to form grammatically and semantically correct expressions and implement a specific language function in a meaningful text.

Language competence is not an innate ability. It is formed when a person interacts with the social environment and acquires specific knowledge about the world and the language system in their mutual relationship. Language competence is also closely related to sociocultural competence, as the grammar used in the text is a means of expressing a specific context characteristic to a particular societal culture (Ralph, Steve, 2019; Daszkiewicz, Wenzel, Kusiak-Pisowacka, 2019; Mynbayeva, Shahanova, Zhanaikhan, 2015; Celce-Murcia, Olshtain, 2000; Martena, Laiveniece, Šalme, 2021).

Who is a competent language user?

People mainly think, speak and write not in separate sentences, but in full purposefully created sequential series of sentences that form a narrower or wider wholeness – the text.

The individual's language competence can be judged on the basis of their knowledge and skills to adapt the text to the topic, to comply with the conditions of text composition, to ensure a coherent whole of sentences, their sets or contextual connections, to apply the language style to the topic presentation and communicative task, to respect the principle of completeness of the text, as well as to observe in practice the norms of orthoepy or orthography and punctuation (Martena, Laiveniece, Šalme, 2021).

One of the most important issues is the syntax of the text, which includes in itself the structure of sentences and texts, the use of punctuation or certain graphic signs – punctuation marks to separate grammatical or conceptual units of expression in writings. It helps the writer to express and the listener or reader to perceive the content of the text, the writer's beliefs and attitudes towards the facts, events or problem they are writing about.

However, it should be noted, that the above mentioned can be seen by studying the punctuation used in the text as a whole, because we no longer use individual sentences in the text, but related succession of statements. Each statement is used in a specific context or situation (Lokmane, 2013).

Looking at the punctuation both at the end of the sentence and in the middle of the sentence, it is possible to judge the author's knowledge of the chosen problem, their opinion, the ability to convince how they can control their thinking during the writing process, to structure the text, not to deviate from the topic and other issues.

A proficient user of the Latvian language is considered to be an individual with a good, reasoned judgment, a wide, diverse and accurately used vocabulary, orthography as in the particular language accepted level of spelling system acquisition (Martena, 2021).

Latvian orthography skills are characterized by: spelling of short and long vowels, diphthongs in words and word forms, correct use of consonants in the word root, endings and word forms, use of prefixes, suffixes in words and word forms, spelling of compound words, spelling of words together and separately, spelling of proper nouns and compound nouns, spelling of foreign words, word division for transfer to a new line, abbreviation of words.

The writer's spelling skills can only be judged more objectively if the spelling of words and word forms is studied in the text, because a word or word form, similar to punctuation, is used depending on the situation. Whether, for example, words are written together or separately, or whether a word is perceived as a generic name, proper name, or compound, how the word can best be abbreviated so that the reader could perceive the author's idea, what consonant or vowel should be written at the root or end of the word etc., can only be determined in a broader context.

Level of students' grammatical competence

Based on theories (Martena, Laiveniece, Šalme 2020; Laiveniece, 2003; Daszkiewicz, Wenzel, Kusiak-Pisowacka, 2019), the most important criteria that is used in the study to determine students' grammar competence is as follows:
- relevance of the text to the topic,
- text composition (the proportion between text parts),
- sentence interconnection,
- appropriate language style to the topic,
- completeness of the text,
- the norms of orthography and punctuation.

The research of students' grammatical competence according to the criteria described above shows that 57% observe the proportions between the parts of the text, the link of sentences to form the text as a whole, observe the principle of completeness of the text, use paragraphs appropriately in the text. In its turn, the most characteristic deficiencies of 43% of the respondents from the point of view of the composition of the text are the following: the proportions between the parts of the text have not been observed; the boundaries of the introduction to the text are most often clearly visible, but the main paragraph only paraphrases the same idea as the introduction; there is no clear direction of thought in the main part or it is highly chaotic, there are no transitions between parts of the text; indentations are not observed precisely in the text (14% of respondents

either do not use indentations at all or the indentation has no connection with the opinion expressed); the conclusion often does not stem from the previous text, it is a repetition of an idea already expressed in the introduction or the main part, or as a new thought that does not stem from the previous one, and therefore indicates the incompleteness of the text. There are no proportions in the text between the introduction and the conclusion. The conclusion is usually unreasonably short (Anspoka, Martena, 2021).

In order to find out how students learn text-forming and what are the causes of text-forming errors, an observation of Latvian language lessons was carried out. During the observation, attention was paid to the methodology of learning grammar questions, as well as to how students act while writing (how they chose the topic, plan the content, edit and improve the text).

Observing the pedagogical process, it has been discovered that students learn the language formally. Students learn the theory and find in texts or invent themselves appropriate sentences and word formation techniques. This kind of teaching approach does not promote an in-depth understanding of language as a system.

Out of the 409 respondents' essays, only 5% have lexical complexity, i. e., a diverse, extensive vocabulary and precise use of specific concepts or terms. About 17% of students, while writing or speaking and thinking at the same time, are unable to synchronize their internal speech with its external expression. This is evidenced by texts in which the individual sentences are not separated from each other. Even though essays are dominated by sentences with their full structure and understandable out of context, there are quite a few statements with an incomplete sentence structure as well.

80% of all sentences are compound sentences, and most often they are complex sentences with one or two subordinate clauses.

This means that in the process of text-forming more attention is paid to the acquisition of text editing skills, so that the student learns to revise his written text and look for opportunities to improve it.

Student texts have an average of 9 to 10 punctuation errors, separating not only parts of sentences, but also detachments, coordinated parts of sentence, and so on. There are some texts in which the writer mostly uses simple extended sentences. This makes the content of the texts very simple; the thought moves slowly, it does not evolve and shows either a poor language or a reluctance to make mistakes (Anspoka, Martena, 2021).

If previous studies are dominated by errors in compound sentences with collateral subordinate clauses without a linking words (Analysis of Students' Achievements… in Text-Formation in the Centralized Latvian Language and Literature Examination: Situational Analysis and Recommendations, 2007; Gavriļina, Špūle, 2018), then the 2018-2021 study is dominated by errors in complex sentences with one or two subordinate clauses introduced

by conjunctions or linking words, in sentences with a participial phrase and parenthetic words or word groups. If in the above-mentioned study it has been revealed that 12% of writers have not made any mistakes in punctuation, then this study shows that there are only 5-6% of respondents like that (Anspoka, Martena, 2021).

There are 9% fewer punctuation errors in the texts of minority secondary school students compared to secondary school students of Latvian-language of instruction educational institutions and state gymnasiums. This can be explained by the fact that the texts have simpler syntactic constructions of sentences, as well as the students have acquired the ability to transfer the experience gained in the syntax of the mother tongue to the state language. In teaching grammar, teachers do not have enough understanding of the functionality of grammatical forms, especially the significance of grammatical categories of the verb (grammatical semantics), application differences and purpose in informative and literary texts.

If, from the point of view of the content, composition and style of the text, there are no statistically significant differences between the students of Latvian language of instruction secondary schools and secondary school students of state gymnasiums and minority schools, then in terms of the spelling of words and word forms there are both common and different errors, as well as their causes. The number of errors also varies.

Spelling norms are fully observed by 2% of respondents, 1–2 spelling mistakes are present in 3% of respondents' texts. They are mostly students of Latvian-language of instruction secondary schools and state gymnasiums.

The highest number of orthographic errors (average 10 – 12 errors) is in the work of secondary school students of minority educational institutions. About 15% of all essays are texts with 20 or more errors.

In terms of the frequency the common orthography errors of students of Latvian-language of instruction educational institutions, state gymnasiums and minority educational institutions are as follows: spelling of words forms of verbs, use of short and long vowels in word roots and word forms, spelling of consonants in words and word forms, spelling of words written together or separately, spelling of foreign words, spelling of proper and compound nouns, and inadvertent errors.

It is important to note that in 48% of cases, there are punctuation errors in the essays and oral speech of secondary school students, which according to the Latvian language subject standard must be eliminated by the 9th grade. This means that there are no significant changes in the development of students' language proficiency in three years.

The observation of the pedagogical process shows that 10% of teachers do not feel confident about all grammatical issues, which means that teachers' grammatical competence is also a topical issue in practice.

Discussion

The relatively low level of grammatical competence found in the study suggests that grammar cannot be a subject in itself, that a student is asked to learn from paragraph to paragraph. The teacher must incorporate the rules included in the paragraphs to the language heard in the classroom, at home, outside and on the street, integrate with the content of literature, paying attention to the affluence of language forms, diversity of meanings of different words and prefixes, synonyms, eliminate Russianism and Germanism, highlighting the Latvian culture of the language. The grammar book is not a goal, it is only a means to achieve the goal: correct, pure Latvian language (Bērziņa-Baltiņa, 1942).

A topical issue in grammar teaching is the balance between theory and practice. According to the guidelines of the education reform, the acquisition of all the most important grammar rules should be preserved in the curriculum, paying attention to the awareness of the purpose. Work on the language can also be continued in literature lessons. The use of language in practice shows that the grammar of the Latvian language cannot be considered as a by-product of learning the mother tongue, which a child acquires without learning in the same way when starting to speak their mother tongue. Acquisition of grammatical norms and regularities is not only a part of the curriculum, it is also an essential part of the development of logical thinking, just as culturally and grammatically accurate language is a part of an educated person's personality (Laiveniece, Lauze 2021; Laiveniece, 2003).

Purposeful work with the text is a topical issue. Texts to be used in the learning process are not directly intended for language acquisition (i.e., they are not adapted – shortened, simplified, supplemented – and they implement their intended functions: give instructions, entertain, warn, influence, etc.) and fit successfully in the thematic and grammatical framework of the learning process. The language cannot be acquired only with examples that have been specially created or adapted from authentic texts and that always represent an ideal language that complies with the language norm (Berra, 2020). Work on the language should be continued also in literature lessons, therefore a close connection between the Latvian language and literature has to be ensured.

At the end of basic school and in secondary school, the students themselves should be more actively involved in the acquisition of language phenomena, offering to study certain word forms, sentence constructions, selection of words, imagery, etc. in a variety of texts, including mass and social media texts frequently used on a daily basis. In this way, students would notice indirectly the value of the Latvian language application,

differences between advanced and elementary level language (Martena, 2021).

Exercising and constant revision of the previously acquired experience is a topical issue (systematic inclusion of both the content to be learned and what has already been covered in order to establish more sustainable skills).

The student's sense of language as the ability to feel, perceive emotionally and assess the application of language means should be promoted. In language teaching, the content should be chosen to help the student learn the issues necessary for their language practice, the methodology for linguistic terminology acquisition should be specified, so that more time is left for the acquisition of written speech and language culture. The work on language and other errors is a topical issue, focusing not only on mistakes, but also on successes, good speech patterns.

The co-operation of teachers of all subjects and the attitude of each teacher towards their own language and speech are important in order to ensure the quality of text-formation teaching.

Conclusions

Grammar is a branch of linguistics that studies the grammatical system of a language. Grammatical competence can also be reduced to language competence, which is characterized by the ability to present content according to the topic, to observe the conditions of text composition, sentences, their sets or contextual connection, language style suitable for the communicative task, to observe norms of language culture.

In order an individual would be able to use the language in a qualitative way, the application of punctuation or certain graphic signs – punctuation marks to separate grammatical or conceptual units of expression in writings, is an important issue. Looking at the use of punctuation, it is also possible to judge how logically the author's thought is directed and the ability to express it in the written speech.

An individual with good, reasoned judgment, wide, varied and accurately used vocabulary is also considered as proficient user of the Latvian language.

As the level of students' language competence has decreased in recent years, the methodology of teaching grammar needs to be reviewed. Grammar cannot be a subject in itself. Grammar lesson is not a goal, it is only a means to achieve the goal: correct, pure Latvian.

The balance between theory and practice is a topical issue in grammar teaching. Acquisition of all the most important grammar rules has to be preserved in the study content, paying attention to the awareness of its purpose.

Work on the language should be continued also in literature lessons, therefore a close connection between the Latvian language and literature has to be ensured.

Authentic texts should be used in the learning process, as the language cannot be learned only with examples that have been specially created or adapted from authentic texts.

Turn grammar lesson into an interesting but serious "game" in an atmosphere of natural and positive emotions. Both in the basic school stage and in the secondary school, the students themselves should be more actively involved in the acquisition of language phenomena, offering to study certain word forms, sentence constructions, selection of words, imagery, etc. in a variety of texts, including mass and social media texts frequently used on a daily basis.

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Skolēnu sasniegumu analīze tekstveidē latviešu valodas un literatūras centralizētajā eksāmenā: situācijas izpēte un ieteikumi [*Analysis of students' achievements in text formation in the centralized examination of the Latvian language and literature: situational analysis and recommendations*]. (2007). https://www.visc.gov.lv/lv/petijumi/ssapet1.pdf (In Latvian)

*I know your deeds, that you are neither cold nor hot. I wish you were
either one or the other!
So, because you are lukewarm—neither hot nor cold—
I am about to spit you out of my mouth.
Revelation 3:15-16*

DRAMA EDUCATION FOR VIOLENCE PREVENTION: APPROACHES AND CHALLENGES

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ABSTRACT

Violence in schools is a socially and culturally complex phenomenon that affects not only the victim and the abuser but everyone, including eyewitnesses, parents, and educators. Drama education provides a unique experience in reducing violence because it involves both the mind and the emotions The adolescent is the age stage that is influenced by many external and individual factors, such as those related to the change in the training system, age development, change of interests and change of class dynamics, etc. All of these factors can lead to an increase in the risk of stress background and violence situations. The study explores violence prevention through the lens of drama. The review reveals several approaches for drama education with connection to personal development and violence prevention, including, "Forum Theatre" and "Process drama". The study provides recommendations to emphasize the role of drama education in reducing violence in schools.

Keywords: *drama education, personal development, violence prevention, forum theatre, process drama*

Introduction

To explore the pedagogical potential of drama for violence prevention among adolescents it is necessary to understand the theoretical framework and historical development of the concept of drama education and how it has been transformed through the years. Even the effect of using drama on the audience was noted by Aristotle (Rasmussen, 2010). The pedagogical use of drama has increased rapidly in parallel with the rise of progressive

and liberal education. As noted by several authors (Bolton, 2011, Way, 2009), the emphasis on education has changed, stressing the child's personal and social development. The drama became essential because the role-play looked relatively close to children's games, the drama was more child-centered than subject-oriented, more process-oriented than outcome-oriented, and more active and expressive than passive. Drama education (O'Connor Aitken, 2014, Eriksson, 2009, Jarrah, 2019) promotes the exchange of experiences and the reduction of myths and creates an open discussion in which one situation can be viewed from several points of view. Its central elements are play and the personal experience of each learner. In addition, as Umerkajeff (2012) emphasizes, it is very important to understand that the process is as important as the outcome and that the teacher involved in the learning process becomes one of the participants in the play. Drama engages children physically and in a way that breaks daily routines and leads to new knowledge (Morris, 2005, Nelson et al.,ath, 2001, O'Toole, 2003, Perry&Rogers, 2011). Drama education provides a unique experience in reducing violence because it involves both the mind and the emotions (Mavraudis & Bournelli, 2016). The role-play, and getting into "other shoes" provides an opportunity to explore oneself and the world in a way that protects from the consequences of one or another situation that teenagers face daily (Johnson, Liu, Goble, 2015, Carter, Prendergast, Belliveau,2015, Lofgren, Malm, 2005). As suggested by various authors (Nelson, Colby, McIlrath, 2001, Morris, 2005, Lofgren, Malm, 2005), drama plays a key role in educating young people to become important and interested members of the society able to address current environmental, economic, and societal challenges. It allows young people to explore the complexities of life, giving them the tools and guidelines in order to deal with situations that require an immediate and unusual response. The literature review analyzes the approaches used by drama educators – Forum Theatre; Process Drama and others – to reveal the importance of drama in personal development and socialization.

To achieve the research aim, the research question was raised: How does the pedagogical potential of drama reveal through different approaches with the linkage to personal development and violence prevention,

Methodology

The literature review describes the main approaches of how educators have attempted to link drama education with personal development and collaboration among learners. It notes trends and challenges presented in the literature and makes recommendations for using drama's pedagogical potential for violence prevention among adolescents. In order to reveal this

potential serious research has been carried out using the latest scientific literature found in Web of Science, Taylor and Francis, and Primo that are published in English in the time period 2000 – 2020. Following the method given by Xu Xiao and Maria Watson (Xiao, Watson 2019) the systematic review was realised in five phases. In the first phase, initial keywords were identified having considered the researcher's knowledge of the field and the research question: drama education; personal development. After reviewing databases 37 potentially relevant articles were found and identified for further research.

In the second phase based on the review of abstracts, specific searches were conducted and criteria for inclusion and exclusion were defined. (see Table 1).

Table 1. Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
Studies in the English	Studies in other languages.
Studies from the school education field.	Studies from other fields.
Scientific articles, reviews or books, monographs.	Conference review
Relation to personal development or schools violence	Drama as the performing art

After reviewing of articles 13 articles were excluded based on chosen criteria. To obtain more articles the key words: drama education – was combined with the term – as these terms represent borders of this research. As result 3 more articles were added to the selected list.

Results

In the third phase in accordance with the screening results, full texts of studies (9 scientific monographs, 2 literature reviews, and 17 empirical studies were reviewed in order to realize quality assessment and to work out data extraction and analysis (Xiao, Watson, 2019). The time period analyzed in the review was 2000–2020 covering the following countries: Sweden, Australia, Canada, and Malaysia. During the fourth phase, the characterization of the studies (Xiao, Watson, 2019) was realized. Following the inductive method information from each study was extracted and divided into research areas. After reviewing of the studies the following thematic categories were constructed: Theoretical background of drama in education, Drama education in relation to school violence, Qualities of drama education in forming personality and human empowerment.

Table 2.   Thematic categories of systematic review

Thematic category	Authors
Theoretical background of drama in education	Bolton, 2011; Bowell, Heap, 2010; Fleming, 2010; Rasmussen, 2010; Umerkajeff, 2012; Dunn, 2017; O'Neill, 2014; Way, 2009.
Qualities of drama education in forming personality and human empowerment	Selderslaghs, 2020; Shira, Belliveau, 2012; Jarrah, 2019; Kipling, 2017; Etherton, Prentki, 2006; O'Connor Aitken, 2014; Eriksson, 2009; Johnson, Liu, Goble, 2015; Carter, Prendergast, Belliveau, 2015; Katsaridou, Gotzon, Vio, 2015; Morris, 2005; O'Toole, 2003
Drama education in relation to school violence	Mavroudis, Bournelli, 2016; Lofgren, Malm, 2005; Shiakou, Piki, 2020; Falconi, 2011; Catterall, 2007; Burton, O'Toole, 2005; Joronen, Rankin, & Åstedt-Kurki, 2008

Discussion

The fifth phase reveals the usage of the Thematic inductive analysis to explore and analyse the content of the studies in accordance of categories (see Table Nr. 2). Thematic analyses allow operating with the wide range of theoretical studies and could respond to the study questions and could assist in forming the research design.

Theoretical background of drama in education

In order to define drama in education, several definitions were selected and common features were recognized (Bolton, 2011; Bowell, Heap, 2010, Fleming, 2010, Rasmussen, 2010, Umerkajeff, 2012) – it is stressed that drama affects both the mind and emotions at the same time, helps to communicate with others, as well as to find self-esteem. A drama can be defined as a specific sequence of events that reveals problem situations or conflicts. The drama involves several people working in a fictional context. When these fictional events are shown to an audience, drama becomes theatre (Burton, O'Toole, 2015).

Drama is an art form that most accurately explains conflicts between people. Conflict is part of the core of drama that exists to portray and explore human personalities. In the drama, people reveal themselves in dialogue. During the drama, tension accumulates, followed by a climax and solution. Dialogues, negotiations, and argumentation from all parties involved serve to resolve tensions (Bowell, Heap,2010). Drama in education promotes the quality of education, it can be both a method and a part of

the curriculum that integrates feelings, thoughts, and actions, strengthening a holistic view (Etherton, Prentki, 2006, O'Connor Aitken, 2014, Eriksson, 2009, Johnson, Liu, Goble, 2015).

The central role of the drama in resolving key conflicts is empathy (the ability to identify not only cognitively but also emotionally with others), to some extent "get into the shoes of others" and to see the world from another view for a short time. Drama triggers both empathy and distance at the same time. Thus, the view of things can be changed (Bolton, 2011, Bowell, Heap, 2010, Fleming, 2010, Rasmussen, 2010).

Drama as a tool for better understanding the world and oneself and for solving the problem situations, which every child and the young person faces daily was taken as a basis for the creation "Creative Dramatics" movement in the United States and "Drama in Education" movement in the United Kingdom of Great Britain and Ireland. Both movements emphasize the active learning power of doing drama and considered the improvisational methods of drama by allowing children to try different roles not only as actors but also as playwrights and directors (Bolton, 2011). The theatre playing, as it was regularly used in schools in a view of different authors (Bolton, 2011, Fleming, 2010, Hatton, 2015) was often associated with mechanical teaching, repeating a text that did not co-relate to the children's interests and needs. The axis of "Creative Dramatics" was exercises and training programs tailored to children's needs, with a special focus on games and self-expression.

The seminal author, who gave a new impulse to the traditional teaching of drama (concentration on speech and text/content) was a British theatre practitioner Brian Way. In his work, Brian Way focused on developing students' sensitivity and imagination by creating a special exercise system (Way, 2009). He put forward life skills training to acting skills training and thus motivating teachers to concentrate more on developing children's creativity and self-expression.

Bolton (2011) argues that this position diminishes the real power of drama because drama is an art of symbols and should reveal universality rather than individual revelations. In addition, Bolton (2011) emphasizes that progressive educators do not affirm the value of drama as symbolic art, but level it to use in teaching children life skills, concentration, and developing children's sensitivity.

Although the techniques that drama specialists use could differ, some elements are in common in all practices. To define, what are the necessary elements which should be considered by teachers and drama practitioners Bowel and Heap (2010) give the following keys:
- The willing suspension of disbelief
- The fictional circumstances of the drama

- The taking of a role
- The introduction of productive tension into the drama and therefore into the classroom
- Skilful signing through voice, gesture, and the use of objects, sounds, and artifacts to establish a clear focus, a point of view, and a sense of place
- Process of artistic co-creation between teacher and learners is born of the collective processes of acting, directing, and playwriting.

By summarising different methods used in the Drama in education Lofgren and Malm (2005) suggest, that there are four perspectives in which Drama pedagogy and training programs could be developed:

- Artistically oriented perspective – focuses on the creativity of children and young people and their ability to express themselves, as well as to collaborate among themselves. The main idea is to give the story scenic form. The drama work can be seen in an artistically oriented perspective as a preparation for a theatre performance based on texts created by different authors.
- Personal development perspective – Thematically, this perspective is similar to an artistically oriented perspective – there may be the same tasks and improvisations that are used in working with students. However, the main focus differs; it is not an aesthetic form, but a reflection on feelings and relationships. The focus is on general human relationships, values and group dynamics. Conflicts are studied in terms of their impact on personal growth. This perspective makes drama a valuable tool used to prevent violence in schools.
- Critically liberating perspective – the Forum theatre and other methods represent this perspective aiming to train the oppressed to break oppression. Mostly the focus is on relations between individuals and society. Conflicts are studied from a power perspective.
- Holistic learning perspective – within this perspective the teacher in role is in the center of the story, fairy tale, or historical events. The focus is on universal values.

Roleplay could be the starting point for a deeper analysis of problems related to environment and the society, it can bridge challenges that occur in daily life with a possible solution, gives a new insight into a human relationship as well as self-perception.

As it is suggested by different authors (Dunn, 2017, Fleming, 2010, O'Neill, 2014) drama has an essential role to play in educating young people to become the vital and interested players in meeting and solving current challenges in the environment, economics, and society. It allows children to explore the complexity of life, gives them the necessary instruments and guidelines for action in situations where an immediate and non-ordinary

reaction is needed. This is a proper stimulus to continue work on finding out the drama's potential to prevent violence among adolescents in schools.

Qualities of drama education in forming personality and human empowerment

The literature review revealed several approaches for using drama education in schools that could be related to violence prevention. These approaches describe various ways, what are the main features of drama which particularly focus on personal development and linkage between rising of empathy and keeping of distance.

1. Putting the child in the center of learning – "Mantle of Expert". The pioneer who gave the new impulse to drama in education was a drama teacher and researcher Dorothy Heathcote. She created the method "The Mantle of the Expert", which is closely related to the change of approach to the curricula. According to O'Neill (2014), this method puts children at the center of learning. The teacher's task is to create conditions in which a mantle of leadership, knowledge, competence, and understanding grows around the child. In the Mantle of Expert approach, as it is recognized by Aitken (2014) the following principles are used: exploratory learning; focusing more on the process or process drama; and positioning children as those who are responsible for resolving the situation, which also means taking up new roles in relations with teachers.

This approach responds to the child's needs and makes the situation exciting and appropriate to his daily observations. Selderslaghs (2020) highlights, that Heathcote program was guided by the expectations, needs, and capacity of the target group (children or youth, by leaving appropriate space for improvisation. This approach showed another way how to work with children avoiding using pre-prepared scenarios and control exercises. However, the Heathcote program also was based on a certain foundation in terms of external form, internal structure and strategy, which was based on both – the emotional involvement of participants and the distance that is required to provide emotional protection for participants. Eriksson (2009) compares two approaches for distancing. In the program developed by Heathcote, similar to the process drama, distance is perceived more as an emotional protection line, creating a distance between the participants and the role they are taken. Besides that, distancing could be understood as finding another angle from which to observe the situation and take decisions. In both cases, it is very important to get the emotional involvement of the participants, as well as to use different perspectives on how to look at the given situation Jarrah (2019) characterizes this process as an opportunity to explore parallel both – participant role and role of recipient.

Analyzing Heathcote's work, Selderslaghs(2020) emphasizes the special role that teachers play. By taking up the role and becoming a participant in a drama situation every teacher could explore new forms of collaboration with students. The fictional context allows both – better knowledge transfer and immediate feedback. Drama provides a broad spectrum of interaction with the teacher playing a role and allows to change the discourse.

The challenge for drama practitioners, as Morris (2005) notes, is to develop a curriculum that meets modern requirements and engages young people in a meaningful artistic process by pushing them also to become drama agents. The potential of drama to stimulate synergies between external and internal factors is also acknowledged by Fleming (2010), who declares, that by engaging in drama, students acquire knowledge that mostly comes from outside. On the other hand, personal involvement in drama is based on everyone's potential or talent which should be developed. Another dichotomy as it is noted by several authors (Bolton, 2011, Fleming, 2016) rises between drama for learning or understanding and drama as an art form. Rasmussen (2010) reveals three drivers associated with drama in education. First, it is the correlation that is formed in the creation of drama with processes that have an individual meaning, which could be also called the inner vector. Another driving force is aesthetic enjoyment, and finally, it is a complex form of drama that creates both reflection and excitement.

2. Process Drama. According to O'Toole (2005) process drama has risen from the concept of Drama in Education broadly used by Dorothy Heathcote and Gaving Bolton. To emphasize reflections, non-linearity, and conventions of drama Cecilly O'Neill, Professor of Drama Education has introduced the term – process drama, which offers multiple perspectives on the dramatic focus. Several elements are characterizing the process drama. Dunn (2016) describes them as follows:

- a collaboration between all participants including the teacher/facilitator;
- the absence of an external audience – meaning is made for and by the participants;
- direct involvement in the action by the teacher or facilitator;
- the centrality of tension and the importance of symbolic transformation;
- its spontaneous and improvised nature;

Process drama, according to O'Neill (2014) and O'Toole (2005), is a form that offers students a holistic and universal experience. In the process drama, the dramatic world is created together, roles are formulated and accepted. The drama pays special attention to tensions in order to acquire experience of one or more tensions in each drama situation. Two main elements should be in focus when analyzing the Process Drama. The

first element is the context of the situation: educators need to determine, whether they want students to experience activities from within, based on their experiences, or from outside. The second element of the process drama is an inspiring pretext, which can be a play, a film, a diary entry, a work of art, or even a song. Structurally process dramas are organized in three phases: an orientation or initiation phase, an experiential phase, and a reflective phase. The process drama (O'Neill, 2014) is essentially reflective and geared to strengthen learning. It is a participatory program aimed at engaging children and young people in fictional reality through a variety of techniques, including role-plays, improvisation and dramatized poetry. The simultaneous presence of the participants in different realities gives them the opportunity to examine situations, problems and issues from several perspectives without losing a safe environment around them. The themes chosen for construction of process drama are humanly engaging, the knowledge is 'revived' and the learning content is multi-layered (Hatton, 2012, Bird, 2011, Jarrah, 2019, Kipling, 2017, Etherton, Prentki, 2006, O'Connor Aitken, 2014, Eriksson, 2009). Participants engaged in process drama have an opportunity to observe themselves from the distance through a role play and at the same time participate in the process creation. This proves the close linkage between drama in education and process drama.

3. Forum Theatre. Another influential worldwide movement has grown up in Brazil – "Forum theatre" characterized by a desire to empower those who are oppressed with the techniques which help them to deal with the oppression. The theoretical basis for this movement is Paulo Freire publication "Pedagogy of the Oppressed". According to Bolton (2011) most European countries have realized the capacity of "Forum theatre" techniques to change children's behavior and incorporated them into their training programs. O'Toole (2005), one of the "Forum's theatre" practitioners, has noted, that educators should never work on topics that have little to do with the challenges that people face daily. Seminal author of "Pedagogy Oppressed" Freire (2005) offers the way have drama could be used for evaluation and analysis of problems and to change people's attitudes towards them. Forum theatre does not have spectators as passive beings, but they are spec-actors, transformers, those who take on the main role and change dramatic action.

Forum theatre, as noted by Katsaridou and Gotzon (2015), is an effective method of strengthening the target audience to critically evaluate the reality in which they live, finding new solutions to the challenges facing society: injustice, violence, and all kinds of crises. By being involved in the theatrical activities, children and young people become prepared for real-life situations and this experience strengthens them. Forum Theater can be used as a tool for everyone to understand what their strong sides are, how they

are related to the power structures, and what can be done to change this situation. Evaluating the significance of the Forum Theatre, Katsaridou and Gotzon (2015) emphasize the opportunity for everyone to put themselves in the place of the "oppressed" and to see the world through each other's eyes. Forum Theatre develops empathy and reflects the problems that people face daily. "Getting in other people's shoes" gives an opportunity not only to understand each other better but also to identify moments, when everyone has felt oppressed and by engaging in dramatic action to release the main character. Having considered the difference in people's characteristics, and social and cognitive abilities, everyone needs to develop a personal strategy to maintain and strengthen their empathy. Forum Theatre also provides an opportunity to discover and express individual and collective creativity. Burton, O'Toole (2005) emphasize that through Forum Theatre, children and youngsters can discover the art and by exploring it to explore their creativity and by using it to learn about themselves. It is an opportunity for everyone to express themselves, both physically and emotionally, and to offer new solutions to very important problems because two essential processes are activated: thinking and production. Forum Theatre is very much related to the empowerment of participants (Katsaridou and Gotzon,2015) It can be used to promote "empowering education", which means strengthening critical thinking and learning to perceive and understand diversity, this method can also be well adapted to think about and to prevent violence in schools (Burton, O'Toole, 2005)

Drama education in relation to school violence

When searching for a link between drama and violence prevention, the main focus is on developing empathy, both cognitive and emotional. The opportunity to step into other shoes, as Lofgren, Malm (2005) and Shiakou, Piki (2020), note, raise awareness of the victim's feelings and also empower children to deal with situations of violence. It should be stressed, that school violence is a problem, that affects everyone, regardless of their role. When analyzing papers on the connection between violence and drama, the most commonly used term by the authors, (Saldana,2005, Catterall, 2007, Burton, O'Toole, 2005) when talking about violence in schools, was bullying, which can combine all three types of violence (sexual, physical, psychological) and is recognized by 3 characteristics – power imbalance, systematic abuse and certain intension. It should be also noted, that bullying is a process, as Schott and Søndergaard (2014) point out, in which the social context is very important. The papers analyzed in the review mention 3 programs in which drama was used as one of the bulling prevention techniques – The Friendly Schools Program in Australia, Acting Against Bullying Program, Australia, Sweden, Malaysia and the Dare to

care in Canada Summarizing researchers' opinions (Caterall, 2007, Burton, O'Toole, 2005, Gallagher, & Rivière, 2004, Goodwin et al., 2019, Hatton, 2015, Joronen, Rankin & Åstedt-Kurki, 2008) on the implementation of the bullying prevention programms, there are a number of constraints or limitations to consider when working with drama for violence prevention – they can also be called mistakes that are sometimes happen at lessons what should be learned – for example – unpredictability – drama is not a linear process and it is too naive – to pretend that bully always be demonic and victim weak – the situations, which are played through drama programme have to be connected with real life, and they cannot be simply solved. It is also very important to protect the adolescents involved from the external audience as well as to keep a distance- not to hurt anyone. The rules of the game must be set clearly. Researchers (Kipling, 2017, Etherton, Prentki, 2006, O'Connor Aitken, 2014, Eriksson, 2009, Johnson, Liu, Goble, 2015, Carter, Prendergast, Belliveau, 2015, Freire, 2005, Katsaridou, Gotzon, 2015) also acknowledge that drama is a lived event – hard to analyze systematically and cognitevely The researchers Mavroudis, Bournelli, 2016, Lofgren, Malm, 2005, Shiakou, Piki, 2020) evaluate anti-bullying programs positively – after the implementation of the anti-bullying program the level of violence decreases, even for 53% – moreover, the longer the program, the greater its effectiveness. However, as noted above, there is a lack of data to show the direct impact of the drama on the reduction of school violence. The methods used to assess adolescent behavior change (surveys, focus group discussions) show that adolescents can recognize bullying situations quite well after the implementation of programs, but there is no evidence of whether and how they will act to prevent situations of violence. (Caterall, 2007, Burton, O'Toole, 2005, Gallagher, & Rivière, 2004. Goodwin et al., 2019, Joronen, Rankin, & Åstedt-Kurki, 2008, Schott, & Søndergaard, 2014). Although theory (Fleming, 2010, Rasmussen, 2010, Umerkajeff, 2012) suggests that drama as a pedagogical tool might be effective, research findings concerning its effectiveness in fighting bullying are limited (Mavroudis, Bournelli, 2016, Lofgren, Malm, 2005, Shiakou, Piki, 2020), This could be explained with the lack of well-designed (valid and reliable) measurements and theory-based research The effectiveness of an intervention is also linked to observing certain basic principles; it should be continuous and longlasting, it should incorporate a whole-school approach and well-trained teachers are needed (Mavroudis, Bournelli, 2016, Lofgren, Malm, 2005, Shiakou, Piki, 2020). There are studies that have used qualitative research methods (Mavroudis, Bournelli, 2016, Shiakou, Piki, 2020) that have activated and analyzed the positive results of using drama for violence prevention however they cannot be generalized until they are not verified in a broader context.

Conclusions

Drama can strengthen the personal development of children and young people, and give them opportunities and awareness of the diversity of life. Drama helps to understand, evaluate and solve complex situations, learn ways to react to them and to act accordingly.

Themes used in the drama lessons should respond to the needs of children and young people to train empathy and self-exploration

The role of drama in the learning process is to help children and young people to acquire the skills which are necessary for responding to the challenges in the society and environment. Along with practice, research on the different approaches of drama in education should be strengthened.

Drama educators need to be aware of the importance of daily classroom practice to work on empathy, critical thinking, and sensitivity for children and young people through playful interaction.

In its development drama in education went through the transition from a focus on an aesthetical approach to prioritizing the social approach and learning processes.

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THE IMPACT OF COVID-19 PANDEMIC ON MUSIC EDUCATION: A REVIEW OF THE LITERATURE

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ABSTRACT

The study topicality is related to the impact of the Covid-19 pandemic on music education in various educational institutions worldwide. This literature review aimed to summarize and identify current issues related to music education during the Covid-19 pandemic. The study used publications available in the Sage Journal database and published in the last three years (2020-2022). The study addressed three research questions. RQ1: What teaching modes adopted during the Covid-19 pandemic in music education are mentioned in studies, and for what purposes are music teachers using digital tools? RQ2: What are the challenges and benefits of teaching and learning music during the Covid-19 pandemic? RQ3: What are the common reasons for music teacher burnout, and how to ensure the teacher's and student's well-being during the music teaching and learning process in the Covid-19 pandemic? The literature review allowed us to identify three thematic groups that affected music education during the Covid-19 pandemic: (1) The teaching mode and the digital tools that support music education; (2) The challenges and benefits in teaching and learning music; (3) The stress and well-being of music teachers and students. The study revealed that music teachers mostly use digital tools to promote students' creativity, support learning, and assess outcomes. During the Covid-19 pandemic, teaching and learning music were associated with several challenges: learning organization, providing the material and technical base, learning to play musical instruments, communication and support for students. That resulted in increasing the workload and a lack of control over equipment and performance, which affected the well-being of music teachers. Despite the challenges, music teachers seek and create several solutions to improve the overall effectiveness of music education in the changing epidemiological environment. The findings describe the impact of the Covid-19 pandemic on music education and help music teachers to understand the problems that occurred during the pandemic.

Keywords: *Benefits, challenges, Covid-19, literature review, music education, music teachers, students, well-being*

Introduction

The Covid-19 pandemic has had a dramatic impact on many areas of life. It has paralyzed not only the economy but also the education system worldwide. In response, new approaches were developed to ensure learning continuity during the pandemic at all stages of education. In 2022, UNESCO published an overview of the impact of the Covid-19 pandemic on the education system in general (Meinck et al., 2022). Many countries worldwide, including Latvia, have introduced some form of remote learning, which often lasted for several months. The restrictions caused by the pandemic have forced teachers and students to learn different technologies to reduce the learning gap and ensure the educational process during the crisis. The success of a new or upgraded technology deployment into the education system was achieved within one year only, which could not be possible in normal conditions. As a result, technology became an integral part of the learning process. Many researchers believe that implementing technology in the learning process was not easy for teachers and students (Akarsu, 2021; Dotan et al., 2021; Marshall, 2020; Spieker & Koren, 2021).

The music learning process is based not only on an individual but also on joint music-making. Because of that, music education faced different challenges at all stages and forms during the Covid-19 pandemic. One of the challenges was to provide the process of joint music-making by learning remotely. Linda Thornton believes there is no technological solution to making music together but in different places (Thornton, 2020). The music subject is based on the interaction between multimodal sensory and auditory-motor (Cheng & Lam, 2021), which is why learning music online has had a more dramatic effect compared to other subjects.

By the end of the first wave of the pandemic, music teachers in general, high and vocational education stressed that it was time to prepare for the challenges ahead. For example, Michele Kaschub has urged teachers to review curricula and think about transforming face-to-face activities into distance learning projects. At the same time, she pointed out the necessity of improving music teachers' technological knowledge and students' skills in making digital music (Kaschub, 2020).

Music education is a field of practice where students should deal with several activities such as singing and playing musical instruments. These activities are better to be done face to face. This literature review aimed to summarize and identify current issues related to music education during the Covid-19 pandemic.

Methodology

Research Questions

The study raised three research questions: RQ1: What teaching modes adopted during the Covid-19 pandemic in music education are mentioned in studies, and for what purposes are music teachers using digital tools? RQ2: What are the challenges and benefits of teaching and learning music during the Covid-19 pandemic? RQ3: What are the common reasons for music teacher burnout, and how to ensure the teacher's and student's well-being during the music teaching and learning process in the Covid-19 pandemic? The study was conducted between November 2021 and April 2022 and based on a qualitative research design – scoping literature review.

Information sources and search strategy

The Sage Journals database was randomly selected to collect data about the impact of the Covid-19 pandemic on music education. The limitations imposed on selecting the publications for analysis are as follows: First, the papers were selected according to the keywords *Music education* and *Covid-19* using Boolean operator AND; second, the articles should have been published in full text and cover the most recent three years (2020–2022); third, the articles should have been published in English.

Study selection

According to the keywords, 78 scientific papers published in peer-reviewed journals were selected: *International Journal of Music Education, Journal of General Music Education, Music Educators Journal, General Music Today, Journal of Music Teacher Education, Research Studies in Music Education, British Journal of Music Education, Music Education Research, Journal of Research in Music Education, Musicae Scientiae, Psychology of Music* and others. The selected papers were analysed in three stages: Title, abstract and keywords, and full text. It was assumed that the article should have included information about music education in the context of the Covid-19 pandemic to evaluate eligibility at all stages. If the relevance of the article content in one of the first two stages could not be clear to determine, analysis of the paper's full text will continue until confirming or excluding its relevance to the research topic. As a result, 47 full-text scientific articles were selected for analysis that were initially systematized by the year of publication, the educational level, and the study participants. Most of the articles were published in 2021, reflected problems in general education and were interpreted from the teacher's point of view. (see Figure 1).
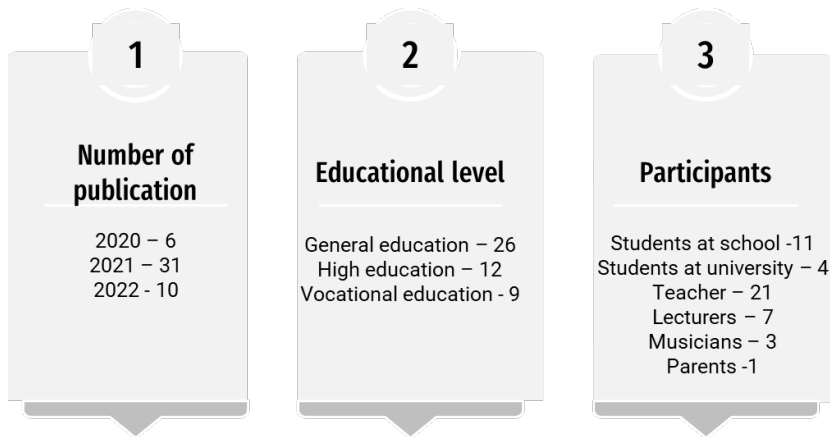
Figure 1. Systematization of papers selected for analysis
(author's construction)

Data analysis process

The data analysis was based on developing codes, describing and comparing, categorizing and conceptualizing (Hennink et al., 2020). The content of scientific papers was studied using content analysis, which aimed to obtain a detailed description of the impact of the Covid-19 pandemic on music education and to develop categories describing the phenomenon. The literature review was focused on three thematic groups related to music education during the Covid-19 pandemic: The teaching modes and the digital tools that support music education; the challenges and benefits of teaching and learning music; the stress and well-being of music teachers and students. The obtained results are presented in tables, figures and descriptive ways.

Results

Teaching modes and digital tools that support music education

For decades, the learning process in a traditional education system takes place where teachers and students are physically present in the same classroom. Suddenly, the education system faced an unprecedented situation that required immediate action. The educational institutions were forced to move from face-to-face learning to remote learning due to the Covid-19 pandemic. Various concepts are used in paper analysis to describe learning that does not occur in school rooms. The concepts used by researchers while analysing music education in the context of the Covid-19 pandemic often are *online, remote* and *distance* (see Table 1).

Table 1. Teaching modes that supports music education (author's construction)

Concepts	f%	Study
Online	34.2	
learning		Biasutti et al., 2021; Carter, 2022; Goodman, 2020; Norman, 2022; Norman, 2021a; Norman, 2021b; Savage, 2021; Spieker & Koren, 2021
instruction		Marshall et al., 2020
music-making		Cayari, 2021
lessons		Akarsu, 2021
teaching		Joseph & Merrick, 2021
classes		Yackley, 2021
Remote	28.9	
learning		Beirnes, 2022; Draper, 2021; Hash, 2021; Liu, 2021a; Norman, 2022; Norman, 2021a; Norman, 2021b; Park, 2021
music settings		Biasutti, et al., 2021
teaching		Nichols, 2020; Raschdorf et al., 2021
Distance	18.5	
learning		Hash, 2021; Shaheen, 2021; Thornton, 2020; Tsugawa, 2022; Ververis & Apostolis, 2021
coteaching		Hietanen et al., 2021
education		Akarsu, 2021
Virtual	13.2	
learning		Bucura, 2022
teaching		Yackley, 2021
schooling		Koner & Weaver, 2021
musicking activities format		Merve et al., 2021 Beirnes, 2022
Blended	2.6	
music teaching		Beirnes & Raudles, 2022
Digital	2.6	
learning		Duncan, 2021

The concept *online* is used in connection with the words such as *learning, instruction, music-making, lessons, teaching* and *classes*. Online refers to the condition of being connected to the internet through a computer or other devices. The concept of *distance* is associated with the teaching/learning process and the education system in general. It marks the distance in time,

space and social isolation between groups. The concept of *remote* is used often in combination with *learning, teaching* and *music settings*. Remote learning means that both teacher and student are not physically in the same room, and the information is transmitted using technology. The key elements of such a teaching/learning process are time, communication, technology and planning. The remote learning process can occur either synchronous in peer-to-peer interaction and cooperation at a concrete time or asynchronous with the activities that do not depend on the teacher.

Concepts such as *virtual*, *blended* and *digital* have been used uncommonly in music education in the context of the Covide-19 pandemic. V*irtual* is used in connection with the student's involvement in creating virtual musical performances. *Blended music teaching* means that the learning process takes place digital and face-to-face. Digital learning, on the other hand, involves the use of digital tools, whether a student learns in a classroom together with classmates or outside it.

Using different digital tools such as Google Classroom, Padlet, Quizizz etc. is essential if the teaching process occurs outside the framework of the traditional face-to-face classroom. Music teachers can get many benefits from using digital tools in their work. Sean Beirnes and Clint Randles (Beirnes & Randles, 2022) found that teachers use digital tools to enhance students' experiences and enable them to be creative, which was not possible before the pandemic. Furthermore, the digital tools provide the teacher with the opportunity to better understand and support students during learning (Duncan, 2021), offer pre-recorded music lessons with interactive elements (Norman, 2021b), and help to assess students' level of understanding and facilitate feedback (Norman, 2021a). Digital tools and platforms help music teachers to share material, communicate, exchange messages and keep track of all work done (Biasutti et al., 2021). The use of digital tools promotes learning effectiveness and should be meaningful.

Despite the many benefits of using digital tools in the learning process of music, there are some challenges students and teachers face like increasing cognitive load, performing joint music-making and finding the needed material to learn music. Renee Duncan (2021) acknowledges that students should focus only on one digital tool when working with digital audio workstations to reduce cognitive load. In addition, to provide high-quality music education remotely, it is necessary to provide enough music learning videos (Park, 2021). Also, the most often barriers to performing joint music-making on one of the learning platforms are a low speed and quality of the internet connection (Nichols, 2020), which affects the audio quality and causes a signal transmission delay (Biasutti et al., 2021). Cayari (2021) suggests using several edited recordings to create a virtual ensemble, to solve this problem and engage students in joint online music-making.

Teaching during the Covid-19 pandemic boosted music teachers' digital literacy and pedagogical skills. Furthermore, it has enabled music teachers at all levels of education to provide a supportive music learning process, even in the unpredictable and changing environment that the world has faced in the last two years.

Challenges and benefits of teaching/learning music

Due to the Covid-19 pandemic, the music teachers experienced challenges and benefits. The first wave of the pandemic was especially difficult for them when suddenly the music lessons had to be organized in another way than usual. During the two years of the pandemic, music teachers and their students experienced significant challenges in teaching/ learning music (see Figure 2).
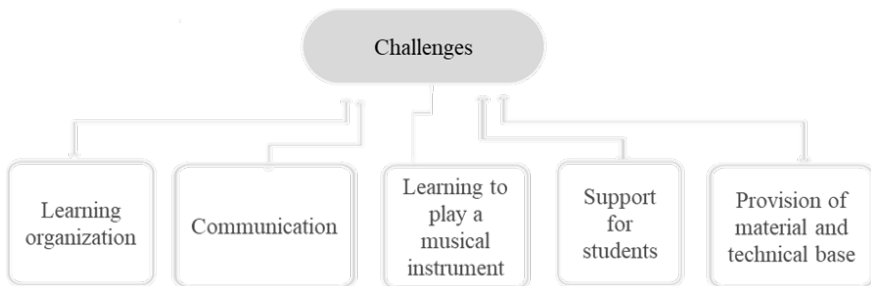

Figure 2. Challenges of teaching/learning music (author's construction)

One of the challenges encountered by music teachers and students was the quality of playing musical instruments. Thus, according to Beinres (2022), the music teachers should think about the teaching strategies used to develop the technique of playing musical instruments, and the students should find out how to get the necessary help from teachers. Making music online requires a significant contribution to developing lesson planning (Goodman, 2020), a creative approach (Yackley, 2021) and a focus on the technique and stylistic elements of playing a musical instrument (Ververis & Apostolis, 2020), which is not easy to achieve. Playing musical instruments is also associated with musical performances. A study analysis (Merve et al., 2021; Potter, 2021; Shaheen, 2021) revealed that providing group performance was a significant challenge for music teachers. Effective time planning (Potter, 2021), which helps structure individual meetings with students, is essential in preparing a musical performance during a Covid-19 pandemic (Liu, 2021a).

Music teachers and students also experienced limited access to musical instruments (Daubney & Fautley, 2021; Ververis & Apostolis, 2020), technology and technological training (Mercado, 2022), as well as problems

for some were caused by lack of internet connection and insufficient provision of educational materials (Marshall et al., 2020). In addition, teachers have encountered difficulties providing the necessary support for students with special needs and disabilities (Draper, 2021; Marshall et al., 2020). Furthermore, it was not easy for music teachers to provide equal learning opportunities for all (Nichols, 2021; Savage, 2021), to maintain learning motivation (Akars, 2021; Bucura, 2022; Marschall et al., 2020; Shaheen, 2021) and to facilitate feedback (Hietanen et al., 2021; Marschal et al., 2020).

Cooperation among teachers and students is considered an indicator of quality teaching and learning. The analysis of the studies reveals that during the pandemic, the future music teachers experienced a lack of cooperation with each other (Mercado, 2022) and general education music teachers did not have full opportunities to establish social connections with students (Norman, 2022) at the same time, the mutual social interaction was limited (Liu, 2022). Insufficient cooperation between students and teachers makes it difficult to maintain learning motivation and reduces students' activity and enthusiasm.

The literature analysis indicated that older students had adapted more easily to online learning than primary school children and older people in non-formal education. A study conducted by Jennifer Carter (2022) determined that future music teachers did not identify any problems with the transition to online learning because a system was developed to increase students' confidence in their musical and pedagogical abilities. On the other hand, Samuel Tsugawa (2022), who studied the online experience of older adult musicians during the lockdown, found that none of the seniors would have thought of making music at a distance if the conductor did not encourage them. A lack of face-to-face communication has made it harder for primary school students to maintain learning motivation (Marshall et al., 2020). However, parental support for their children to learn a musical instrument during the pandemic increases students' musical achievement (Oliveira et al., 2021). Parental involvement in the remote learning process during the Covid-19 pandemic is essential for primary school students.

The organization of online learning was time-consuming (Biasutti et al., 2021; Norman, 2022) and stressful (Biasutti et al., 2021). However, to mitigate the negative impact of the Covid-19 pandemic on the music learning process, music teachers have created a learning environment in which the student is safe, engaged, supported and challenged (Varner, 2021). In addition, the teachers considered the students' needs and preferences (Liu, 2021a), providing children with the opportunity to keep in contact with the surrounding environment (Liu, 2021b) and developed personalized teaching materials (Biasutti et al., 2021).

The Covid-19 pandemic created many challenges for music teachers and students but, at the same time, provided benefits for future pedagogical activities (see Figure 3). Literature analysis has shown that the organization of the teaching/learning process during the pandemic enabled music teachers to implement a student-centred approach, which according to Beinres (2022), promotes the student's involvement. The online environment allows students to take the initiative and make autonomous decisions about how they will learn and interact with teachers (Shaheen, 2021). Music teachers have the opportunity to incorporate more digital tools and platforms into the learning process (Beinres & Raudles, 2022; Hash, 2021), focus on individual music-making (Hash, 2021) and learn to deal with the unexpected situation (Liu, 2022). Music teachers also see advantages in sending and receiving material, especially in the absence of spatial and temporal constraints (Ververis & Apostolis, 2020). In addition, it is possible to make recordings while learning online, which provides many benefits for students as they can use it several times (Norman, 2022).
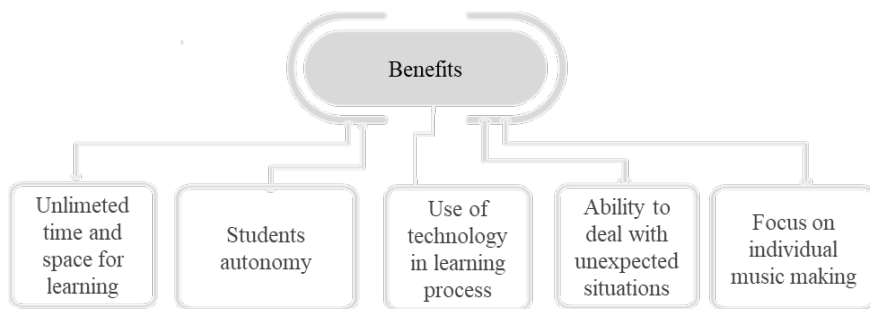
Figure 3. Benefits of teaching/learning music (author's construction)

Despite the challenges music teachers faced, they were able to demonstrate creativity, community, responsiveness (Thornton, 2020), perseverance, determination, innovation (Savage, 2021), flexibility, openness (Bucura, 2022) and critical thinking skills (Kaschub, 2020). The music teachers were loyal, collegial, and focused on overcoming challenges to facilitate student learning (Thorgersen & Mars, 2021). The music teachers also came up with creative ways to reach and support their students and shared their work with colleagues (Thornton, 2020). All benefits previously mentioned should be preserved in the education system to encourage each teacher to innovate and implement new technologies in their work.

The stress and well-being of music teachers and students

The last two years have not been easy for music teachers and their students. Covid-19 has often been one of the causes of teachers' burnout

because of the desire to keep an authentic music teaching and learning experience. Teaching as a profession is associated with humans and needs communication skills to interact with people. The teacher devoted everything to their daily work with students. Therefore, teachers must pay attention to how they feel and notice the depletion of physical and mental energy in time. Researchers found that remote and distance learning also influence students' emotional well-being (Liu, 2021a; Schwartz et al., 2021; Shaheen, 2021).

Stress is emotional or physical tension. Many situations during the pandemic were more difficult for music teachers and students than usual, which in turn caused some emotional or physical tension. Research (Kong & Wong, 2021; Miksza et al., 2021; Potter, 2021) revealed that the stress for music teachers was due to a heavy workload and a lack of control over equipment and performance. In addition, during the pandemic, teachers experienced few positive emotions, less involvement, and a lack of accomplishment. The anxiety of future music teachers was increased by general social mistreatment, time pressures and development challenges.

As a result of research analysis (Miksza et al., 2021; Rickers, 2021; Zabanal, 2021), it is concluded that music teachers should take care of their personal and professional well-being because the risk of a high level of stress and negative well-being is greater than the population average. As a consequence of paying attention to personal well-being, the music teachers improve their effectiveness and provide a positive learning environment for students.

What should be done to make music teachers and students feel good while teaching and learning in today's changing environment? Researchers determined that teachers should be compassionate (Kaschub, 2020), improve their knowledge of how to take care of their well-being (Zabanal, 2021), achieve work-life balance (Rickers, 2021), and play music or listen to music (Merve et al., 2021). On the one hand, music teachers gain more energy by being excited about what they are doing (Zabanal, 2021), but on the other hand, they should manage work time and define tasks to reach a work-life balance (Rickers, 2021). Understanding the elements that lead to burnout and paying attention to personal feelings can help music teachers respond to stress and take a rest on time if they feel tense (Napoles, 2022). Making music by using different strategies helps music teachers experience less anxiety (Merve et al., 2021) while listening to music can regulate psychological discomfort (Kong & Wong, 2021). To make students feel good, teachers can create a virtual space where students can share their emotions and encourage each other, create an exciting learning experience and a supportive socio-emotional learning environment, and take care of their needs and listen to them (Liu, 2021b). Moreover, the student can also

take care of their well-being by meditating, doing mindfulness practices (Koner & Weaver, 2021; Raschdorf et al., 2021), creating projects that explore their thoughts and emotions (Liu, 2021a), and using other ways to keep in touch with themselves and the environment.

Discussion

Music teachers and students had limited access to technology and a high-speed internet connection during the Covid-19 pandemic, and in this way, not everyone had equal opportunities to be involved in the teaching and learning process. That is consistent with reports provided by researchers in other fields. For example, in engineering education (Khan & Abid, 2021), there was a lack of internet access and limited resources. Medical students (Olum et al., 2020) faced problems with the quality of the internet connection, which in turn negatively affected their attitudes towards e-learning. Primary school teachers needed further training to improve their technology skills to teach literacy effectively in early primary grades (Dotan et al., 2021). English teachers, whose knowledge of digital tools was lower than expected, experienced technical difficulties that hindered their work. Teachers convince that they should learn the needed skills to use different technologies in remote teaching (Meirovitz et al., 2022).

Music teachers encountered difficulties in supporting students with special needs and disabilities. Other studies (Averett, 2021; Kotwal et al., 2022) that were not related to music education also found that children with disabilities were particularly vulnerable to the large-scale shock caused by the pandemic because many students with speech and hearing disabilities could not easily express feelings and emotions online.

Music teachers who work in general, vocational and high education systems did not always feel good during the pandemic due to increased workload and lack of balance between work and private life. That is confirmed by other studies (Beames et al., 2021; Cortés-Álvarez et al., 2022), which found that teachers' mental health was negatively affected by the pandemic, especially for teachers over the age of 45 who teach in preschool or primary school. Well-being is also negatively affected by the increased workload of physical education teachers (O 'Brien et al., 2022), and the growing demands and challenges of the teaching profession during a global pandemic may lead to a greater risk of burnout (Gicheva, 2021).

Conclusion

The first study question was to identify the teaching modes that are being studied in the context of music education during the Covid-19

pandemic and find out why music teachers use digital tools. The literature analysis shows that the most common concepts used in many studies were *online*, *remote* and *distance*, which indicates that these teaching modes were implemented to ensure the continuity of the music learning process during the pandemic. In addition, music teachers use different digital tools to stimulate students' creativity, support learning and assess progress. But to fulfil this, music teachers needed to develop themselves professionally due to epidemiological security measures and the transition of the education system to a remote learning process.

The second study question was to explore the challenges and benefits of the music teaching/learning process during the pandemic. Music teachers faced different challenges during the Covid-19 pandemic: learning organization, providing material and technical base, ensuring playing musical instruments, communication and offering support for students. However, despite the difficulties experienced by both music teachers and students, benefits were also mentioned in the literature explored. The Covid-19 pandemic provides opportunities to deal with uncertainty in an unexpected situation, incorporate technology into the learning process and focus more on individual music-making. In addition, music teachers are practising the student-centred approach more and more, thus ensuring student autonomy. During the pandemic, learning music had no constraints of time and space, and the way of receiving and sending material was much easier than learning face-to-face.

The third study question was to find out the common reasons for music teacher burnout and how to ensure the teacher's and student's well-being during the music teaching/learning process in the Covid-19 pandemic. It is concluded that the increased workload and the lack of control over equipment and performance had a significant impact on the well-being of the music teacher. However, researchers were more likely to provide recommendations to teachers on what to do to maintain well-being during the pandemic and less to discuss the specific situations that cause negative emotions. Achieving a good work-life balance, paying attention to how we feel and understanding the elements that lead to burnout help avoid negative emotions and provides a good feeling. Students can also take care of their well-being by consciously keeping in touch with themselves and the environment.

In further studies, it will be essential to determine whether the challenges facing the teaching and learning process of music have been overcome and the benefits gained during the pandemic have remained, as well as which digital tools supporting music education are being used in face-to-face learning.

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DESIGN THINKING: LOGIC OR CREATIVITY

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ABSTRACT

As an EU member state, Latvia has set high-quality education provision as a goal in all education cycles. An innovative project called SCHOOL 2030 (SCHOOL 2030) was launched in Latvia in 2016 and is working to introduce a competency-based approach that would promote a holistic view of school subjects. Within the project, a team of experts is working on a framework and content (methodologies, materials, etc.) for integrated learning, using a competency-based approach in specific sciences organized around seven thematic areas: languages; social and civic education; culture and arts, science, mathematics, technology, health and sport. This study is concerned with a new approach to problem-solving in Technology teacher education applying the design thinking approach as an innovative methodology. The aim of the research was to identify the interpretations of design thinking, the importance of the stages of the design process in the design thinking process and the achievement of the result, as well as the aspects of logic and creativity in design thinking. In the research process, bibliometry was conducted to gain the understanding of design thinking and its connection with logical and creative thinking. A survey as the research method was applied to explore the applicability and importance of design thinking in the study course Design and Technology. The survey questions were related to the understanding of design thinking, the process, its main stages and role in creative activity and development of design products.

The data obtained revealed that the design-thinking approach can be effectively incorporated into the Technology Education field to promote more purposeful problem-solving. Both logic and creativity are present within the application of the design-thinking approach.

Keywords: Creativity, Design Thinking, Design and Technology, Higher Education, Logic, Stages of Design Process, Teacher Education

Introduction

Design-thinking approach implementation and research on this issue are gaining more and more popularity. Furthermore, it is being implemented in all the education cycles due to to its relevance across many disciplines and within different education cycles. It is worth mentioning that design thinking process is integrated into different scientific and scholarly

disciplines and fields of study. Luka (2014) argues that this approach is both "human-centered and directed towards problem-solving. In addition, it fosters the development of twenty-first century skills and enhances creativity. Therefore, it promotes a capacity for innovation." She also emphasizes that "design-thinking approach is relevant in future teachers' education" (Luka, 2014).

The article reports the selected results of the mixed-method research conducted applying the Action Research (ongoing) and survey as the approaches to research design introducing the first stage (cycle) of the research, namely, the survey aimed at identifying the situation related to design-thinking approach implementation and the stakeholders' awareness of the methodology for implementing the respective approach. The data collection methods within the survey framework included the questionnaire ($n = 50$), the expert interview ($n = 3$), and the focus group discussion. The research sample for the questionnaire survey comprised 50 respondents. The data obtained revealed that, firstly, the approach is gaining the popularity among the professionals in Latvia; secondly, there is still a gap in the research and practice on design-thinking approach implementation in Latvia; thirdly, both the aspects of logic and creativity were acknowledged having the significance in the design-thinking process implementation.

Literature Review (Bibliometric Analysis)

The subchapter introduces the literature review identifying the key research issues and trends within practices of the design-thinking approach implementation. The theoretical literature review led to the identification of the up-to-date scholarly debates within the research scope and the clarification of the theoretical and methodological background for the implementation of the empirical research.

To explore the most topical research directions within the design-thinking approach implementation, the analysis of the sources in the Directory of Open Access Journals launched in 2003 containing over 16 500 peer-reviewed open access journals covering all areas of science, technology, medicine, social sciences, arts and humanities was performed. Bibliographic coupling and co-word analysis was performed based on the following criteria: title, abstract, author keywords, index keywords, full text (Emich et al. (2020). The sources with the keywords "design-thinking" were selected resulting in retrieving approximately 715 sources. Based on the research scope, the additional keywords "creativity" and "logic" were added revealing the availability of 67 and 5 published sources respectively. The research on design-thinking and creativity was published in the following journals: Sustainability (4); CLEI Electronic Journal (2); Creativity Studies (2); E3S Web of Conferences (2); MATEC Web of Conferences (2);

She Ji: The Journal of Design, Economics and Innovation (2); Systems (2); AIMS Neuroscience (1); Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis (1); Advances in Building Education (1); Agathón (1); Amfiteatru Economic (1); Ardeth (1); Artifact (1); Athens Journal of Business & Economics (1); BMC Medical Education (1); CERN IdeaSquare Journal of Experimental Innovation (1); Comunicar (1); Designs (1); Designs for Learning (1); Disertaciones (1); Frontiers in Psychology (1); Frontiers in Public Health (1); Frontiers of Architectural Research (1); Future Studies Research Journal: Trends and Strategies (1); ITM Web of Conferences (1); Iconarp International Journal of Architecture and Planning (1); InSitu: Revista Científica do Programa de Mestrado Profissional em Projeto, Produção e Gestão do Espaço Urbano (1); International Journal of Industrial Engineering and Production Research (1); International Journal of STEM Education (1); JADECS (Journal of Art, Design, Art Education and Culture Studies) (1); Journal of Architecture, Art & Humanistic Science (1); Journal of Education Culture and Society (1); Journal of Innovation Management (1); Journal of Innovation and Entrepreneurship (1); Journal of Mathematics Education at Teachers College (1); Journal of Medical Education and Curricular Development (1); Journal of Microbiology & Biology Education (1); Journal of Open Innovation: Technology, Market and Complexity (1); Journal of Vasyl Stefanyk Precarpathian National University (1); Knowledge Management & E-Learning: An International Journal (1); Organizacijų Vadyba: Sisteminiai Tyrimai (1); Proceedings (1); RAC: Revista de Administração Contemporânea (1); Raumforschung und Raumordnung (1); Review of Artistic Education (1); Revista Electrónica de Investigación Educativa (1); Revista Gestão e Desenvolvimento (1); Science Education International (1); Temporalités (1);The Journal of Health Design (1); The Southern African Journal of Entrepreneurship and Small Business Management (1); Vìsnik Unìversitetu ìmenì Al'freda Nobelâ: Serìâ Pedagogìka ì Psihologìâ (1); Westcliff International Journal of Applied Research (1); Архитектон (1); Питання культурології (1); Управление (1); теорія та практика дизайну (1). The research on the design-thinking and logics was published in Etikonomi (1); FORMakademisk (1); Journal of Innovation Management (1); She Ji: The Journal of Design, Economics and Innovation (1); Sustainability (1).

Based on the key words "design-thinking", 715 indexed articles were found. The sources related to the field of education comprised 108 indexed articles. As concerns the year of publication, the conclusion can be drawn that research on the design-thinking is gaining popularity. For instance, the sources published in 2011-2018 comprise 31 units in total, while the sources published since the year 2019 up to present already comprise 74 units.

Some studies are devoted to the systemic literature review focusing on the analysis of the data obtained in the case studies, reports, theoretical analyses, and other scholarly inquiries to deepen understanding of the goals, objectives, contexts, benefits and drawbacks of design thinking in education (e. g., Panke, 2019). The author focuses on the pedagogical opportunities of design thinking and its application in different subject areas through the analysis of the characteristics of design thinking that make it useful for education; the different education practices it can be applied to; tools, techniques and methods; the limitations or negative effects of design thinking (Ibid.). Kohls (2019) highlights the importance of the application of the design-thinking approach in higher education For instance, Kohls (2019) focuses on the necessity to create hybrid learning spaces with tools that support design thinking. Within the study, the design thinking is defined as "thinking in design" or "thinking with design." "Creating new forms is a way of thinking and reflecting about both the solution and the problem space" (Kohls, 2019). Jitaru (2019) highlights "the need to develop social and creative abilities that lead students to competence in design thinking. Successful response of the student to the demands of professional and social life requires skills like empathy, assertiveness, cooperation, problem solving, implementation of innovative solutions. Ability of design thinking involves a divergent thinking, ability to autonomously design their own strategies in relation to personal development needs, self-assertion and prosocial project development." Beligatamulla et al., (2019) explore the educator experience and sense-making of design thinking pedagogy in the higher education context. Design thinking has become a pedagogical phenomenon in higher education due to its widespread relevance across many disciplines. For instance, Beligatamulla et al. (2019) poses the questions on the guiding how educators in higher education make sense of design thinking pedagogy.

Many studies are devoted to case studies, for instance, application of design thinking in vocational schools (Krüger, 2019); design thinking frameworks in health professional education (McLaughlin, et al., 2019). The application of the design-thinking approach is gaining importance within all the education cycles including elementary school (e. g., Paracha, et al., 2019). Zuiker and Jordan (2019) introduce a case study of design thinking in education considering how two educational organizations—a university graduate program and a public zoo—develop and enact design thinking processes in relation to one another.

Many studies emphasize the aspect of creativity within the design-thinking process. Luka (2014) describes it as "the approach that originated in architecture, design and art, and nowadays is applied in many fields. It is in this context that this study describes a design thinking experience aimed

at designing an educational innovation project and uses a questionnaire to analyze 107 college students' perceptions of the process. The results show that the work teams were able to design innovative approaches to real problems they faced, becoming actively engaged in a shared search for solutions. This active methodology boosts students' confidence in their creative capacities and the development of empathic skills."

Research Methodology

Within this research stage, survey as the approach to research design was implemented. The convenience sampling strategy was applied. The research sample comprised 50 respondents affiliated with the social and professional group titled "Design and Technologies". Females represented the majority accounting for 45 respondents ($n = 45$), while males were represented by 5 respondents ($n = 5$). The gender distribution within the survey framework revealed the actual situation in Latvian schools as concerns the dominating position of females within the school environment, which is reiterated in numerous studies devoted to the respective area.
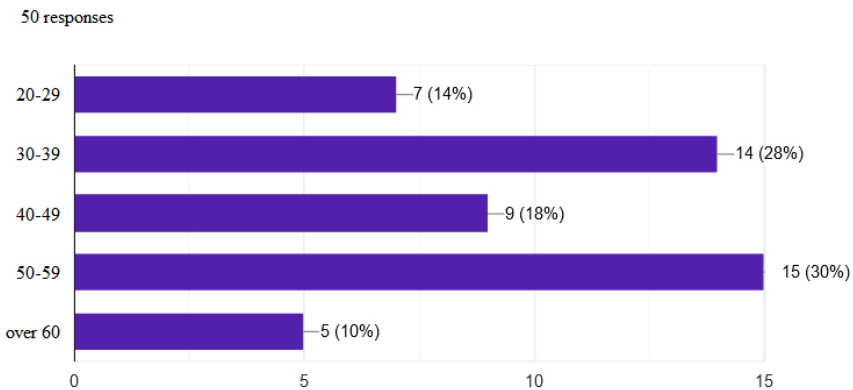
Please indicate your age

50 responses

Figure 1. Age of the Respondents

The age of the respondents is summarized within 10 years framework. The majority of the respondents are in the age range of 50–59 years ($n = 15$) or 30%, then 30–39 years ($n = 14$) respondents or 28%, 40–49 years ($n = 9$) or 18%, 20–29 years ($n = 7$) or 14% and over 60 years ($n = 5$) respondents or 10%.

Please indicate your occupation
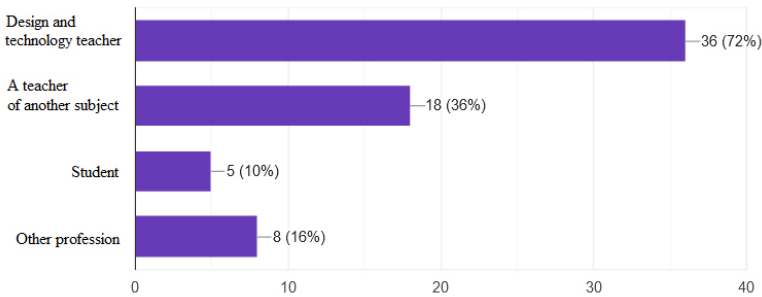50 responses

Figure 2. Occupation of the Respondents

As concerns the field of the teaching practice, teachers of the subject "Design and Technology" ($n = 36$) and teachers of other subjects ($n = 18$) mainly participated in the survey. Representatives of other professions were 8 respondents, while 5 respondents represented student population. Provided that in Latvia a teacher may have a qualification in one or more subjects, the teacher may teach another subject at school or be involved in the study process simultaneously with being the in-service teacher. Therefore, the conclusion can be drawn that the Design and Technology teacher has the experience and opportunities to form interdisciplinary links in the acquisition of the curriculum and design thinking is perceived more broadly than within only one subject – Design and Technology.

Summarizing the data obtained for the question: "What is design thinking?", four categories can be distinguished: 1) design thinking as a way of thinking; 2) design thinking is described as meaningful; 3) design thinking as a process; 4) design thinking as problem solving.

Within the first category, design thinking is distinguished as a way of thinking ($n = 20$), implying both sequential thinking ($n = 5$), creative thinking ($n = 7$) and problem solving ($n = 2$). Problem solving is based on the needs of the environment or people following the stages of the design process. The creative mindset is also seen as crucial in generating ideas and creating design products and solutions that are put into action.

The second category ($n = 17$) is characterized by the term "meaningful". By meaningfulness the structured and sequential process of design thinking is implied which is implemented in accordance with the steps of the design process, the planning of activities and the achievement of results in the creation of design products or in solving a problem and obtaining results. In addition, the design process is not linear; it can repeat a process step or skip it. Meaning is related to the aspects of sustainability: ecology, economics and viewing things holistically. At school, students understand

the process and the creation of products/solutions that make sense (are meaningful) for learning and the tasks to be performed ($n = 2$).

The third category of design thinking is the process ($n = 9$), as a result of which the desired result can be obtained ($n = 1$), the process in which the idea becomes reality ($n = 2$), the process has the opportunity for collaboration ($n = 1$). It is also the research on the process ($n = 1$). based on the data obtained for this research category, the conclusion can be drawn that the understanding and interpretation of design thinking as a process is very diverse.

The fourth category of design thinking is problem solving, which is mentioned only twice by individual respondents ($n = 2$). Problem solving is discussed more frequently in different combinations ($n = 5$). Problem solving, visual solution, more successful solution ($n = 1$), problem solving in a group ($n = 1$), development of ideas for problem solving ($n = 1$). One respondent interpreted design thinking as a method ($n = 1$) or a tool ($n = 1$) or as a new way of life ($n = 1$). It is challenging to separate categories such as a meaningful process and the end result.

The approach to the formation of design process stages may be different. It is determined by the result to be achieved – a new service, a new product or a new solution to a problem. Dividing the design process into stages makes it transparent and understandable, while different authors can change the design stages, elaborate them or even exclude some stage based on the goal to be achieved.

To better understand design thinking and its process, it is divided into stages. The 3-step process "I-I-I" is simple and understandable, revealing the main stages or steps of design thinking and the results to be achieved. These are *inspiration, ideation, implementation* (Solovjova, 2017).

In its turn, Skola2030 offers 7 stages of the design thinking process, which promote both the understanding of the design process and the achievement of results and the development of design products or solutions in the subject of design and technology in primary and secondary school. These 7 stages combine both design thinking goals and learning goals and objectives. The seven stages or steps of the process are: 1) identification of needs and opportunities; 2) search for ideas and choice of solution; 3) planning; 4) evelopment; 5) evaluation; 6) testing; 7) implementation (School 2030).

A design product is characterized by its functional or use value and artistic value. The design product must be easy to use and visually in line with the trends and style of the era and fashion.

In order to identify the differences in creating the functional (use value) and artistic value of a design product/solution, the respondents chose 3 process stages out of the 7 stages of the design process and ranked them based on the degree of importance ranging from 1 to 3.

The data obtained revealed that, according to the respondents' viewpoint, in order to create the functional ouse value of a design product or solution, the most important stages are: 1) identification of needs and opportunities; 2) testing and improvement; 3) development (To create the artistic value, the most crucial stages are: 1) identifying needs and opportunities 2) searching for ideas and choice of solution; 3) development.

Table 1. Stages of the Design Process in Creating Functional or Artistic Value of the Product

Degree of importance	Functional (use value)	Artistic value
1.	identification of needs and opportunities	identification of needs and opportunities
2.	testing and improvement	searching for ideas and choice of solution
3.	development	development

Based on the obtained data, the conclusion can be drawn that the most important step in the development of both a functional and an artistic design product/solution is the awareness of needs and opportunities. The second most important stages are different as concerns both the aspects. In order for a design product to be functional, its testing and improvement is important, while the successful search for ideas and selection of solutions can add artistic value. The third important step in the value creation of both design products is common – development. The second different stage of the design process indicates the difference in the characteristics of the design product and the creation of the most important functional or artistic values. The design value of a design product is acquired during the testing and development phase, but the search for ideas and the choice of a solution are important in the creation of artistic values. The third important stage is the development of the design product and it is common regardless of the value of the design product or solution. Therefore, the conclusion can be drawn that by logically following the stages of the design process or following the design thinking process, both functional and artistic value of the design product can be obtained.

Conclusions

Based on the data obtained within the research framework, the following conclusions can be drawn:
- The design-thinking approach is gaining popularity within all education cycles;

- There is no united interpretation of the design-thinking approach and its implementation;
- Logics and creativity are crucial components within the implementation of the design-thinking approach.
- The design-thinking approach makes up the basis for the meaningful problem solving introducing the steps towards the achievement of the planned result;
- The design-thinking framework provides the innovative solution for the implementation of the study course "Design and Technology";
- The logics and creativity components should be viewed holistically within the implementation of the approach.
- By logically following the stages of the design process or following the design thinking process, both functional and artistic value of the design product can be obtained.
- Further research should be aimed at the application of the data obtained within the survey framework within the Action Research being implemented as one of the research methods within the mixed-method research methodology.

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THE INFLUENCE OF FAMILY SOCIOECONOMIC STATUS ON STUDENTS' SELF-BELIEFS IN LARGE SCALE STUDIES

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ABSTRACT

The prolonged pandemic situation that left its damaging footprints not only in global economy but in many families, struggling with options to maintain their pre-pandemic income levels and social status, has raised the issue about the impact of family socioeconomic status (SES) on child's personality, especially self-beliefs. It has been previously studied that SES has a significant impact on child's academic achievement. Inherited social status has been the subject of studies for many years, and some researchers argue that it is rooted in the child's self-beliefs. The aim of this article is to examine the impact of family SES factors. The research question for this study is as follows: does family SES impact significantly primary school students' academic self-beliefs?

To evaluate the significance of factor impact, the authors used linear regression models where the dependent variable was students' self-beliefs, but family SES and students' achievement were the independent variables. The authors analysed the students' questionnaire data collected from such studies as the International Association's for the Evaluation of Educational Achievement (IEA) Progress in International Reading Literacy Study (PIRLS) 2016, Trends in International Mathematics and Science Study (TIMSS) 2019, International Civic and Citizenship Education Study (ICCS) 2016 and OECD Programme for International Student Assessment (PISA) 2018. In particular, the students' questionnaire data from countries around the Baltic Sea were explored.

The results of this study demonstrated a small but significant impact of family SES on the child's self-perception. If SES was analysed in linear regression models together with achievement, the models explained variations from 16–25% for academic self-concept in reading, 14–27% for academic self-concept in Mathematics, 3–13% for academic self-concept in Science of Grade 4 students, and 1–7% of variation for Grade 8 students' self-efficacy in citizenship, 10–18% of variation for 15 year old students' academic self-concept in reading, 2–7% for academic self-concept in finance, and 6–12% of 15 year old students' global self-efficacy.

Keywords: *large scale assessment, PISA, ICCS, TIMSS, PIRLS, academic self-perception, self-efficacy, academic self-concept.*

Introduction

Although it is widely discussed and in the Western culture well understood that public education should be equally accessible for every child regardless of his/her socioeconomic background, race, ethnicity, religion and other family factors, since 2016 the UNESCO global education reports alarm that children from lower socioeconomic backgrounds worldwide would more likely not attend school or fail to finish primary education more often than children from economically advanced families (UNESCO, 2016; UNESCO, 2017). Although the society support for public (i. e., a state or local government provided) education is strong, the UNESCO acknowledges that it is not for free (every kind of education requires some resources from family to be invested), and there are variety of reasons why increasing number of parents decide to educate their children at private institutions (UNESCO, 2021). As education equity being one of the goals of sustainable development in Education 2030 Declaration (UNESCO, 2015), the Organisation for Economic Co-operation and Development (OECD) Programme for International Student Assessment (PISA) defines educational equity as ability for all students to obtain similar levels of academic performance, non-cognitive skills and social-emotional well-being including self-confidence despite of their socioeconomical background (OECD, 2018). Meanwhile, the Covid-19 pandemic has left its footprints not only in global economies, but in family budgets as well, making parents to struggle to maintain their pre-pandemic income levels; and in schools making educators to struggle for getting children back to regular school settings. While performance-based factors like student's/school's academic achievement will prevail as measurement of educational quality and efficacy, the debate about family SES will be relevant.

Socioeconomic status

There are several definitions of socioeconomic status (SES) or social class but simplifying them one can say that the SES is a position (stratified or perceived) of one's (individuals or groups) wealth (material and non-material), prestige and power (APA, 2007; Diemer et al., 2013; APA, 2018; Rice University, 2021). SES includes resources (material and non-material, and time) that one has access to (Cowan et al., 2012). The scale of measuring socioeconomic status differs from study to study (Powers, 2021), but for educational studies it is recommended to include "the big 3" (Cowan et al., 2012): 1) parental education (converted in the International Standard Classification of Education (ISCED) levels), 2) parental occupation (classified in International Standard Classification of Occupations (ISCO-08) and then converted in International Socioeconomic Index of Occupational

Status (ISEI) as described by Ganzeboom, 2010), and 3) indicators of family possessions from which the number of the printed books at home are very widely used (when searching Google Scholar with key words "«socioeconomic» OR «socio economic» status «books at home» school achievement", more than 2500 articles were found issued in last four years). Despite critique of the validity of these scales (Engzell, 2021), American Psychological Association (APA, 2007) states that these three indicators provide different dimensions of possible social stratification. Some studies include the number of family members and family income levels, but some studies (e. g. OECD PISA) use ESCS (Index of Economic, Social and Cultural Status) instead of "three item SES", as this index allows to analyse SES with "gradient approach" (APA, 2007) and includes description of more resources an individual has access to in comparison with just an educational level and occupation (Aavisati, 2020).

International large scale comparative studies use both student's and school's SES in order to explain the variation of learning outcomes such as achievement (Mullis et al., 2017; Mullis et al., 2020; Hoskins et al., 2021; Finch & Finch, 2022). Association for the Evaluation of Educational Achievement (IEA) analyses SES as opportunity (Broer et al., 2019), i. e., students with lower SES backgrounds have less opportunities than those from higher SES backgrounds, thus introducing the term "gap". Due to SES, the gap in achievement has been well studied in international large-scale assessments and documented as significant (Eriksson et al., 2021; Mullis et al., 2017; Mullis et al. 2020; OECD, 2020) and increasing (Harwell et al., 2017; Chmielewski, 2019), although the increase in SES gaps can be explained with expanding accessibility for education of those society groups that have been outside education. APA Task Force on Socioeconomic Factor (APA, 2007) states that SES determines human functioning lifelong. Besides, there exists studies that associate SES with quality of life inherited from parents (Krapohl & Plomin, 2016) and by the age of 15 the economical gap has already developed (Filippin & Paccagnella, 2011). Nonetheless, Kim and colleagues (2019) argue in their meta-analysis study that SES has a significant impact not only on educational achievement but on educational attainment as such. Letourneau and colleagues (2013) and Korous and Causadias (2022) have come to conclusion that family SES has a small but significant impact on child's development when excluding a combination of such factors as individual, family or community. Meanwhile, the number of studies that describe family SES relationships with child's academic self-beliefs in particular are significantly lower, some of them are conducted recently (OECD, 2015; Chevalere et al., 2022) but some are fairly old (Trowbridge, 1972). The findings of these two studies contradict each other; however, both emphasize the necessity to do more

research as the relationship between SES and self-beliefs are not yet unambiguously explained.

Academic self-beliefs

The concept of self-belief is broadly used and explained in various domains across psychology and other social sciences. One can find self-belief defined in the context of self-perception (Haasi & Laursen, 2015) or in the context of student agency (Jääskelä et al., 2017), others define this term as self-concept (Marsh & Craven, 2006), self-efficacy (Bandura, 2001), self-esteem (Branden, 2011) or confidence (Stankov et al., 2012). Some researchers have tried to distinguish the difference between them all (Leary et al., 2013), but mostly all scholars state that these self-beliefs can either strengthen or weaken development, academic choices and lifelong learning.

Likewise, the studies about SES and academic achievement relationships, there are many studies about students' academic self-beliefs and achievement (Marsh & Craven, 2006; Valentine et al., 2004), which state that these concepts have reciprocal effects.

Research motivation

The aim of this article is to examine the impact of family SES factors. The research question for this study is as follows: does family SES impact significantly primary school students' academic self-beliefs?

Methodology

In order to get more detailed view of the children's self-beliefs and the impact of family SES during primary school years, the data from four studies have been analysed. Two studies were conducted at the 4th grade (IEA PIRLS-2016, IEA TIMSS-2019), one study examined 8th graders (IEA ICCS-2016) and one – 15-year-olds[1] (OECD PISA-2018).

The PIRLS stands for "The Progress in International Reading Literacy Study" it takes place every five years, and its primary purpose is to measures 4th grade student reading achievement. The TIMSS stands for "The Trends in International Mathematics and Science Study", it takes place every four years, and its primary purpose is to measure 4th grade and 8th grade student achievement in Mathematics and Science. In Latvia, this study in 2019 was conducted only at the 4th grade and for the purpose of this study, only 4th grade students were examined. The ICCS stands for "The International Civic and

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[1]   By 15-year-olds in OECD PISA study and in this paper the authors mean students who are enrolled in school and have completed at least 6 years of formal education and are between the age of 15 years 3 months and 16 years 2 months at the time of the PISA assessment (OECD, 2018).

money or for a formal wage" and "Has a small business, works on own account or works for a family business (includes subsistence farming)" (1 point), "Clerical worker, service or sales worker, skilled agricultural or fishery worker, craft or trade worker, plant or machine operator" (2 points), "Professional, manager, technician or associated professional" (3 points); number of home study supports: having none of them (1 point), having either own room or internet connection (2 points), having both – own room and internet connection (3 points).

Having summarized the points, we created home environment scale with 16 gradations (from 3 to 18 points), which we divided into three categories:

Low level of home resources for learning – from 3 till 7 points, which means that a child has up to 25 children's books at home, at least one of the parents has finished upper secondary education and at least one of the parents works as a clerk, etc.; and the student has either his/her own room or an internet connection at home;

Average level of home resources for learning – from 8 till 12 points, which means that a child has up to 100 children's books at home, at least one of the parents has finished post-secondary education but has not completed university studies; and at least one of the parents works as a professional, manager, technician or associated professional; the student has his/her own room and an internet connection at home;

High level of home resources for learning – from 13 till 18 points, which means that there are more than 100 children's books at home, at least one of the child's parents has a higher (university) education and works as a professional, manager, technician or associated professional; and the student has his/her own room and an internet connection at home.

The ICCS-2016 and PISA-2018 studies had only student questionnaire and data about family SES was gathered by asking students about their home possessions. In both studies the National Educational Possession Scale (HOMEPOS) was created. The scales had different names (in PISA-2018 study it was HOMEPOS, and in ICCS-2016 study it was HOMELIT), but the same content – home resources that allow to conclude on the family SES. For this research we used home environment scales that were provided by the studies (IEA and OECD).

To measure civic knowledge of 8th grade students in ICCS-2016 study, Latvia, Lithuania, Finland, Denmark, Sweden, and the Russian

pay, general labourer, or semi-professional" (1 point), "Clerical" (2 points), "Small business owner" (3 points), "Professional" (4 points).

2) Student questionnaire questions:
  • About how many books are there in your home?
  • Do you have any of these things at your home?

For the purpose of the scale all options were summarized and coded as follows: number of books at home: 0–10 (1 point), 11–25 (2 points), 26–100 (3 points), 101–200 (4 points), 201 or more (5 points); number of home study supports: "None" (0 points), "Your own room" or " Internet connection" (1 point), "Your own room" and " Internet connection" (2 points).

The scales were continuous, and the Cronbach's Alpha Reliability Coefficient values for the countries of comparison varied between 0.63 to 0.72 for TIMSS-2019 and from 0.64 to 0.74 for PIRLS-2016.

In ICCS-2016 the SES scale was called "National Index of Students' Socioeconomic Background", it was constructed from three other scales for students' questionnaire:
  • Highest occupational status of parents – constructed from a question "What is your father's/mother's or <male/female guardian>'s main <job>?"
  • Highest educational level of parents – constructed from a question "What is the highest level of education completed by your father/ mother or <male/female guardian>?"
  • The number of books at home – constructed from a question "About how many books are there in your home?"

For the purpose of the scale all options were coded as follows: highest occupational status of parents: coded according to ISEI – ISCO-08 scale corresponding values; highest educational level of parents: "ISCED level 6, 7 or 8" (4 points), "ISCED level 4 or 5" (3 points), "ISCED level 3" (2 points), "ISCED level 2" (1 point), he/she did not complete "ISCED level 2" (0 points); the number of books at home: 0–10 (0 points), 11–25 (1 point), 26–100 (2 points), 101–200 (3 points), 201 and more (4 points).

The scale was continuous and the Cronbach's Alpha Reliability Coefficient values for the countries of comparison varied between 0.7 and 0.84, with ICCS-2016 average value of 0.81.

In PISA-2018 the family SES scale was composed from three indices – highest parental education (none, ISCED levels from 1 to 5 (including A and B separately)), highest parental occupation (like in ICCS-2016, coded in ISEI – ISCO-08 scale corresponding values), and home and cultural possessions. The scale was called "Index of Economic, Social and Cultural Status". The Home and Cultural Possessions Index was composed from three questions in students' questionnaire:

- "Which of the following are in your home?" with 16 dichotomously coded options.
- "How many of these are there at your home?" with 8 options measured in amount of "None", "One", "Two", "Three or more".
- "How many books are there in your home?", with options: 0–10 books (1 point), 11–25 (2 points), 26–100 (3 points), 101–200 (4 points), 201–500 (5 points), 501 or more (6 points).

The scale was continuous, and the Cronbach's Alpha Reliability Coefficient values were from 0.59–0.69.

Self-belief measurement scales

In PIRLS-2016 study, the students' self-beliefs in the reading literacy were measured by Students Confident in Reading Scale. The scale was composed from a question "How well do you read? Tell how much you agree with each of these statements?" of the students' questionnaire. The statements were as follows:

- I usually do well in reading
- Reading is easy for me
- I have trouble reading stories with difficult words (Reverse coded)
- Reading is harder for me than for many of my classmates (Reverse coded)
- Reading is harder for me than any other subject (Reverse coded)
- I am just not good at reading (Reverse coded)

All statements were measured in the Likert-type scale where "Agree a lot" got 1 point, "Agree a little" – 2 points, "Disagree a little" – 3 points and "Disagree a lot" – 4 points. If the statement was reverse coded, then "Agree a lot" got 4 points and "Disagree a lot" – 1 point respectively.

Both scales were continuous, the Cronbach's Alpha Reliability Coefficient values were from 0.79 to 0.83.

In TIMSS-2019 study, the students' self-beliefs in the Mathematics/ Science were measured by Students Confident in Mathematics/Science Scales. These scales were composed from a question "How much do you agree with these statements about <Mathematics/Science>?" followed by these statements:

- I usually do well in <Mathematics/Science>
- <Mathematics/Science> is more difficult for me than for many of my classmates (Reverse coded)
- <Mathematics/Science> is not one of my strengths (Reverse coded)
- I learn things quickly in <Mathematics/Science>
- My teacher tells me I am good at <Mathematics/Science>
- <Mathematics/Science> is harder for me than any other subject (Reverse coded)

- < Mathematics/Science > makes me confused (Reverse coded)
- I am good at working out difficult Mathematics problems
- Mathematics makes me nervous (Reverse coded)

All statements were measured in the Likert-type scale where "Agree a lot" got 1 point, "Agree a little" – 2 points, "Disagree a little" – 3 points and "Disagree a lot" – 4 points. If the statement was reverse coded, then "Agree a lot" got 4 points and "Disagree a lot" – 1 point respectively.

Both scales were continuous, and the Cronbach's Alpha Reliability Coefficient values for countries of comparison were from 0.86 to 0.9 for Mathematics and from 0.8 to 0.86 for Science.

In the ICCS-2016 students' self-beliefs were measured with "Students' Sense of Citizenship Self-Efficacy" Scale that was constructed from a question "How well do you think you would do the following activities?" and the following statements:

- "Discuss a newspaper article about a conflict between countries."
- "Argue your point of view about a controversial political or social issue."
- "Stand as a candidate in a school election."
- "Organise a group of students in order to achieve changes at school."
- "Follow a television debate about a controversial issue."
- "Write a letter or email to a newspaper giving your view on a current issue."
- "Speak in front of your class about a social or political issue."

All statements were measured in the Likert-type scale where "Very well" got 4 points, "Fairly well" – 3 points, "Not very well" – 2 points, and "Not well at all" – 1 point.

Both scales were continuous, and the Cronbach's Alpha Reliability Coefficient values for countries of comparison were from 0.82 to 0.87.

PISA-2018 measures students' self-beliefs in reading with "Self-Concept of Reading: Perception of Competence" Scale, financial matters with "Confidence in Dealing with Money Matters" Scale and global competence using "Self-Efficacy Regarding Global Issues" Scale.

"Self-Concept of Reading: Perception of Competence" Scale was built from the following three statements in the students' questionnaire:

- "I am a good reader."
- "I am able to understand difficult texts."
- "I read fluently."

All statements were measured in the Likert-type scale where "Not at all" got 1 point, "Very little" – 2 points, "To some extent" – 3 points, and "A lot" – 4 points.

"Confidence in Dealing with Money Matters" Scale was built from a question "How confident would you feel about doing the following things?" that was followed by statements:
• Making a money transfer;
• Filling in forms at the bank;
• Understanding bank statements;
• Understanding a sales contract;
• Keeping track of my account balance;
• Planning my spending with consideration of my current financial situation.

All statements were measured in the Likert-type scale where "Not at all confident" got 1 point, "Not very confident" – 2 points, "Confident" – 3 points, and "Very confident" – 4 points.

"Self-Efficacy Regarding Global Issues" Scale was built from a question "How easy do you think it would be for you to perform the following tasks on your own?", followed by statements:
• "Explain how carbon-dioxide emissions affect global climate change."
• "Establish a connection between prices of textiles and working conditions in the countries of production."
• "Discuss the different reasons why people become refugees."
• "Explain why some countries suffer from more global climate change than others."
• "Discuss the consequences of economic development on the environment."

All statements were measured in the Likert-type scale where "I couldn't do this" got 1 point, "I would struggle to do this on my own" – 2 points, "I could do this with a bit of effort" – 3 points, and "I could do this easily" – 4 points.

Achievement

The achievement value in corresponding discipline was used as a reference value, i. e., TIMSS-2019 achievement in Mathematics/Science, PIRLS-2016 achievement in reading literacy, ICCS-2016 achievement in civic knowledge, PISA-2018 achievement in reading literacy, achievement in financial matters, and achievement in global competence.

The sample

The sample from the population for all studies was selected with two-stage stratified sampling design. Both studies in the first stage sampled schools with target grade/age students. IEA in the second stage sampled one to two classes from the sampled school with random sampling method and equal probability for every class, whereas OECD PISA sampled 42 students

from the sampled school whose age corresponded to the required age with a random sampling method and equal probability for every student. If the school did not have 42 students, all students were sampled. If the school had less than 20 students, the school had to be replaced. The study design predicted that student age and gender were approximately equally distributed.

The total PIRLS-2016 sample size was 34'352 4th grade students, TIMSS-2019 sample size was 32'485 4th grade students, ICCS-2016 sample size was 28'286 8th grade students, and PISA-2018 sample size was 44'682 15-year-old students. Although the precise number of participants was different in every study and country, all calculations were done with student weighting, and the results of this study are applicable to the population.

Results

As each study has its own sample and SES measurement scales, the authors of this article studied each sample with each measures separately. First, authors analysed the correlation between each SES item and students' academic self-beliefs. The authors found that from all analysed items the ones that were included in the SES measurement scale showed the best correlation and there was no need to create new scales and add other factors or remove any factors from the existing scales that were provided by the conductor of the chosen study. Second, the authors ran the null model of liner regression analysis with academic self-beliefs as a dependent variable and students' SES as an independent variable. The analysis showed that SES had a small but significant impact on academic self-beliefs and that SES was linearly related with student's achievement. Linear regression coefficients were higher for lower primary school children than for upper primary school children. The SES impacted more students' academic self-beliefs in reading and Mathematics than in other domains.

With reference to the introduction of the paper, the theory discusses that SES and academic self-beliefs are often related to achievement, and self-beliefs are even reciprocal in nature. Aiming to analyse how this model would change, if the academic achievement would be added, the authors complemented the model with the achievement of the relevant field. The results from the supplemented model can be seen in Table 1.

Table 1. Linear Regression Coefficients of Regression Equations Representing How Students' Self-Beliefs in Five Studies Are Affected by the SES and the Achievement

Study	Factors	Latvia	Denmark	Finland	Germany	Lithuania	Poland	Russian Federation	Sweden
P2016	Home Resources for Learning	0.08	0.02*	0.05	0.06	0.05	0.07	0.16	0.04
	Achievement in Reading	0.38	0.49	0.40	0.37	0.44	0.38	0.35	0.39
T2019 Maths	Home Resources for Learning	–0.03*	0.00*	0.00*	0.04*	–0.06	0.03*	0.04*	–0.02*
	Achievement in Mathematics	0.52	0.48	0.43	0.46	0.52	0.44	0.37	0.38
T2019 Science	Home Resources for Learning	0.02*	0.02*	0.07	0.1	0.07	0.06	0.11	0.06
	Achievement in Science	0.19	0.26	0.17	0.30	0.21	0.21	0.15	0.16
ICCS-2016	National Index of Socioeconomic Background	0.09	0.13	0.14	0.08	0.10	*N/A*	0.06	0.07
	Achievement	0.06	0.16	0.19	0.20	0.04*	*N/A*	–0.07	0.17
PISA-2018 Reading	Index of Economic. Social and Cultural Status	0.11	0.05	0.07	0.05	0.07	0.09	*N/A*	0.08
	Achievement in Reading	0.35	0.36	0.4	0.35	0.29	0.37	*N/A*	0.31
PISA-2018 Finance	Index of Economic. Social and Cultural Status	0.05	*N/A*	0.05	*N/A*	0.05	0.04	0.08	*N/A*
	Achievement in Finances	0.18	*N/A*	0.11	*N/A*	0.12	0.18	0.16	*N/A*
PISA-2018 Global	Index of Economic. Social and Cultural Status	0.17	*N/A*	*N/A*	*N/A*	0.19	*N/A*	0.16	*N/A*
	Achievement in Global Competence	0.25	*N/A*	*N/A*	*N/A*	0.16	*N/A*	0.16	*N/A*

* not significant, $p > 0.05$

As one can see in Table 1, both the achievement and SES are linearly related to academic self-beliefs. When looking at each study separately, the achievement has a more significant impact on academic self-beliefs than the SES. Comparing with the null model, it can be stated that in some cases the SES lost its significance in the model, mainly in academic self-concept in Mathematics, when it was analysed together with achievement. The authors of this article suggest that the students' academic self-concept in reading in PIRLS-2016 in Denmark, the students' self-concept in Mathematics for all countries, and the students' self-concept in Science in Latvia and Denmark indicate stronger intercorrelations of SES with achievement than for other countries of comparison. The only country and study where the achievement was not significant in the model was ICCS-2016 in Lithuania, but it was negatively regressed for the Russian Federation. This finding should be analysed in detail in further studies.

In order to evaluate the explained variance in the Coefficients of Determination (R^2) for the linear regression, models are summarised in Table 2.

Table 2. Coefficients of Determination (R^2) of the Linear Regression Equations Displayed in Table 1

Study / Country	PIRLS-2016	TIMSS-2019 Mathematics	TIMSS-2019 Science	ICCS-2016	PISA-2018 Reading	PISA-2018 Finances	PISA-2018 Global competence
Denmark	0.25	0.23	0.07	0.06	0.15	N/A	N/A
Finland	0.18	0.18	0.04	0.07	0.18	0.02	N/A
Germany	0.16	0.23	0.13	0.07	0.14	N/A	N/A
Latvia	0.18	0.27	0.04	0.06	0.15	0.04	0.12
Lithuania	0.22	0.24	0.07	0.02	0.10	0.02	0.08
Poland	0.17	0.20	0.06	0.01	0.17	0.04	N/A
Russian Federation	0.20	0.15	0.04	0.01	N/A	0.04	0.06
Sweden	0.17	0.14	0.04	0.04	0.12	N/A	N/A

As it can be seen in Table 2, the total explained variance is very diverse between studies and countries. The model explains a larger amount of variance for lower primary students and for reading literacy and Mathematics than for Science, financial, global and citizenship efficacy. One can argue that the model explains better the variance in the self-beliefs sub-domain, i. e. academic self-concept rather than self-efficacy. The model

explains the largest variance in academic self-concept in reading literacy at lower primary age (PIRLS-2016 study) for students in Denmark, followed by Lithuania and the Russian Federation. The variance in academic self-beliefs in Mathematics is best explained in Latvia, followed by Lithuania, Denmark and Poland. The third most explained variance is academic self-concept in reading literacy in the PISA-2018 study for Finland, followed by Poland, Latvia and Denmark. In the previous study (Kampmane & Ozola, 2021), the authors discovered that academic self-concept in Science correlated stronger with students liking to learn it (on average 0.64 points) than with achievement (on average 0.22 points), and this might be the reason why the model, where there are students' SES and achievement, explains less variance for academic self-concept in Science for younger students than in Mathematics and reading literacy.

As the PISA-2018 questionnaire for measuring self-efficacy in global competence contained questions that required extensive knowledge and even broad experience, the influence of SES and achievement was understandable, whereas the authors of this research were surprised by the results of self-efficacy in financial matters. In the authors' opinion this item should be directly related to the SES as for disadvantaged SES students banking and private accounting could be less affordable than for the advanced ones.

As it can be seen in Table 2, the variance in self-efficacy in citizenship is explained the least for all countries. There have been studies that try to explain the low results in civic achievement in the Baltic countries (Cekse & Alksnis, 2021), but the results show a very weak relationship between the achievement and factors analysed, that is why the authors of this study suggest conducting more studies in the future to try to explain self-efficacy in citizenship, exploring other explanatory factors than the SES and achievement of students.

Conclusions

This study aimed to analyse the impact a student has on his/her academic self-beliefs from such a family background factor as socioeconomic status. SES is linearly related to students' academic self-beliefs. As it is seen in Table 2, the lower grade students' achievement and SES explain a larger part of the variance of academic self-beliefs than it is for older students. The study contributes to the studies that differentiate self-efficacy from academic self-concept. Table 2 shows that the academic achievement together with SES explain a smaller part of the variance of self-beliefs if these self-beliefs are measured in the scale of self-efficacy. If self-beliefs are measured in the scale of academic self-concept, the SES and achievement explain the larger part of the variance of self-beliefs for both Grade

4 students (approximately 14–27%) and 15-year-old students (10–18%). The model summarized in Table 2 explains also the larger variance in such domains as reading literacy and Mathematics than Science. The authors of this article argue that it could be because of academic self-concept relationships with academic achievement, i. e., it has been previously studied that in TIMSS-2019 Science academic self-concept is more linearly related to the fact that students like learning Science than with achievement itself.

The results from ICCS-2016 and PISA-2018 self-efficacy in financial matters opens the door for a need to do in-depth research to enlarge the explained variance in students' self-beliefs. Although the results of linear regression analysis are very diverse between studies and countries, the result of this study shows that SES has a small but significant impact on students' academic self-beliefs, thus this study confirms the findings from different studies mentioned before, where a huge impact of SES on achievement and self-beliefs were doubted.

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THEORETICAL INSIGHTS AND PARENTS' VIEWS ABOUT FAMILY-SCHOOL COLLABORATION FOR CHARACTER EDUCATION IN LATVIA

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ABSTRACT

This article presents a mixed-method study aimed at identifying preconditions of effective family-school partnerships for implementing character education at school. The research questions were: 'What do parents think about the existence and quality of family-school collaboration for character education in Latvian schools? Which are the most/least common family-school relationship models and strategies for promoting effective family-school partnerships to implement character education at school in Latvia?' The theoretical background of the study provided a brief overview of existing theoretical (conceptual and processual) models of family-school relationships and parental involvement, and identified different strategies facilitating parental involvement and family-school collaboration in meaningful and effective ways. Parents' viewpoints (N = 461) were collected in 2019-2020 from all five regions of Latvia through an online questionnaire containing closed and open questions. Most parents believed that collaboration with the school for character education was good and fairly regular. The most commonly used family-school relationship model for character education was the curriculum enrichment model, where teachers and parents enhance mutual communication for improving the curriculum and providing a more family-friendly school climate. The least common model was the protective model, where parents are perceived as non-partners and outsiders. Improving two-sided family-school communication was instrumental for promoting effective partnerships.

Keywords: character education, family-school relationship models, family-school partnership, parental involvement and engagement

Introduction

Family-school collaboration and effective parental involvement are crucial elements of successful education (Baker & Soden, 1997; Barge & Loges, 2003; Daniela et al., 2021; Deslandes, 2019; Đurišić & Bunijevac, 2017; Dusi, 2012; Jaiswal, 2017; Johnson et al., 2004; Hoover-Dempsey et al., 2005, 2010; Larocque et al., 2011). In the Covid-19 pandemic

context, when the entire education system worldwide switched to remote learning, parents became key educational agents and needed collaboration with the school to support their children's learning (Daniela et al., 2021). According to the Sustainable development strategy of Latvia until 2030 (Saeima of the Republic of Latvia, 2010), the school as the centre of social networking should facilitate parental involvement in the study process; therefore, school leaders and teachers "should form a close link with parents of pupils" using different methods such as arranging parental rooms at school, organising courses and meetings for parents, etc. (ibid., p. 37).

While a lot of researchers and practitioners support this policy direction for increased parental involvement, little consensus exists about what is effective parental involvement (Baker & Soden, 1997), and the research in the field of parent involvement should "be strengthened by both a more consistent conceptualisation of parent involvement and its measurement at the empirical level" (ibid., p. 13). Family-school collaboration includes financial, emotional, motivational, instrumental, and also moral dimensions. Effective partnerships are based on an attitude of mutual trust and respect, and of shared responsibility for the education of children and young people at the school (The Family-School and Community Partnerships Bureau, 2008).

The philosophical background of this paper lays on virtue ethics, even if it can be argued that virtue ethics may be complemented with other approaches to moral growth in order to account for the richness of the persons' moral development (e. g., Scalzo et al., 2022). In a virtue ethics approach, character is defined as "a set of personal traits or dispositions that produce specific moral emotions, inform motivation and guide conduct", and "character education includes all explicit and implicit educational activities that help young people develop positive personal strengths called virtues" (The Jubilee Centre, 2017, p. 2; for an introduction about the key ideas, practices and concepts that are shaping character education in schools today, see Watts et al., 2021).

In the field of pupils' moral education in Latvia, parental involvement at school is a topical and controversial issue. On the one side, parents can request explanations from teachers and school leaders regarding the materials or methods used for pupils' virtue education, which should be carried out in cooperation with parents (Cabinet of Ministers Guidelines for Pupils' Moral Education, 2016, point 8.2). On the other side, a number of teachers and school leaders believe that parents should not have such rights to question the educational materials chosen by the school. Those debates are often guided by different ideological positions and historical experiences, but there is not yet a sound scientific study regarding how

family-school collaboration happens and how educational actors, in particular families, understand what a fruitful relationship with the school for their children's moral development would look like.

In this context, the goal of this research was to explore the scientific literature regarding theoretical (conceptual and processual) models and strategies for family-school collaboration; and to investigate the current status of family-school collaboration for character education, and the preconditions of effective family-school partnerships for implementing character education at school in Latvia.

Theoretical framework

The concepts of parental involvement (school-directed) and parental engagement (parent-directed) in schooling are multidimensional (Campbell et al., 2016; Deslandes, 2019; Jaiswal, 2017; Larocque et al., 2011). These concepts address family-school collaboration and include financial, emotional, motivational and instrumental support, as well as parent-child-teacher interactions and communication in at least two contexts: at home (e. g., guiding, discussing, helping, encouraging, monitoring of schoolwork, teaching children to develop positive attitudes and pro-school behaviours); and at school (e. g., volunteering, attending workshops, meetings, conferences, sharing expertise through guest speaking, participating in the decision-making process). Barge and Loges (2003) identified some helpful forms of parental involvement and engagement based on opinions of students (e. g., helping with homework), teachers (e. g., involving in child's school life, supporting school upbringing measures), and parents (e. g., cultivating relationships with teachers, monitoring student's academic progress).

In this section, the existing theoretical models of family-school collaboration will be presented first, and then the practical strategies promoting family-school collaboration and recent research about family-school collaboration for character education will be addressed.

Models of family-school collaboration

Multiple theoretical (conceptual and processual) models of family-school relationships and parental involvement are identified, analysed and/or described in research (Auerbach, 2010; Campbell et al., 2016; Cunningham & Davis, 1985; Dale, 1996; Deslandes, 2019; Hoover-Dempsey et al., 2005; Hornby, 2011; Lueder, 2000; Swap, 1993). Those models are defined by different sets of assumptions regarding the goals of, and strategies and approaches for, establishing a family-school relationship, and the understanding of teachers' and parents' roles (see Figure 1).
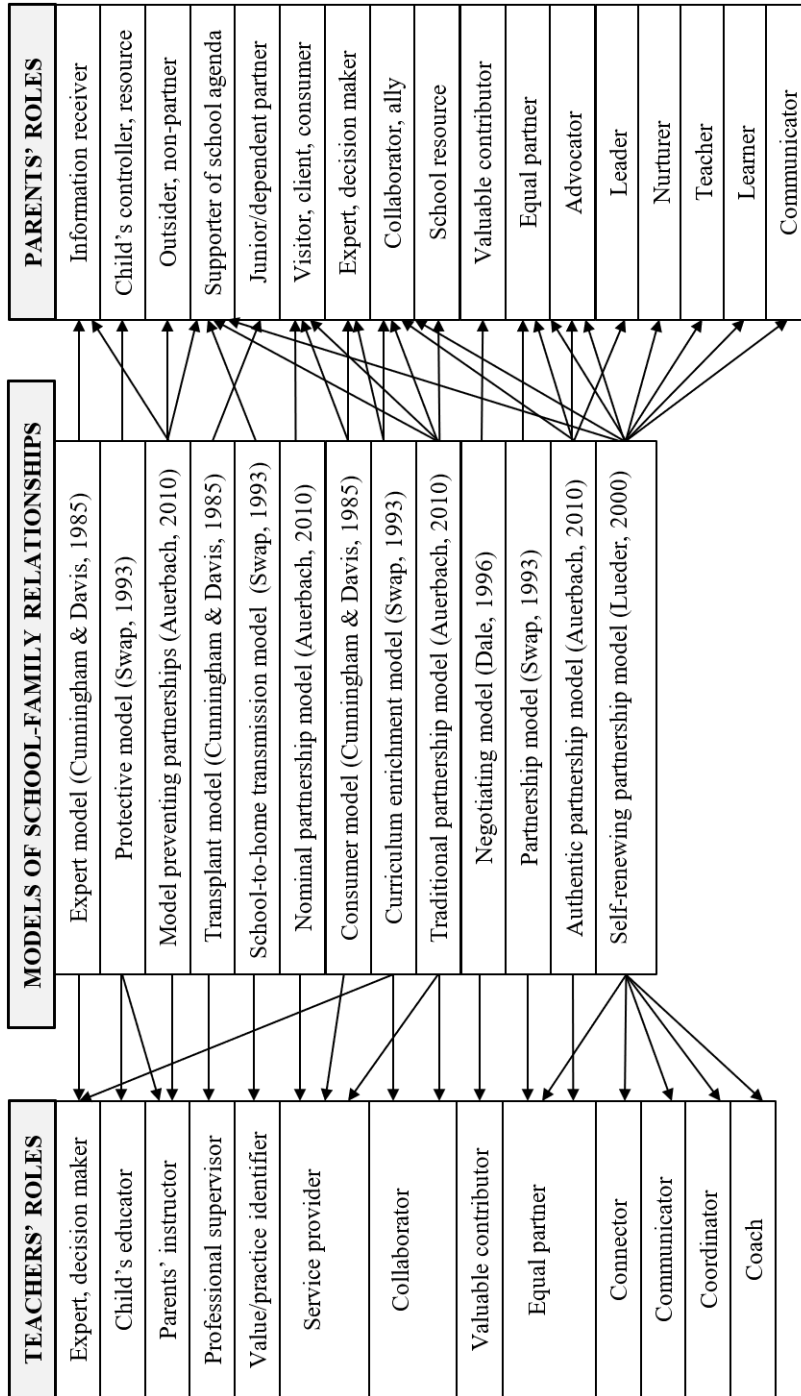
Figure 1. Models of relationships between school and family: Parents' and teachers' roles (developed by the authors)

These models of parental involvement at school range from those that attempt to avoid or to minimize parental involvement ('Parents as outsiders and intruders', 'Parents as visitors, clients') to those that actively support and facilitate it ('Parents as supporters, resources', 'Parents as allies, leaders'). For instance, Cunningham and Davis (1985) explored different models (i. e., the 'teacher-expert', 'transplant' and 'parent-consumer') in reference to teachers' professional understanding of the nature of relationships with families and their "behaviour, which is partly determined by the way professionals view their role in relation to parents" (p. 10). Lueder (2000) proposed a powerful conceptual framework for creating true partnerships between family and school: the 'self-renewing partnership model', which is based on the concepts of 'energy-in' (i. e., acknowledging and integrating in the partnership the parents' roles as nurturers, communicators, teachers, learners, supporters, advocates, and collaborators for supporting their children and schools), and 'energy-out' (i. e., involving schools to support families using strategies for connecting, communicating, coordinating and coaching families).

Swap (1993) draws important distinctions regarding how different approaches hinder or promote full family-school partnership (i. e., the protective model, the school-to-home transmission model, the curriculum enrichment model, and the partnership model). Swap's set of models (1993) is in line with Auerbach's proposed continuum (2010) for understanding various approaches to leadership for creating school-family partnerships (i. e., preventive, nominal, traditional and authentic). Because of their conceptual clarity, Swap's and Auerbach's models were used as a lens for analysing parents' views (see Table 3, codes 1–4).

Strategies for promoting family-school collaboration

Effective family-school partnerships are multi-level, complex social realities (Dusi, 2012), which imply establishing collaborative relationships and organising activities which involve school staff, parents, and other family members (The Family-School and Community Partnerships Bureau, 2008). This family-school collaboration includes "both an attitude and an activity in which student interest is at the centre of concern" and "refers to family responsibilities and the school's role in updating parents' participation in school monitoring" (Deslandes, 2019, p. 12).

A number of contributions for identifying the strategies that promote parental involvement and facilitate family-school collaboration in a more appropriate, meaningful, and effective way have been put forward (Auerbach, 2010; Epstein et al., 2002; Jaiswal, 2017; Johnson et al., 2004; Hoover-Dempsey et al., 2005; Hornby, 2011; Larocque et al., 2011; Smit et al., 2007; Tett & Macleod, 2020; The Family-School and Community Partnerships Bureau, 2008, 2018).
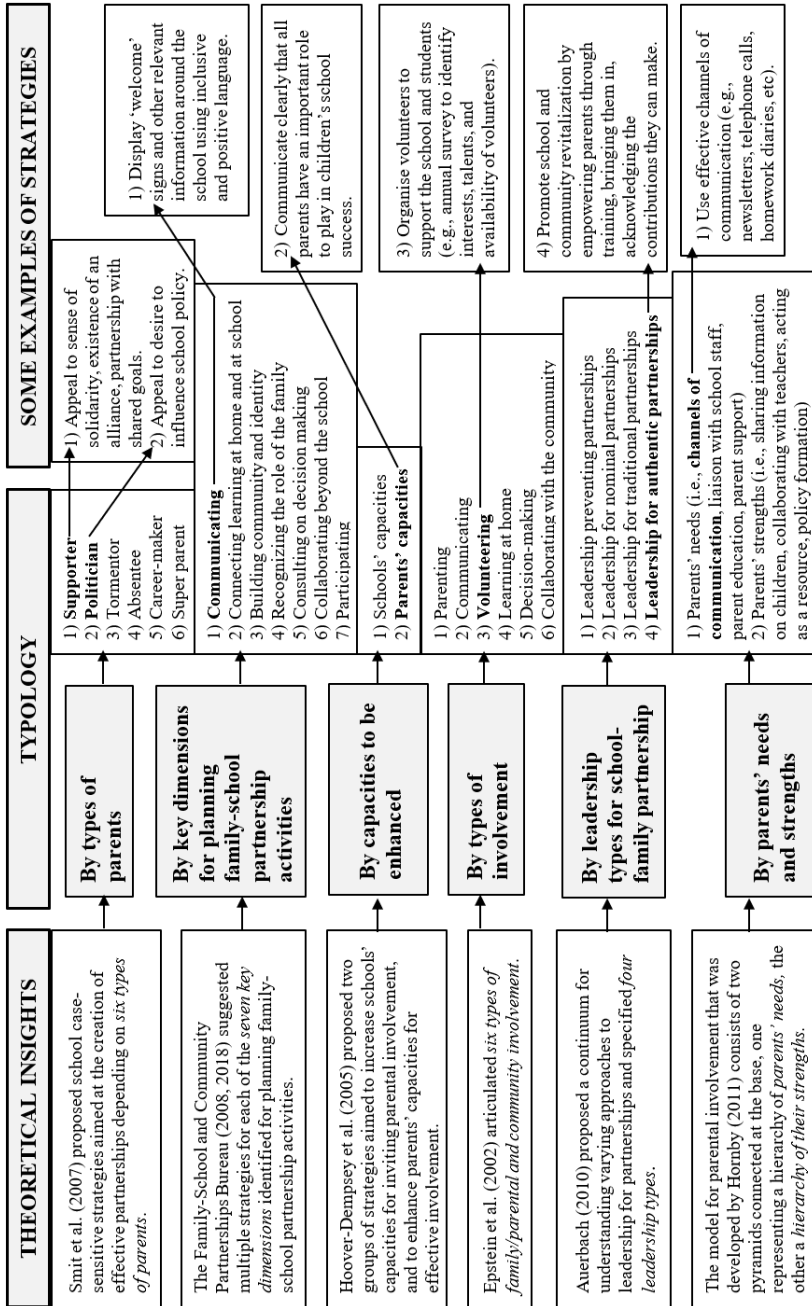
THEORETICAL INSIGHTS

Smit et al. (2007) proposed school case-sensitive strategies aimed at the creation of effective partnerships depending on *six types of parents*.

The Family-School and Community Partnerships Bureau (2008, 2018) suggested multiple strategies for each of the *seven key dimensions* identified for planning family-school partnership activities.

Hoover-Dempsey et al. (2005) proposed two groups of strategies aimed to increase schools' capacities for inviting parental involvement, and to enhance parents' capacities for effective involvement.

Epstein et al. (2002) articulated *six types of family/parental and community involvement*.

Auerbach (2010) proposed a continuum for understanding varying approaches to leadership for partnerships and specified *four leadership types*.

The model for parental involvement that was developed by Hornby (2011) consists of two pyramids connected at the base, one representing a hierarchy of *parents' needs*, the other a *hierarchy of their strengths*.

TYPOLOGY

By types of parents

By key dimensions for planning family-school partnership activities

By capacities to be enhanced

By types of involvement

By leadership types for school-family partnership

By parents' needs and strengths

Typology details:

1) **Supporter**
2) **Politician**
3) Tormentor
4) Absentee
5) Career-maker
6) Super parent

1) **Communicating**
2) Connecting learning at home and at school
3) Building community and identity
4) Recognizing the role of the family
5) Consulting on decision making
6) Collaborating beyond the school
7) Participating

1) Schools' capacities
2) **Parents' capacities**

1) Parenting
2) Communicating
3) **Volunteering**
4) Learning at home
5) Decision-making
6) Collaborating with the community

1) Leadership preventing partnerships
2) Leadership for nominal partnerships
3) Leadership for traditional partnerships
4) **Leadership for authentic partnerships**

1) Parents' needs (i.e., **channels of communication**, liaison with school staff, parent education, parent support)
2) Parents' strengths (i.e., sharing information on children, collaborating with teachers, acting as a resource, policy formation)

SOME EXAMPLES OF STRATEGIES

1) Appeal to sense of solidarity, existence of an alliance, partnership with shared goals.
2) Appeal to desire to influence school policy.

1) Display 'welcome' signs and other relevant information around the school using inclusive and positive language.

2) Communicate clearly that all parents have an important role to play in children's school success.

3) Organise volunteers to support the school and students (e.g., annual survey to identify interests, talents, and availability of volunteers).

4) Promote school and community revitalization by empowering parents through training, bringing them in, acknowledging the contributions they can make.

1) Use effective channels of communication (e.g., newsletters, telephone calls, homework diaries, etc).

Figure 2. A typology of strategies aimed at the creation of effective partnerships between school and family (developed by the authors)

Researchers have described those strategies using different sets of criteria (see a typology in Figure 2), such as the types of parents involved (Smit et al., 2007), the key dimensions of partnership activities (Family-School and Community Partnerships Bureau, 2008, 2018), the capacities to be enhanced in parents and at school (Hoover-Dempsey et al., 2005), the types of family/parental and community involvement (Epstein et al., 2002), the types of leadership in school-family partnerships (Auerbach, 2010), and the hierarchisation of parental needs and of their strengths or possible contributions (Hornby, 2011). However, there is no generally accepted model of parental involvement and participation in contemporary school system (Đurišić & Bunijevac, 2017). In this research, Epstein et al. (2002) types of parental involvement, namely, parenting, communicating, volunteering, learning at home, decision-making and collaborating with the community, were used as a lens for analysing parents' views (see Table 3, codes 5–10).

Family-school collaboration for character education

In the field of character education, which is "not a slogan or a course but a mission that is embedded in the everyday school life" (Agboola & Tsai, 2012, p. 168), including online education (Harrison et al., 2022), it is necessary to create effective partnerships between school and family/ community to encourage students to acquire good virtues and manifest good values in their lives (Agboola & Tsai, 2012; Berkowitz & Bier, 2006; Berkowitz et al., 2008, 2017; Epstein et al., 2002). Whilst parents are the primary educators of their children's character, including in online settings (Harrison, 2021), "empirical research tells us that parents want all adults who have contact with their children to contribute to such education, especially their children's teachers" (The Jubilee Centre, 2017, p. 1). A poll conducted in UK in 2017 (Parent-Teacher Association, 2017) showed that teachers believe parental engagement has many positive effects in children character, including improved behaviour (59%) and developing a shared school ethos (53%).

According to Berkowitz and Bier (2006), active family and/or community involvement in character education is a common strategy which "includes parents as consumers (i. e., offering training to parents) and parents and community as partners (i. e., including them in the design and delivery of the character education initiative)" (p. 19).

In this sense, Epstein et al. (2002) proposed some strategies for improving students' behaviour and character working with families:

1. Parenting: Parent-to-parent group meetings on student behaviour, age-appropriate discipline, and related topics.

2. Communicating: Student-of-the-month assembly, bulletin board, and luncheon with family partners to recognize students for good or improved behaviour, character, and citizenship.

3. Volunteering: Volunteers for school patrols in hallways, in the cafeteria, on the playground, or in other locations to increase or maintain students' good behaviour.

4. Learning at home: Monthly interactive homework assignments for students to talk with parents or other family partners about selected character traits, values, and behaviours.

5. Decision-making: Sponsored speaker series for parents on student development, with mental health, medical, and other specialists.

6. Collaborating with the community: Community connections with students on problem-solving and conflict resolution skills to reduce bullying and other problem behaviours (p. 192).

However, in spite of this theoretical awareness, "educators often lament the fact that the academic and character lessons from school are not reinforced at home", and it seems that "parent training is a common element in character education that can address this concern" (Berkowitz & Bier, 2006, p. 8).

Recently, several efforts have been done in this direction. The character education evaluation handbook for schools (Harrison et al., 2015) provides guidance and tools for schools' self-evaluation to improve their character education provision, contains a set of criteria for assessing parental involvement in the character education project (under the section 'Whole school community') according to four levels (namely, focusing, developing, establishing, and enhancing), with descriptors of achievement for each level, ranging from parents' awareness of the school's ethos and key character virtues (focusing level) and supporting the school efforts at home (developing), to parents' modelling the school virtues themselves (establishing), and engaging in further development of the school provision for character education (enhancing). Key assessment questions address the channels for parental information (newsletters, e-mails) and the help the school provides to parents (parenting programs).

In the United States, the '11 Principles of Effective Character Education' elaborated by the association Character.org[1], which are intended to support schools in establishing a comprehensive character development initiative, explicitly include parental involvement in their principle No 10: 'The school engages families and community as partners in the character initiative':

> Schools of character involve families. Parents are encouraged to reinforce the school's core values at home. School leaders regularly

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[1] https://www.character.org/11-principles-framework

update families about character-inspired goals and activities (via newsletters, emails, family nights, parent workshops, the school website, and parent conferences). To build greater trust between home and school, school leaders reach out and encourage parents and family members to be involved in the work of the school's Character Committee.

The awareness of the importance of parental involvement in character education is also reflected in research. For example, the Goodman's Strengths and Difficulties questionnaire – SDQ (www.sdqinfo.org), in addition to a self-report questionnaire about character strengths for children, includes a version of the questionnaire for parents (to complete on behalf of a young person) to be triangulated with pupils' self-reports. Practitioners are also contributing to parental involvement in character education. For example, the guide 'The families as partners'[2], created in the frame of the Lions Quest programs 'Skills for Growing' (for early learners through Grade 5) and 'Skills for Adolescence' (for Grades 6–8), provides information and resources to lead parent meetings and enhancing parental involvement in this character education program; and the Jubilee Centre for Character and Virtues has also produced a number of activities for discussing virtues with children at home[3] in ways that relate to their lives, helping them to talk and think about how they feel, as well as how they act in relation to moral situations and emotions. Recently, a multifactorial model of family-school partnership for character education, based on the analysis of factors influencing family-school collaboration and preconditions for effective partnerships for character education, has been put forward (Surikova & Fernández González, in press).

In the Law of Education of the Republic of Latvia (Saeima of the Republic of Latvia, 1997), the school-family collaboration in pupils' education is addressed quiet formally. School should inform parents about school truancy (No 14, 35), and parents should be in majority in the School Council (No 31, 1.2), which is leaded by a parent (No 31, 2). They also have the right 'to give and receive information about issues related to children moral and academic education' (No 57, 4). The modalities of family-school collaboration in the field of moral education is described more concretely in the Cabinet of Ministers Guidelines for Pupils' Moral Education (2016): pupils' moral education shall be performed in cooperation with pupils' parents (or legal caregivers) and their family (No 8.2). In addition, parents (or caregivers) have the right to ask the teacher a reasoned explanation (justification) regarding the appropriateness of the information, educational tool,

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2   https://www.lions-quest.org/wp-content/uploads/2020/08/Families-as-Partners.pdf

3   https://www.jubileecentre.ac.uk/1777/character-education/parent-resources

materials, or methods used (No 21) and, if the explanation does not satisfy them, they have the right to refer to the head of the educational institution with a justified request to evaluate the information into question. The head of the educational institution, independently or in co-operation with other teachers or with the School Council, shall evaluate the request and take a decision (No 22). Parents (caregivers) also have the right to directly address the School Council about these issues (No 23). In this case, the School Council takes a recommendatory decision by a majority and submits it to the head of the educational institution, who takes the final decision.

However, the Soviet heritage in character education (Kestere & Fernández González, 2021) can still be felt in Latvia. During Communist character education, it was commonly accepted that "the ideology-driven political and moral upbringing at school […] should be concentrated in the hands of the principal" (Klēģeris, 1962, p. 59). After the falling of Soviet Union, school directors' formal authority increased, and the school's role as a place for pupils' moral upbringing was reinforced (Fernández-González, 2020; Surikova & Fernández-González, 2021). Among teachers, a tendency to consider themselves as experts who look with some mistrust at parental involvement in school settings, can still be perceived. The school role in moral education is also reinforced by a social context, in which more than half of children live in broken families and where many parents are too busy earning money due to the low wages.

This historical, cultural, and legislative background makes even more urgent the empiric exploration of the current status of family-school collaboration for character education and the preconditions of effective family-school partnerships for implementing character education at school in Latvia. To address this research goal, the following research questions were put forward: What do parents think about the existence and quality of family-school collaboration for character education at Latvian schools? Which are the most/least common family-school relationship models and strategies for promoting effective family-school partnerships to implement character education at school in Latvia?

To address these research questions, this empirical study focusses on parents' voices, recognising the convenience of including parents in character education research, given parents' unique perspectives regarding their children's character growth (Fernández González & Surikova, 2022).

Methodology

Research tool, sampling and data collection

An online questionnaire was used for collecting data including both open and closed-ended questions to obtain qualitative and quantitative

data. The questionnaire was administrated online in two steps: 1) from March to May 2018 – to 190 respondents in Riga city, the capital of Latvia, within the Erasmus+ project 'Arete Catalyst'; and 2) from June till November 2018 – to 271 respondents from all Latvian regions within the first stage of the postdoctoral research 'Arete-school' (Fernández-González, 2019). Respondents were approached through regional educational authorities, family associations and personal contacts. Overall, 461 parents participated in this research. Regarding the demographics, respondents were between 27 and 71 years old ($M = 40.95$, $SD = 6.25$). The majority of participants (88.9%) were females. All five planning regions of Latvia were represented as follows: 41.4% from Riga city and Riga region, 17.4% from Latgale, 13.7% from Kurzeme, 8.5% from Vidzeme and 19.1% from Zemgale.

Data processing and analysis methods

The respondents were asked if the school collaborated with them for shaping children's character (Question Q-1. Options – Yes/No). And then, according to their answer, an open question asked them to share their good experiences or expectations in the field, respectively (Q-2) (see Table 1).

Table 1. Qualitative and quantitative data processing and analysis methods

Question formulation	Data processing and analysis methods
Q-1: Does the school collaborate with you as parents in the field of shaping your children's character? Please choose one option: A or B!	Crosstabs statistics, Chi-square test of independence, Z-test & Bonferroni method.
Q-2: [if A: Rather yes, collaboration is good and fairly regular in this field]. Can you share your good experience? Please describe it! [if B: Rather no, collaboration does not take place or is very rare in this field]. What else do you expect from school in this field? Please share your suggestions for better collaboration!	Open coding, thematic analysis, code frequency analysis

The quantitative data (Question Q-1) processing and analysis was performed using IBM SPSS Statistics software. Crosstabulation was used to display a breakdown of the quantitative data, to create contingency tables, which describe the interaction between two nominal variables. Via Crosstabs, Chi-square test of independence was performed to determine if there was a significant relationship between two categorical variables, Z-test was employed to compare column proportions and Bonferroni method was used to adjust the significance values. The qualitative data (open-ended

question) were processed and analysed using NVivo software, applying thematic analysis with pre-set coding scheme. In total, textual data of 4657 words were analysed to identify segments of meaning; and each segment of meaning was referenced under a code. The pre-set codebook consisted of 10 codes based on Swap's (1993) and Auerbach's (2010) family-school partnership models (Table 3, codes 1–4) and on Epstein's et al. (2002) parental involvement strategies (Table 3, codes 5–10).

Results

What do parents think about the existence and quality of a family-school collaboration for character education at Latvian schools?

Answering to the Question Q-1, 64.1% of parents confirmed that the school collaborated with them, and they thought that collaboration was good and fairly regular in this field. The association between planning region and parents' beliefs regarding school collaboration in the field of shaping children's character was statistically significant, $X2$ (4, $N = 298$) = 23.524, $p = .000$. Positive collaboration was mentioned more often by parents from Latgale and Zemgale and less often – from Riga and Vidzeme (see Table 2).

Table 2. Parents' opinion regarding school-family collaboration in the field of shaping children's character (by planning regions)

			Planning regions					Total
			Riga	Latgale	Kur-zeme	Vid-zeme	Zem-gale	
Does the school collaborate with you as parents in the field of shaping your children's character?	Rather yes	Count	66_a	40_b	$25_{a,b}$	13_a	47_b	191
		%	51.6%	83.3%	67.6%	52.0%	78.3%	64.1%
	Rather no	Count	62_a	8_b	$12_{a,b}$	12_a	13_b	107
		%	48.4%	16.7%	32.4%	48.0%	21.7%	35.9%
Total			128	48	37	25	60	298

Note. Z-test & Bonferroni method were employed via Crosstabs to compare column proportions and to adjust p-values. Each subscript letter denotes a subset of planning region categories whose column proportions do not differ significantly from each other at the .05 level.

Table 3. Models and strategies for promoting effective family-school partnerships for character education in Latvia: Parents' views

Thematic block	Code	Within parents' positive experience	Within parents' negative or missing experience	Example quotes
		Count of references		
The family-school relationship models	1. The protective model // the model preventing partnerships	0	7	The school doesn't want it, unfortunately. The teacher is stubbornly doing her own thing, not considering what parents think. Contact has vanished and arbitrariness has taken over.
	2. The school-to-home transmission model // the nominal partnership model	19	6	The teacher pays attention to each situation, discussing it separately with the child and, if necessary, involving the parents.
	3. The curriculum enrichment model // the traditional partnership model	29	0	Regular feedback from the school on the child's school life; topics on character development relevant to the child's age are raised in class parent meetings.
	4. The partnership model // the authentic partnership model	19	0	The school is oriented towards cooperation with parents. The school has identified values, has worked with parents to define them, and is now putting them into practice in a variety of ways.
Strategies aimed at promoting effective family-school partnerships	5. Parenting	1	N/A	However, I believe that it is also my commitment and responsibility as a parent whether my child takes learning seriously and responsibly.
	6. Communicating	72	N/A	Feedback from teachers is not limited to grades; we can also agree together on solutions to other challenges and receive both support and guidance.
	7. Volunteering	3	N/A	Parents are regularly involved and take part in the organisation of various events.
	8. Learning at home	5	N/A	Children must complete a growth journal together with their parents, including character growth.
	9. Decision-making	9	N/A	Support staff help. Our school has an excellent social pedagogue who helps, clarifies difficult situations and works with both children and parents.
	10. Collaborating with the community	0	N/A	Parents' days, meetings and educational events are held to discuss topical issues and problems.

Note. N/A – strategies aimed at promoting effective family-school partnerships were not analysed within parents' negative or missing experience.

Which are the most/least common family-school relationship models and strategies for promoting effective family-school partnerships to implement character education at school in Latvia?

The summary of the thematic analysis employed using deductive (i. e., pre-set scheme) approach to coding is presented in Table 3. The most common family-school relationship model to implement character education at school in Latvia was the curriculum enrichment model (Swap, 1993) and/ or the traditional partnership model (Auerbach, 2010). According to those models, teachers and parents (as experts and supporters of school agenda) work together to enrich the curriculum, to raise student achievements improving family–school communication and providing a more family-friendly school climate.

The least common family-school relationship model to implement character education at school in Latvia was the protective model (Swap, 1993) and/or the model preventing partnerships (Auerbach, 2010), where parents are perceived as non-partners, outsiders and intruders. In the good experiences shared by the respondents, the most common strategy aimed at promoting effective family-school partnerships was 'Communicating' (e. g., from school to home and from home to school about school curriculum and children's developmental progress).

Conclusions

Based on a study of theoretical models of family-school partnerships and on a typology of existing strategies making them effective, this research shed light on how family-school collaboration for character education happens in Latvia and how families understand what a fruitful relationship with the school for the moral development of their children would be. The main conclusions are as follows:

- Most parents believed that collaboration with the school for character education was moderately good and fairly regular, in particular in the South and East regions of Latvia.
- The most commonly used family-school relationship models are the curriculum enrichment model and/or the traditional partnership model. Those models are practical and short-term oriented: they stress regular teachers' feedback on the child's school life and the discussion in class parent meetings of character development topics relevant to the child's age, rather than a joint identification/definition of the values to be promoted in the long-term.
- The protective model was the least common one. Most of parents do not perceive themselves as non-partners and outsiders at school.

- Parents believed that improving two-sided family-school communication (e. g., informing parents about school life and children's problems and achievements, identifying and resolving problems, giving an advice/counsel during teacher-parent individual conversations and consultations) was highly instrumental for promoting effective partnerships.

These conclusions could serve as strong bases for a constructive social dialogue about family-school collaboration for pupils' moral education in Latvian schools.

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PROMOTION OF LISTENING SKILLS IN PRESCHOOL CHILDREN WITH PHONOLOGICAL INSUFFICIENCY

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ABSTRACT

This article is devoted to identifying the possibilities of promoting the development of listening skills in preschool children with phonological insufficiency. Underdeveloped listening skills and phonological insufficiency have a negative impact on speech development and language acquisition. During life, in interpersonal communication, people engage in four types of linguistic activity: listening, speaking, reading and writing. Listening is considered the most important skill, as it is through listening that an individual acquires most of their information and knowledge, including understanding the pronunciations of speech sounds, learning to distinguish them by hearing, and acquiring an understanding of words, sentences and texts. Children learn to perceive, comprehend and respond to hearing information by providing oral or written answers.

The aim of this study is to theoretically investigate and practically evaluate the possibilities of promoting listening skills in children with phonetic-phonemic deficiencies.

Methodology: The research was carried out using a literature review and speech therapy sessions to improve listening skills in preschool children with phonological insufficiency.

Results: 42 children aged 5–6 years with phonological insufficiency were involved in the study. The study was conducted in speech therapy sessions over a period of three months. Initial and repeated assessments of listening skills were carried out. The evaluation criteria were based on speech therapy and educational theories. The repeated assessment of listening skills showed dynamic growth in all children included in the study.

Keywords: *listening, listening skills, phonological insufficiency, preschool, children, speech therapy*

Introduction

Humans are social beings with a desire to communicate, and communicative interaction with other members of society is an important aspect of a child's development. Communication is based on specific knowledge and skills that are subject to the generally accepted principles of language (Tūbele, 2019). Fully developed speech and a successfully learned language

are the 'keys' to success in later life. A precondition for successful communication is the ability to use the four types of linguistic activity in mutual communication: listening, speaking, reading and writing (Alzamil, 2021; Miltiņa & Skribanovska, 2019).

In Latvia, curriculum studies in all phases of education are based on the competence approach, i. e. learning by immersion, understanding of interrelationships and the ability to transfer acquired knowledge to new and unfamiliar situations. School 2030 [Skola 2030] documents and the preschool curriculum (Miesniece, n. d.) have developed methodological recommendations for teachers to implement curriculum content and approaches (Namsone & Oliņa, n. d.; Oliņa & Rolanda, n. d.) as well as clearly defined and achievable linguistic objectives for three content units: communication in context, text and text environments, and language structure. Each of these content areas is important in the development of speech and language acquisition, but one of the most important core linguistic skills is the ability to listen (Imhof, 2001; Nation & Newton, 2009; Yavuz & Celik, 2017). Through this skill, much of one's information and knowledge is acquired.

In most children aged 4–7 years, speech development is adequate for development in accordance with the rules of speech. However, there are children whose speech is affected by speech sound pronunciation deficiencies or mixing and replacing of sounds, and speech therapy is necessary in these cases because children are not able to correct these mistakes independently (Brosseau-Lapréa & Roepkea, 2019; Hempenstall, 2016; McLeod, 2015; Tūbele & Lūse, 2012). Children have underdeveloped phonemic processes, i. e. it is difficult for them to perform activities such as distinguishing between different speech sounds (e. g., [S] – [Z]), recognising and identifying correctly and incorrectly pronounced words in a word line or reversing the rhythm of non-linguistic and/or speech sounds they hear (Dodd, 2011; Emelyushkina, 2015; McLeod, 2015). In the pedagogical process, including in speech therapy sessions, we often encounter situations where children ask us to repeat information again, saying 'I don't remember' or 'I didn't hear'. This may be a sign that their listening skills are underdeveloped.

Methodology

This study is based on a review and analysis of the theoretical literature, which allow us to reveal the problem and establish the relevance of the study. A review of the theoretical literature substantiates the importance of thoroughly developed listening skills in the speech development and language acquisition of preschool children. Furthermore, a practical study on improving listening skills in preschool children with phonological

insufficiency was carried out. Criteria, indicators and assessment levels for listening skill assessments were established by the research author. The study included 42 children aged 5–6 years old who were diagnosed with phonological insufficiency.

Results

Listening is the perception of different sounds and noises through hearing and is seen as a skill that can be learned and developed throughout life (Lūse et al., 2020). The primary linguistic skill (or receptive function) is listening, which ensures the perception, comprehension and interpretation of incoming (heard) information (Bransford et al., 2000; Brown, 2004; Imhof, 2001; Keyton, 2011; Saricoban, 1999).

Listening means receiving, processing and interpreting the information one hears. Listening is an active perception of information through hearing and preparedness to respond to it with understanding (Hendrawaty, 2019). Analysing Brown's (2004) explanation, it can be said that listening is an individual's oral or written response to information heard and that the response given reflects the accuracy of the listening skill. Brown points out that listening is a complex cognitive process that requires the individual to concentrate and think. Nation and Newton (2009) take a similar view, explaining that listening is a natural precursor to speech and... successive stages of language acquisition depend on listening.

Researchers such as Skujiņa (2008, p. 44) explain that listening is a speech activity (one of the language skills) in which the purposeful perception of information takes place through hearing. Meanwhile, Dzintere et al. (2014, p. 49) state that listening is the basis of language development.

"Listening is a process of perceiving information: information is received, decoded, comprehended and interpreted" (Anspoka, 2008, 141). This author's explanation shows that fully developed listening is important for an individual to be able to react to heard information when communicating with others as well as to be able to talk about their own experiences and feelings. Lanza and Flahiva (2008) also state that listening is an integral part of children's speech development and language acquisition as well as their social and academic development. Brown (2004) points out that listening skills are at the core of qualitative oral skills but that listening skills are often undervalued in comparison to speaking. A similar view is expressed by Sadiku (2015), who suggests that listening is a linguistic necessity: the more skilled the listener, the better the quality and success of their participation in communication.

Fully developed listening skills are a precondition for a correct perception and interpretation of the information heard. That is, the receiver (listener)

must focus on the content of what the giver (speaker) is saying and must contextually be able to distinguish and recognise the words they hear. Listening skills are essential in the learning process, as they allow for the acquisition of new information and provide the speaker with the feedback that the information has been heard and understood (Anderson & Pamela, 1986; Aytan, 2016; Tyagi, 2013; Walberg, 2004). Listening is a complex, interactive exchange between the information provider, the information receiver and the spoken text. This means that, to respond to information, the recipient must be able to perceive, listen attentively to and understand the content of the information.

The findings of the authors mentioned suggest that listening is the most important attribute in communication between individuals and is equivalent to the skill of speaking. When listening skills are underdeveloped, the message conveyed in a communication may be inaccurately perceived or misunderstood, which can have a negative impact on mutual communication as a whole.

From an early age, a children hear many different sounds and noises around them and unconsciously and gradually learns different levels of language – phonetics, morphology, vocabulary and syntax. The levels of language acquisition are subject to a certain hierarchy; each higher level builds on the sequentially lower one (Lūse et al., 2020, p. 349; Schulhauser, 2001; Quamili, 2015). This explanation is consistent with the view of Richards and Rodgers (2001) that listening skills are important in the language learning process.

Similarly, the insights of these authors suggest that listening and speaking go hand in hand. That is, the recipient of information, having correctly interpreted the information heard, is able to engage in mutual communication by expressing their thoughts and opinions about what they have heard, whereas if the information heard has been incorrectly interpreted, it is necessary to find out why this has happened.

Most children, in typical development, reach the norm in speech development and language acquisition at the age of 4–5 years (Markus, 2003), but there are children who, due to individual developmental characteristics, show incomplete speech development, which may manifest as phonetic-phonemic insufficiency (Briscoe et al., 2001). If phonological insufficiency is not corrected in time, its manifestations will be noticeable in both spoken and written communication and/or reading as sound omission, blending and substitution (Laua, 1997; Miltiņa, 2005, 2017; Tūbele, 2019).

Phonological insufficiency is caused by functional neurodynamic deficiencies in the function of speech analysers; the child's physical hearing development is normal and there are no organic defects in the organ structure of the articulatory apparatus, but there is a functional insufficiency of

the speech hearing and speech motor analysers (Dalva et al., 2017; Ferraz et al., 2015; Miltiņa, 2005; Murphy et al., 2015). This means that children often speak but do not understand the sounds they have just pronounced because they do not analyse them. In isolation, the child pronounces all the sounds of their native language correctly, but they confuse the sounds when saying a word. For example, the child does not hear or understand the difference between the words 'big' and 'pig'.

One of the causes of phonetic-phonemic deficiency is underdeveloped hearing. However, not only anatomical hearing but also speech hearing must be fully developed, so it is important to focus on developing and improving speech hearing from an early age. Speech hearing provides the 'material' necessary for phonemic perception, and its development is linked to an individual's own phonetic pronunciation of speech sounds since a person primarily receives impressions of the sounds of speech from their sensory organs (Carroll et al., 2003; Tūbele & Lūse, 2004). Speech perception development goes through several stages: responding to the intonation of speech (when the speaker addresses them), listening to the pace and rhythm of speech and learning to distinguish words by their sound structures. The development and improvement of speech hearing is directed towards the ability to perceive the nuances of the sounds of speech: the accuracy of sound pronunciation, the clear pronunciation of words, changes in the timbre of the voice and speeding up or slowing down the pace of speech (Filitcheva, 2019; Kasyanova et al., 2014; Okuneva, 2017).

Every language has its own phonemic system that is characterised by a particular set of phonemic features. This means that there are sounds in the language that possess the distinguishing features of each word's meaning. For example, for vowels, their phonemic nature is manifested in the changes in their lengths; for consonants, the distinguishing features of the meanings of words appear in oppositions: voiced–voiceless, soft–hard, etc. (Markus, 2012; Miltiņa, 2005; Tūbele, 2008). In the Latvian language system, the most frequently replaced consonants are those whose pronunciations are similar in the manner of articulation but different in the position of articulation (e. g. [K] → [T]; [Š] → [S]), consonants whose pronunciation is similar by the position of their articulation but different in the manner of their articulation (e. g. [S] → [T]; [Dz] → [Z]), consonants whose pronunciation is similar by the manner of their articulation but different in the active organ of speech (e. g. [S] → [F]; [L] → [V]), consonants whose pronunciation is similar in the manner and position of their articulation but different in the involvement of the vocal cords (e. g. [B] → [P]; [Z] → [S]; [G] → [K]) and consonants whose pronunciation is similar in the manner of articulation and the active speech organ but different in the position of articulation (e. g. [K] → [Ķ]; [L] → [L̦]) (Laua, 1997; Miltiņa, 2005, 2017).

Assessing speech development and language learning requires looking at a child's listening skills, whether the message was received and whether the child can answer questions, explain, tell and retell. Attention must be paid to the correct pronunciations of sounds, whether the preschooler hears and differentiates all the sounds of the native language and the qualitative and quantitative study of the development of vocabulary (Emelyushkina, 2015; Filicheva, 2019; Karimova, 2016; Kashe et al., 1986; Rosal et al., 2013).

The linguistic knowledge and skills of the oldest preschool children for each type of linguistic activity have been explained in the scientific literature (Adams, 1990; Bransford et al., 2000; Brosseau-Lapréa & Roepkea, 2019; Courtenay, 2014; Dzintere et al., 2014; Keyton, 2011; Nation & Newton, 2009; Yavuz & Celik, 2017), as well as in the Latvian Preschool Education Guidelines and Programme (Miesniece, n. d.; School, 2030). In preschool education institutions in Latvia, speech development and language acquisition in the preschool education process are promoted in three language content units:

- Communication in context: listening, speaking, reading and writing are necessary to acquire and present information, form relationships and express emotions; every situation of communication has a context that both determines the content and form of the text and requires the choice of appropriate linguistic resources.
- Text and text production: verbal and written language help people to explore and understand themselves and the surrounding environment and culture; text production based on one's own and others' experiences in a planned activity creates new information and presents it.
- Language structure: language follows a certain system: sounds and characters form syllables, while words form sentences and expressions (Miesniece, n. d.; School, 2030).

The use of these units of language in communication builds and develops the child's understanding of language as a whole.

For a child to be able to participate in the learning process, acquire new knowledge and be able to express their attitude in a situation, as well as to be able to talk about it, it is of the utmost importance to understand what someone else is saying; in other words, a child needs fully developed listening skills as well as fully developed phonological awareness (Gutkina, 2000; Kaņepēja, 2012; Koneva, 2000; Lieģeniece & Nazarova, 1999; Tūbele, 2015; Tūbele & Lūse, 2012).

The language skills – listening, speaking, reading and writing – are seen as perceptual and productive skills, and there is a relationship between them. Listening and reading involve the reception and comprehension of

incoming information, while speaking and writing are processed responses to incoming information (Helgesen, 2003; Tavil, 2010; Yavuz & Celik, 2017; Zimnaja, 2001). Often, the process of listening is seen as a passive activity, but this is a misconception. The receiver processes information in the mind based on both phonological awareness (sounds, syllables, words, etc.) and prior knowledge and experience (Stephens, 2009), meaning that the combined actions result in a meaningful understanding of the information received. Subsequently, a logical verbal or written response that is subject to the laws of language is formed.

Fully developed phonological awareness is based on listening skills (Stephens, 2009), which can help children hear the different sounds of different languages. However, this process does not happen naturally for all children. It should be noted that, whether preschool children have phonological awareness difficulties or not, enhancing listening skills is beneficial for overall speech development and language acquisition.

This article focuses on promoting listening skills in preschool children with phonological deficiencies. In today's fast-paced daily life, a child hears many different sounds, but when asked during a walk, for example, 'Did you hear a crow caw?', the answer is often 'No! Where?'. These situations are becoming increasingly more common, and it makes one wonder – why is this? Perhaps the problem is that, in a world of so many noises and sounds, the child is not paying attention to different sounding noises if the activity is not brought to the child's attention. Stephen (2009) also explains that in mutual interaction, people listen to the whole word rather than to the different sounds of the spoken word.

Table 1. Criteria, indicators and assessment levels for listening skill assessments

Criteria	Criteria indicators	Evaluation indicators
Texts	Understanding and implementation of instructions	108–92 points: listening skills fully acquired
	Identifying the descriptive narrative image	91–72 points: sufficient acquired listening skills (minor errors are made)
	Arranging the images of the storylines according to the narrative	71–52 points: partly acquired listening skills (major errors are made)
Sentences	Sentence repetition	48 points: insufficient acquired listening skills
	Choosing the right illustration	
	Creating the corresponding illustration	
Words	Repeating a line of words	
	Defining a name in a row of other words	
	Detecting words with a certain number of syllables	

Table 2. Activities to assess listening skills

Criteria	Activities	Evaluation indicators
Texts	1. Listen carefully and follow the steps in order! Tell me! (Three-step instruction, four-step instruction, five-step instruction)	Explanation of the grades used in the assessment, which are awarded for the task completed:
	2. Listen carefully and find a picture that matches the description! Tell me! (Two-sentence descriptive explanation, three-sentence descriptive explanation, four-sentence descriptive explanation)	4 points: the child completes the task independently without help; 3 points: the child completes the task with one repeated sample;
	3. Listen carefully to the story and put the pictures in the correct order! Tell me! (4-picture storyboard, 6-picture storyboard, 8-picture storyboard)	2 points: the child can complete the task with two repeated samples; 1 point: the child cannot complete
Sentences	1. Listen carefully and repeat the sentences exactly! (4-word sentences, 5-word sentences, 6-word sentences).	the task after three repeated samples.
	2. Listen and choose the illustration that best matches the sentence/text! Tell me! (Two sentences and one text.)	
	3. Listen and create an illustration that matches the sentence/text following the order of the words in the sentence! Tell me! (Two sentences and one text.)	
Words	1. Listen carefully and repeat the words in the order you hear them! (4-word lines, 5-word lines)	
	2. Listen carefully and say/show which name(s) were not named! Tell me! (4-word lines without supporting material; 5-word lines with supporting material)	
	3. Listen carefully, rhyming out the syllables and tell/show me which word has a certain number of syllables! (3-syllable words without supporting material, 4-syllable words without supporting material, 5-syllable words with supporting material)	

The empirical study of listening skills promotion in this study was implemented in successive stages: criteria, criteria indicators and evaluation indicators (defined by the author) were identified (Table 1); an initial assessment of listening skills was carried out and listening skills promotion was enacted; and a re-examination of listening skills and interpretation of results were carried out.

In the listening skill assessments, 27 activities were included (Table 2). The maximum obtainable score was 108 points, while the minimum was

48 points (four points were determined as the maximum obtainable and one point was determined as the minimum obtainable for each task). The maximum obtainable score for each criterion score was 36 points, and the minimum score was nine points.

To objectively evaluate the results of the retest, the activities included in the retest were only implemented in the test. The results of the test were recorded in the test protocol, leaving space for the results of the retest (due to the length of this paper, the test protocol is not included here).

During the empirical study, confidentiality based on data protection laws was respected by obtaining consent from the parents of the children included in the study. It was explained that the name of each child included in the study would be coded according to a certain formula – a letter of the alphabet and an ordinal number, e. g. A1 – and that the results would be used only in aggregate form. (The consent form is not included here due to the length of the article.)

The research included 42 children aged 5 to 6 with phonological insufficiency; all children in the study attended preschool and speech therapy sessions. The empirical study was organised in the speech therapist's office in a preschool, and the study was conducted by the author of the thesis.

The empirical research was conducted over three months (January 2022–March 2022), with three speech therapy sessions a week (yielding ~38 speech therapy sessions). A single session was 40 minutes long, and the process included 18 activities (six activities for each criterion).

The organisation of the empirical study was as follows:
1. A listening skills test was held based on the developed criteria (individual work).
2. Speech and language therapy sessions were held to promote listening skills (via individual and/or pair work).
3. Retesting of listening skills was carried out with individual work.
4. Analysis of the dynamic growth of the results of the initial and repeated listening skills tests was conducted.
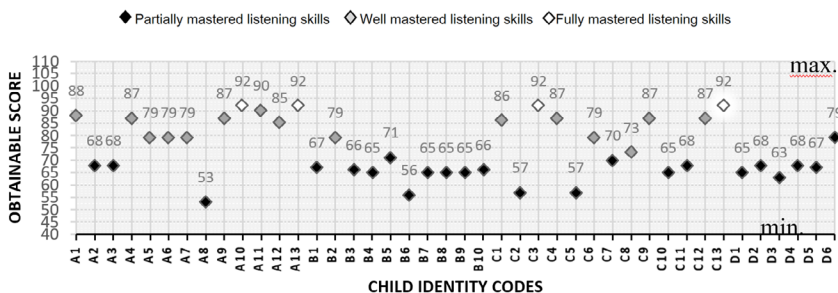
Figure 1. Initial listening skill assessment at the beginning of the study (January 2021)

The initial verification results (Table 1) of listening skills show that, for 23 children, the listening skills were partially mastered; for 15 children, they were mastered well; and the results for four children show that listening skills were mastered fully. However, in some specific tasks, there were inaccuracies in the testing indicators that ruled out the highest possible rating.

Figure 2 shows the results for each criterion, which were formulated to determine which criterion of the listening skills test was most frequently mistaken and to select and include the appropriate and effective activities in the speech therapy sessions.

◆ Words (average 26,2857 points) ■ Sentences (average 25,1429 points) ▲ Texts (average 24, 2619 points)
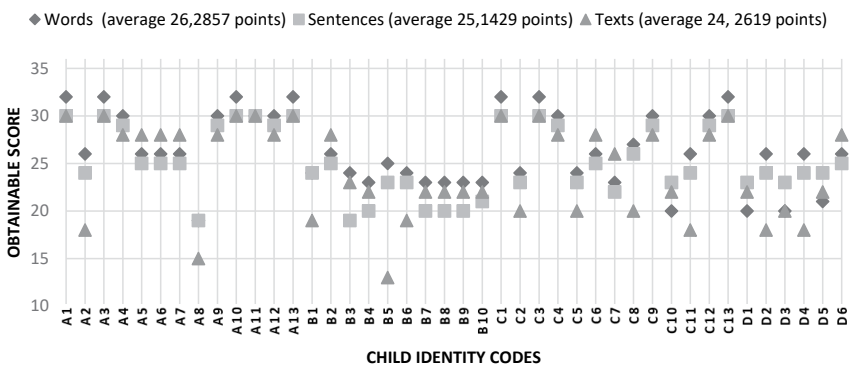
Figure 2. Average criteria scores for the listening assessment at the beginning of the study (January 2021)

Comparing the results of the first listening skill verification for each criterion, we must conclude that the average maximum of 36 points for every criterion was not reached by any of the children included in the research. The highest average points were scored on the criterion 'words', but the lowest were scored on 'texts'.

To promote the development of listening skills and phonemic processes, the intervention included activities that activated observation skills, auditory attention and memory training without forgetting the improvement of control and self-control skills and the activation of thinking processes. Each activity selected had a goal and specific objectives that met the following criteria: age-appropriate development, interesting and enjoyable, developmental, educational and remedial (Vilka, 2021).

This article includes descriptions of three activities meant to ensure listening skills.

Activity 1 (Criterion: 'Words')

'Who gets what?'

The necessary materials were pictures of boys (e. g. Peter) and girls (e. g. Eva) as well as pictures of different objects.

Course of activity: The children put the pictures of Peter and Eva on the table in front of them; there were also boxes for different pictures.

The speech therapist said, I will give Peter a ball, a bag, skates, etc., while Eva was given a doll, a book, a ring, etc.

The children's task was to listen attentively and sequentially arrange the 'gifts' in the order the speech therapist conveyed to them and to name the 'gifts'.

Activity 2 (Criterion: 'Sentences')

'Create an image and describe it.'

The necessary materials were background images (e. g. plains) and small image cards with different objects (e. g. a horse, different flowers, a bee, a butterfly).

Course of activity: The speech therapist slowly said sentences, while the children followed the narration and rearranged the small image cards on the large background images in the order that they heard. When the picture was created, the child tried to describe it in terms as close to the narration as possible.

Activity 3 (Criterion: 'Text')

'Listen, sort and tell!'

The necessary materials were images of storylines.

The speech therapist created a narration, while the children rearranged the story series images in a certain order and created a narration.

Increased difficulty: The speech therapist would not include a single episode, and the picture remained as an extra. The children had to figure out where the picture should be put.

Discussion

In the intervention to promote listening skills, it must be observed that all offered words, sentences and texts should have been known to the children. This means that a child should have 'seen' the image of the spoken word. To be able to hear the important information, the child must have been able to perceive, understand and analyse the meaning of the text heard and estimate the truthfulness of the information heard. This allowed the child to create and express their own opinion about what was heard and create discussion.

The reassessment of listening skills was organised after three months (~38 sessions) and used the criteria, indicators and activities initially defined. The results were recorded using a test protocol.

After analysing the comparative results for every criterion (Figure 3), one must conclude that the largest dynamic growth was in the criterion 'sentences', but the smallest growth was in the criterion 'text'.

The results of the listening skills re-examination are displayed in Figure 3.

Figure 4, which represents the repeated verification results of listening skills, shows that for one child, the listening skills were partially mastered; for 18 children, they were mastered well; and the results of 23 children showed that listening skills were mastered fully. However, in some specific verification tasks, minor errors were made, which ruled out the attribution of the highest possible rating. However, the overall results suggest that, for all children involved in the research, listening skills improved.
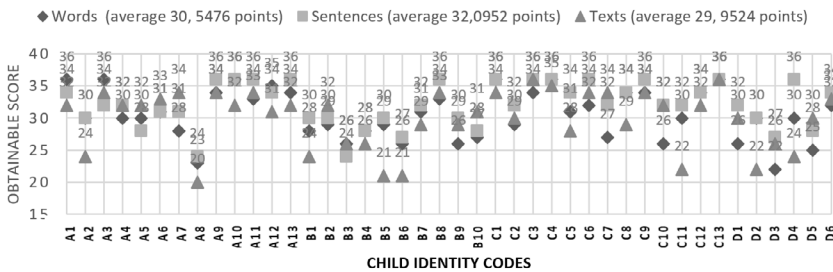
Figure 3. Each criterion's average scores for the listening assessment at the end of the study (March 2021)
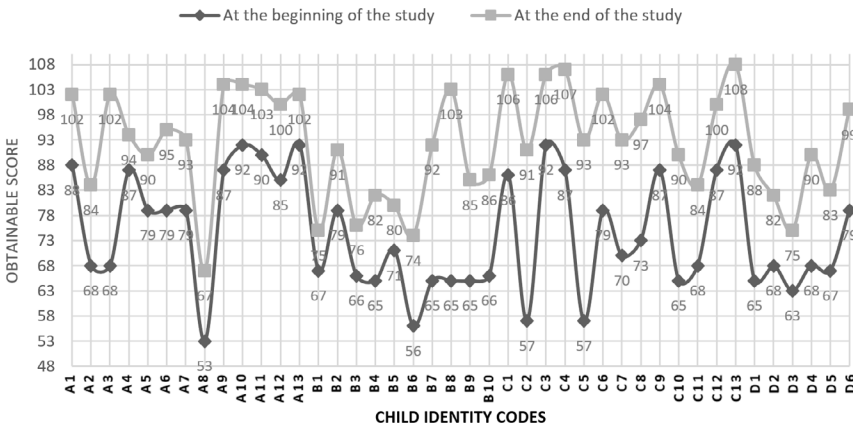
Figure 4. Comparative results assessment of listening skills at the end of the study (January 2021 and March 2021)

Conclusion

The theoretical literature review in this study confirmed the assumption of the author that fully developed speech and a successfully learned language are important communication preconditions. In mutual communication, humans use four language activities: listening, speaking, reading and writing. At preschool age, the primary communication type is verbal, which cannot exist without an important skill – namely, listening. For children with phonological insufficiencies, to ensure listening skill development, specific activities are needed (tasks, exercises, etc.) that are based on repeating the given information, the diversity of activities and differentiating between levels of difficulty – from easiest to hardest – while offering different support materials if needed.

Activities such as attentive listening, memorisation, and thinking and observation exercises are used to promote the development of listening skills. The conditions used are interrelated and have a positive impact on the development of the phonetic, lexical and grammatical areas of language, which means language learning in general.

Before beginning the process of promoting listening skills according to the criteria developed by the author of the study, the levels of development of children's listening skills were identified and determined.

The results of the initial listening skills survey in March 2021 showed that 23 children were assessed as partially proficient in listening skills due to significant errors, 15 children were assessed as proficient in listening skills with frequent minor errors and four children were assessed as fully proficient in listening skills with some minor errors in some tasks. The results of the listening skills retest in March 2021 showed that all the children in the study improved their listening skills, thus confirming the author's view that appropriately chosen activities are an effective means of promoting listening skills.

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PERSONALIZED CONTENT IN THE INTERVENTION PROCESS – A KEY TO THE SUCCESS IN SPEECH THERAPY FOR PRE-SCHOOLERS

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ABSTRACT

The paper is devoted to reveal the importance and necessity of the personalizd content for a child in the intervention process in speech therapy. Every child is special and unique; his interests and desires are important for speech therapist. Child has to be an active participant in speech therapy sessions. His strengths are the basement for the development. New knowledge for pre-schoolers is formed on the basis of the existing knowledge; it needs to be purposefully developed by teachers and this can be done if a child is engaging in the learning process. The active participation of a child in speech therapy sessions increases the child's motivation and attachment to the task to be performed, thus contributing to a faster and more effective result. This research is topical according to the tendencies in teaching-learning and due to the education processes in pre-school. The aim of the study is to reveal the possibility to find effective approach in speeech therapy sessions for the pre-schoolers using materials interesting for them.

Methods used are: literature review, questionnaire for parents and observation of children in speech therapy sessions. Theoretical background is not only the personalized content; it is linked also with speech therapy, intervention process and children participating in speech therapy sessions.

Main findings reveal the improvement of the pronunciation of pre-school children and besides the satisfaction and good mood during all observed speech therapy sessions.

Keywords: intervention process, personalized content, pre-schoolers, speech therapy, speech therapy sessions.

Introduction

When a speech therapist works with pre-school children the question often arises – how to better choose the materials to strengthen the correct pronunciation of speech sounds and promote phonological skills. Recent trends in education provide for conscious learning school-age children as

well as pre-schoolers using methods that promote the development of sustainable skills in the pre-school learning process (Namsone & Oliņa, 2018). To achieve this, more attention must be paid to make the learning process more attractive and the engagement give pleasure and effective result. There is a lot of talk about meaningful learning (Agra et al., 2019; Silva, 2020; Sousa et al., 2015), deep learning (Mystakidis, 2021) nevertheless in pre-school age it is a little more complicated. It is difficult for a pre-school child to concentrate, to switch attention from one type of activity to another, to fully perceive what is being said. Perseverance, a desire not to finish the job, difficulties in engaging in activities that do not seem interesting are often observed. The child's conscious participation in speech therapy sessions is required (Tūbele, 2019). Children need to find a joy as well as interest in what is happening. Learning by playing requires a lot of preparation on the part of teachers. Useful information is found in the article on systemic literature review in the context of the chosen topic, looking directly at the terminology of personalized learning. First of all, it was already noted that the number of publications has been constantly growing since 2002, reaching approximately 5,000 articles in 2012. A. Shemshack and J. Spector analyzed 56 studies in the systematic literature review. The main findings are related to the definition of personalized learning, which emphasizes the creation of a personalized learning environment in such a way that it corresponds to the knowledge, experience and interests of each individual. Then an effective outcome will be ensured. Although different concepts are used in the analysis – personalized learning, individualized learning, individualized instruction, customized learning and others, in this article there are indications of the need for specific personalized content (Shamshock & Spector, 2020).

Based on the theoretical findings, a study was developed using the content that is personally important to a child in speech therapy sessions, both in the correction of sound pronunciation disorders and in the improvement of phonological awareness. The tecniques used in the intevention process mut be used in a certain order, however, the speech therapist may introduce several changes in the materials, structure of the session and progress. To achieve this, the child must be observed, his interests must be evaluated, then the selected materials will be binding for each individual child. A pre-schooler with speech and language disorders cannot independently distinguish speech sounds, analyze the composition of word sounds. Speech and language disorders affect the child's general development, in essence, speech and language express the child's inner world, his thoughts, beliefs, feelings, form actions. Failure to detect and reduce interference in a timely manner affects communication skills and has further consequences. This will create persistent difficulties in learning to read and write at school

(Tūbele, 2019). The child must be offered a varied and meaningful involvement, thinking about the learning process itself, through which the child acquires skills, abilities and knowledge. When a child gets acquainted with the new content, it should be evaluated and linked to the previous experience, thus the understanding of the new content is formed by expanding the previously acquired and will develop more stable ideas and more stable skills and knowledge in the long run, as opposed to the knowledge that is passed on to the child in a ready-made way and that the child acquires mechanically. From this it can be concluded that meaningful learning is related to the child's active participation in the formation of his/her own understanding (Patel-Junankar, 2017), and the learning outcome will be greatly influenced by the process as it is done (Namsone, Oliņa, 2018).

Personalized learning improves student activities more than other educational approaches. There is no single definition, although some authors offer a relevant explanation: Personalized learning prioritizes a clear understanding of the needs and goals of each individual student and the tailoring of the instruction to address these needs and goals. These needs and goals and progress toward meeting them are highly visible and easily accessible to teachers as well as students and their families, are frequently discussed among these parties and are updated accordingly (Pane et al., n. d.). Personalized learning can improve student achievement, however, there is no direct evidence of the effectiveness of personalizing the learning process in preschool. There are also quotes about online personalization, however, significant connections are taking place, as all aspects of individualization of the intervention are observed (Zanker, Rook & Jannach, 2019). Here, in the personalization process, an increased interest in learning contents is observed, which in turn increases the achieved results Some authors talk about customized age-appropriate content. The possibility of choice endows learners with feelings of motivation and autonomy, which support their engagement in learning. There are also ideas for content that is neither too easy nor too difficult for students. Children feel alienated particularly in relation to their cultural background and language skills (Kucirkova, Gerard & Lim, 2021). Attention is drawn to the fact that personalization prepares children for educational activities and promotes their interest. For preschool children, personalized learning material ensures active involvement and improves various skills – language, speaking, reading. An increase in self-esteem, improvement of communication skills and positive behavior have also been observed (Kucirkova, Messer & Sheehy, 2014). There is a study that talks about the choice made by the teacher or another adult (including a speech therapist) based on the previous assessment of the children (Kucirkova, 2019). At the session level, in-depth learning by a teacher-speech therapist means setting clear goals,

updating the child's experience, providing and monitoring support, guiding and observing the child's learning, participating, setting benchmarks against which to measure progress and providing developmental feedback. In turn, the child must have a clearly achievable result and be active in achieving it (Urbāne, 2021). J. da Silva analyzes D. Ausubel's theory of meaningful learning, during which the learning process will be influenced by the previous knowledge in the child's cognitive structure. These are called "anchors", which can serve as reinforcements for new information (Silva, 2020). Prior knowledge is responsible for supporting and managing the acquisition of new content, and the relevance of new knowledge will depend to a large extent on previous knowledge. J. da Silva points out that, according to D. Ausubel's theory, two more conditions are needed for meaningful learning:

- potentially relevant teaching material and
- potentially significant content (Silva, 2020).

The idea of personalized learning itself is not new. From a historical perspective, personalized learning has been mentioned for more than 200 years to provide scalable, mass, public education that also addresses the variable needs of individual learners (Dockterman, 2018).

Despite the fact that the material is potentially significant for the child, he/she must also be psychologically motivated to perform important activities in the learning process, which is not easy. In order for a child to learn meaningfully, he or she must be motivated to learn, which is the most difficult condition for a child to acquire the content necessary for development. The development of the child's intrinsic motivation should be encouraged so that the child understands that the content that is gradually incorporated into his or her prior knowledge is useful for his or her future life (Urbāne, 2021). Creating potentially relevant material is important, but you have to keep in mind that material that is important to one child may be insignificant to another. When organizing speech therapy intervention process, it is meaningly to ensure positive motivation for completing tasks. If the speech therapist includes in the sesions what is important for the child personally, it will increase his/her desire to work and help him/her achieve the set goal. What a child does with joy and enthusiasm drives his or her development forward because he or she is motivated to act and the information obtained is better remembered. In turn, what remains in the memory helps to connect what is learned with what is already existing, and opens up opportunities for new skills and abilities, as it stimulates the child's interest in new activities. The child's perception of the possibilities of using his/her interests expands and he/she develops confidence in his/her ability, self-confidence grows and it helps to overcome the difficulties the child faces.

Methodology

The analysis of the theoretical literature in the context of the research problem is used. Selected articles in Google Scholar by a few key words (personalized content, pre-schoolers, speech therapy sessions) and scientific literature. Theoretical articles were searched for information on personally relevant or personalized content for preschool children in speech therapy sessions. Such wording was apparently too specific and no such information was found. By varying the combinations of keywords, individual articles proved useful, especially the systematic literature review (Shemshack & Spector, 2020). Other ideas were analyzed in articles on personalized learning, meaningful learning, and personalization.

In order to find out the content that is personally important for the child from the parents' point of view, the written form of the survey method was used – a questionnaire with open and closed questions. The questions (10 in total) were designed to find out the child's favorite activities at home, favorite book, favorite cartoon and joint activities at home, interests, passions, thus the answers showed the general trends in the interests of one specific group of children. Therefore, all parents of children in the group (20 in total) provided answers to the questions, which were anonymous and the answers were used only in aggregated form. 6 children from the same group with phonetic phonemic disorders were involved in the study. Parents have given written permission for speech therapy sessions. Children's speech evaluation process and intervention is the part of this activity and the names of the children in the study have been changed for ethical reasons.

The observation of pre-school children and intervention to reduce speech sound disorders was performed. As the result of observation, conversations, and the common trends taking into account the survey results, the interests of each child were noted in order to be able to choose the appropriate and personalized speech material.

Results

The study was conducted on the basis of theoretical findings and speech therapy sessions were organized for preschoolers with phonological disorders. There were six children and 20 parents included in the study[1]. The questionnaire for parents (number of respondents 20) was used to find out more precisely the interests and wishes of children, the environment in

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[1]   Permission from Aija Urbane was received by e-mail on 21st of January 2022 to use the research data.

which they grow up. Questions (10 in total) were asked about children's most beloved books and interest in them. Here, the answers also depended to a large extent on the parents' own attitude towards the books. As for the interest – there was even an answer that the child is not given books, because he only tears them, but most emphasized the children's interest in books. Children's favorite books by parents: picture books – 3 (15%), fairy tale books – 6 (30%), books with surprises – 2 (10%), books with stickers – 2 (10%), books with tasks – 4 (20%), small story books – 1 (5%). For younger children, these are books with more illustrations and books with stickers. In its turn, in the 4–5 age group, content, dynamic events and adventures are becoming more and more important. When asked whether to look at and read books with their child, many parents admitted that they do so often, but most indicated that they do so occasionally. When asked if a child is offered to listen to audio recordings, most parents answered that they do not offer (75%), some answered that they do it very rarely (10%) and 3 parents answered that they do it sometimes (15%) when they feel tired and the children are offered a recording of an evening tale instead. From this it can be concluded that there are parents who find a way to promote the development of children's listening skills and interest in fiction in another format that promotes the expansion of the vocabulary. Smart devices are increasingly entering children's lives. The speech therapist must also take this into account in order to diversify the daily intervention process.

As the time spent together with parents is very important in a child's life, the next question was whether the parents watch cartoons together with the children. The answers to this question were equally proportional – 10 (50%) parents answered that they do it often and 10 (50%) parents answered that they sometimes watch cartoons together. There were no answers – very few.

When asked about a child's favorite toy, most parents also list it and many indicate that it is lovely from an early age, while 2 parents indicate that the child does not have one particular favorite toy. The number of toys includes – dolls, bears, pony, princess, orange bunny, giraffe, unicorns, cars, magnet figures, dinosaurs.

When answering the question about what the child likes to do best at home, the parents most often point out – to draw, paint, play with lego blocks, kinetic sand, dance, play with the sister, brother, watch cartoons. Two of the answers mentioned games on the phone, some help with homework, cooking. One answer was related to leisure activities together – the child likes to dig for worms.

On the other hand, parents mention walking, cycling and visiting playgrounds when it comes to common activities and interests. One questionnaire indicated fishing. The survey was conducted before the intervention

process in order to be able to take into account general trends in the specific group of children. These were integrated with the results of the observation of the 6 children, thus providing a personalized learning process.

Each of the parents' questionnaires is of great value, as it gives an idea of what is important to the child personally and which could be used in speech therapy sessions as well as to create a contact with the child and a friendly, pleasant atmosphere as part of a successful intervention. The obtained information opens wide opportunities for creative activity and individual approach to each child.

6 children with phonological disorders of different ages were selected for the study, Personal conversations with each child were conducted, group activities involving the 6 children included in the study were observed. Thus, the speech therapist prepares for individual lessons with the child, because it has been observed how the child is able to organize himself for work, what is the activity pace, interests and communication skills. Informal discussions with the children's group teachers were carried out, which provided information about the child's development, skills and abilities in other areas of study, interests, communication and cooperation skills in the group environment.

All the obtained information provided an opportunity to evaluate the strengths of each child, which includes both the child's interests and what he or she likes to do and what activities the child has a positive attitude towards. These are the child's internal resources that will help him or her move forward in the development By promoting their development, the child is given the opportunity to show their skills and see their abilities. This in turn affects the child's self-confidence, self-esteem, and the child's development of believe in his/her own strength.

Initial evaluation was performed by different tasks: distinguishing non-linguistic sounds, repeating a whispered word, repeating a rhythm, repeating syllable rows, listening to the word in a line of another words, listening to the sound in a line of other sounds, naming a word with a certain starting sound, listening to the acoustically similar words, determining the number of syllables in a word, determining the first sound in a word, determining the last sound in a word, naming a word by sounds, merging sounds in a syllable, merging syllables in a word. The methodology of studying phonemic perception using specific tasks is based on the recommendations of S. Tubele (Tūbele, 2019). In the evaluation process, children get a certain number of points, which are later compared with the points obtained in the repeated evaluation, determining changes.

Intervention process was planned step by step to strengthen the correct pronunciation and to promote phonological awareness. Main steps were: listening to the rhytm and repeating it, repeating different syllable rows,

listening to the word in a word row, listening to the sound in a row of sounds, naming a word with definite sound, the differentiation of mixed sounds in the pronunciation, division of sentences into words, division of words into syllables, determining the first sound of the word, determining the last sound of the word, merging syllables into word. Although the schedule was more or less the same for all children, individual approach with personalized content was used. Many games were used in the intervention process: syllable game, catch the word, funny words, listen and watch, catch the sound, funny sentences, secret word, and others. Since all children have phonological disorders, the main difficulties are in sound recognition and differentiation. With the before mentioned intervention process, these problems are diminished.

After repeated evaluation of the phonological skills positive dynamics was found. Using content that is personally important to the child and is related to the child's interests, it means the child's strengths, in improving the phonemic perception, its development takes place. The joy and satisfaction that the children gained during the games, the awareness of their abilities, encouraged the children to act and the achievements were not missed. Cildren's names have been changed by ethical reasons. Mark's results improved by 16 points or 19.1%, Ben's results improved by 18 points or 21.4%, Andra's results improved by 19 points or 20.7%, Gatis' results improved by 16 points or 19.1%, Anta's results improved by 18 points or 20.7% and Kate's results imoroved by 12 points or 14.2%. The analysis concluded that none of the children had profound phonological insufficiency. As it is difficult for all children to repeat rows of syllables, more attention should be paid to differentiating the sounds to be mixed and replaced in the pronunciation. All the children attended the speech therapy sessions with pleasure and looked forward to the next meeting.

Conclusions

From theoretical findings in order for a child to develop and improve, it is very important to take into account the child's individuality, experience, background and interests. The child's interests are linked to his or her strengths. They need to be noticed and used because they significantly change a child's attitude towards the new, the incomprehensible and the difficult.

It takes time for a speech therapist to research, talk to both children, parents and teachers. However, the results and skills acquired will be more sustainable and the child's quality of life will increase significantly. It will also have further consequences at a later stage of education (school).

This is especially true for children with speech and language disorders, as the process of exploring their world is partially limited, but it can be overcome with a successful speech therapist and a targeted intervention process.

The results obtained in the study indicate the reduction of phonological perception disorders by using personally relevant content in speech therapy sessions for preschool children.

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INCLUSIVE EDUCATION OF CHILDREN WITH RARE DISEASES. THE CREDIBLE PROJECT

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ABSTRACT

Inclusive education is one of the pillars on which educational policies are based, both in the European Union and in global organizations such as UNESCO. As a result of these guidelines set by these institutions, much progress has been made in general, especially in certain types of disability, gender issues or migration issues, but many sectors of the population still feel "excluded" from the educational system, such as the case of children with rare diseases. Based on these premises, ten organizations from five different countries join forces under the umbrella of the Erasmus+ program in its key action K201, materializing these efforts in the CREDIBLE project (*Children with rare diseases and their inclusion in basic learning environments*). The objectives of the project coincide with those mentioned but, in addition, focusing on teacher training. Providing teachers with tools to carry out an effective educational inclusion of children with rare diseases is essential to achieve successful educational practices and raise awareness among the population. This project offers the creation of three intellectual outputs oriented to this purpose. The first of them is a platform for exchanging cases in which, teachers who have faced this challenge can share their experiences with other teachers who are beginning this path. The second is a self-training course for teachers (MOOC type) in which methodologies and tools are offered for this goal. The third is a pedagogical-health guide of the most prevalent rare diseases and grouped in such a way that the guide can be useful for other diseases with similar pathologies. The project, which began in 2019, and with the difficulties caused by the COVID 19 pandemic, will culminate in August 2022, with a final act in Glasgow in which the final results will be presented.

Keywords: *Inclusive education, rare diseases, Erasmus+, teacher training.*

Introduction. Theoretical framework

The universal right to education has led educational systems towards inclusive practices, adapting the system to the child and not that of the child to the system. This adaptation must take into account all the differences: gender, age, language, ethnicity, health situation, socioeconomic position,

disability, etc. when developing the educational process and the appropriate learning environments.

We can find numerous studies and researches about the educational inclusion of ethnic and linguistic minorities, focused on gender bias, or students with unfavorable socioeconomic circumstances. In health aspects, great advances have also been made in the educational inclusion of children with disabilities derived from prevalent diseases. However, given the apparent low impact of "rare diseases", inclusive educational practices of this community has been little developed. The supposed low social impact due to the low percentage of presence implicit in the definition of "rare diseases", as well as the multitude of pathologies associated with the term "rare", has meant that these children have been practically ignored by the "inclusive education".

In this term, the role of the teachers is important, because they often are called to meet the above needs without having the necessary knowledge. For this reason, the creation of targeted professional development programs is required. These programs are a fundamental element of quality education and are related to the teacher's role, professional identity, self-confidence, self-efficacy, and can affect the quality of teaching and learning outcomes.

The project CREDIBLE aims to take a step forward from innovation, to serve as a reference for the improvement of inclusive practices and as a starting point for research work as well. Under the umbrella of the Erasmus+ program, several European organizations work together to address this gap, contributing to teachers' professional development, improving their inclusive skills and increasing the visibility of rare diseases educational issues.

In recent years there has been intense discussion about the right to education and the need for inclusive practices. In this frame, the aim is to create appropriate educational environments, which promote the participation and inclusive education of all students, not only those who have been diagnosed as children with special educational needs but also those who for social, economic, racial, religious, health or other reasons cause, have been marginalized. These environments aim at the inclusion of all the above students and the satisfaction of their needs within the school unit they attend (OFSTED, 2003). It is a continuous and dynamic process, which aims at individual and collective development and progress and has a wider scope. It comes because of the interest in educating people with disabilities, as a response to the principle of exclusion about all groups considered vulnerable, as a philosophy of education for all, and, as an approach to education and society (Ainscow et al., 2006).

Inclusion is a way of thinking, it takes place in a context of genuine interest in fellow human beings and when integrated as a non-negotiable practice in the school environment, it can bring substantial results. It

aims at an inclusive society that enables everyone to participate in its activities (Gafoor, 2010) and requires the acceptance of the different, the design of individualized curricula, and the strengthening of school-family relations. The inclusive school offers equal opportunities for learning and participation in the educational process of all students, seeks to sensitize all members of the school community to the individual peculiarities of its members, and utilizes these peculiarities as a wealth of experiences. Inclusion is an issue that has preoccupied most countries in recent years. The trend in the various countries of the European Union is to include children with special needs in general schools by providing teachers with various forms of support in terms of staff, materials, and equipment.

Inclusive education reflects the principle of equality for all students towards opportunities and promotes the reduction of barriers to learning (Booth & Ainscow, 1998). However, little reference is made to inclusive practices for children suffering from rare diseases and these seem to be ignored in inclusive education (Molster et al., 2016). Probably because the word "rare" refers to a small percentage of sufferers. However, a disease, in Europe, is rarely characterized when it occurs in less than 1 in 2,000 people and there are currently an estimated 6,000–8,000 rare diseases affecting around 30 million Europeans and 300 million people worldwide (Nguengang Wakap et al., 2020). Rare diseases are characterized by a wide variety of disorders and symptoms that vary not only from disease to disease but also from patient to patient with the same disease. Relatively common symptoms can hide rare diseases with the result that patients, quite often, receive misdiagnosis, or even remain undiagnosed for years, experiencing a "Diagnostic Odyssey", which can last from 5 to 30 years (Black et al. 2015).

According to EURORDIS (n. d.) rare diseases are chronic, degenerative, and often life-threatening. They cause disabilities, thus affecting the quality of life of patients. 70% of them infect children, with 30% of these children dying by the age of 5 years. 72% are genetic in nature, while the rest are the result of infections, allergies, or environmental causes. For 95% there is no treatment. These patients are reported to have unequal access to treatment, inadequate and poor-quality medical care, and inadequate information, and support (Molster et al., 2016). It is therefore proposed to develop specific health policies, strengthen policies for international scientific and research cooperation, inform and raise public awareness about these diseases, network patients and their families to share experiences and best practices, provide validly, reliable, and comprehensive information and the support of these patients in the school context (Taruscio, 2020) by adequately informed and trained teachers.

Students suffering from rare diseases need support both in the learning context and at the psychological level. In addition to the health problems

they face, they often experience rejection by the wider school community and often frustration with any effort they make. In this frame, they need support from both teachers and their classmates, to integrate into the educational process, meet their learning needs, and achieve school performance (Bailey, 1998).

However, the question is whether the educational community is sufficiently prepared, aware, and trained to support these students and their families with inclusive pedagogical practices, methodologies, and strategies and to enhance their self-esteem and self-confidence. In addition, other students need support to accept students with rare diseases as equal members of the educational community (Armstrong & Barton, 2007). Research (Lartec et al., 2015; Majoko, 2019) advocates that the role of the teacher in this issue is crucial. For this reason, the creation of targeted professional development programs is required. These programs are a fundamental element of quality education and are related to the teacher's role, professional identity, self-confidence, and self-efficacy, and can affect the quality of teaching and learning outcomes.

In this term, the role of the teachers is important, because they often are called to meet the above needs without having the necessary knowledge. For this reason, the creation of targeted professional development programs is required. These programs are a fundamental element of quality education and are related to the teacher's role, professional identity, self-confidence, self-efficacy, and can affect the quality of teaching and learning outcomes.

Some reports on the current situation of children with rare diseases coincide in the weak points of the educational system when it comes to responding to this group (FEDER, 2013, Galende, 2014). Many complaints focus on the scant attention that children are receiving from teachers, who in some cases even refuse to teach their subjects. 73% of the associations express dissatisfaction with the educative inclusion in the pre-compulsory and post-compulsory stages. The problem in the educational environment occurs at different levels, causing a domino effect. Beginning with an ignorance and social incomprehension, which implies indifference from the administrations and is clear taking into account the absence of appropriate resources available to students. Both levels can be harmful to the participation of teachers and families and, in turn, results in discrimination and rejection in the classroom. All this falls on children, affecting their development. The training of teachers and the exchange of information and experiences, together with coordinated intervention with parent associations, are some of the proposed instruments to ensure that the school stage can integrate and empower children with rare diseases to projecting them towards a better social and working future. In these reports, the

development and dissemination of educational guides for teaching staff is also proposed, indicating what attention the child and adolescent population will require in certain specific situations.

Methodology. The CREDIBLE project

The Erasmus+ program has inclusive education among its horizontal priorities, encouraging National Agencies to support proposals in this direction. (Erasmus, n. d.). Its key action KA201 supports strategic partnerships for educational innovation. In the 2019 call, ten organizations from five different countries came together to improve the educational inclusion of children with rare diseases. Thus, three schools, *CEIP Félix Rodríguez de la Fuente* (Spain), *4th Primary School of Pefki* (Greece) and *Ashton Secondary School* (United Kingdom), two governmental educational institutions, *Glasgow City Council* and *Valencia Ministry of Education*, two NGOs dedicated on patients with rare diseases, *FEDER* (Spain) and *RONARD* (Romania), an IT company focused on the development of digital platforms, *Softspring* and two universities, the *University of Latvia* and the *University of Valencia* (the latter acting as coordinator of the consortium) have been working in this direction since the beginning of the project.

In accordance with the requirements of the program, various activities and intellectual outputs are developed within the framework of this collaboration. Through collaborative work facilitated by transnational face-to-face meetings and constant virtual communication, three deliverables have been developed. Similarly, three multiplier events support the dissemination of results.

The main intellectual output is a platform for sharing cases. The experience that a teachers accumulate in the face of the challenge of carrying out an effective educational inclusion of some student with a rare disease, in most cases is lost. The fact that these diseases are so rare makes it difficult for these teachers to share their knowledge acquired in teaching practice with other colleagues facing the same challenge. Thus, the platform provides support so that any teacher, no matter how far away they are from another teacher with the same challenge to face, can share the experience uploading it in a standardized format that includes basic data such as illness, age or educational level, the problems faced and the successful responses that worked for them in classroom. In the same way, another teacher who wants to search for information on the platform can create an oriented search of cases that coincide or are similar to the one is facing. It is offered the advice of colleagues and the possibility of contacting them. Data protection is guaranteed at all times and the identity of those involved, both teachers and students, is preserved.

Platform search parameters include:

- Search by disease. The platform supports disease names, preferably in English, but can also recognize other languages. The ideal search method is through the code assigned to the disease in the Orphanet list (n. d.)
- Search by main problem associated. In this case they are grouped into: Nutrition, Mobility, Non discrimination, Bullying, Adapting teaching/Evaluation methods, Accessibility, Using medication – medical equipment during school time, Protocols for emergency situation and Behavior. Once these parameters have been entered, the platform allows a refined search to be carried out by age range (adapted to educational levels) or by country.

Once inside the case, the platform shows a summary and the possibility to expand it and see the implications in the other search elements (behavior, mobility, etc.). By registering, it is possible to send a message to the author of the case (identities remain in the anonymous unless both of them decide otherwise). There are also general tips and all the information that the teacher author wants to offer.

The platform requires the supervision of administrators who verify that the case is real, that it does not contain offensive language, personal data, etc.

The second intellectual product is a MOOC type self-training course for teachers. This course includes the operation of the platform, and a transfer of knowledge gather from the few investigations carried out in the current state of art. This knowledge is adapted in the form of useful tools and techniques to develop their inclusive work in the classroom with this type of student. The teacher training course is based on the research carried out to date as well as input from all partners, patient associations, experts, etc. The basis of the online self-training course is founded on a course developed face to face in which the resource was tested by teachers and the rest of the consortium. Its basic components are information about educational inclusion in general, the characteristics of the group of people with rare diseases, the health aspects that must be taken into account in the inclusion of children with rare diseases, collaboration with health teams, methodologies teaching aimed at promoting the awareness of classmates and families, description of the usual problems that the teacher faces in the inclusion of children with rare diseases, strategies to control the classroom climate, etc. The course will be available in English as a starting point, and will likely be supported by government platforms that facilitate translation of included materials upon request (such as Scientix, nd.)

Finally, a pedagogical-health guide collects useful information for teachers on 50 rare diseases (the most prevalent) structured through the appropriate health-educational duality. The union of these two worlds,

apparently unconnected, materializes through the joint contribution of experts in both fields, including in each disease different interesting points of view. The educational-health guide includes the following aspects:

- Description of the disease. Brief description of the most outstanding characteristics of the treated disease.
- Main organs or systems affected.
- Other organs or systems frequently affected.
- Potential issues in the classroom and recommended strategies.
- Pedagogical adaptation. Vital information for the teacher and based on the experience of the institutions in charge of preparing the guide within the project.
- Space adaptation – ergonomic. On many occasions they are essential to achieve effective educational inclusion.
- Environmental Adaptation. These include adaptations, light, sound, etc.
- Accessibility.
- Inclusive strategies. Specific guidelines to achieve effective inclusion beyond the student himself, involving the entire educational community.
- Therapeutic support in the absence of a school nurse. The support of a nurse is not always available and it is the teacher who has to assume small responsibilities in this regard.
- Potential emergencies and actions. In many cases, you have to act quickly in emergency or first aid situations.
- Relevant bibliography.
- Summary table of actions and recommendations.

To disseminate these products, countless actions are carried out. The project's own website (CREDIBLE, n. d.) and three multiplier events held in Romania, Spain and the United Kingdom with the support of authorities with media influence (such as the Spanish Royal House) guarantee that the results of the project are known by the educational community.

Results and conclusion

The results of the project should be understood as a task of transferring research to the educational actual practice. The innovative result is reflected in the interest shown by numerous associations of patients with rare diseases. The incorporation of specific measures, of specific tools placed at the service of teachers is the value of this initiative. Educational policies require concrete actions that facilitate their real application in the classroom, and the CREDIBLE project makes three tools available to teachers to be able to carry out this task. At the time of making this presentation, the project is still alive, and its results are incipient. In

all cases, time will confirm the usefulness of the intellectual products developed, although preliminary impressions are very encouraging, since patient associations throughout Europe are taking an interest in them to provide them to teachers. The families of children with rare diseases are the main driver of change in this regard and, in general terms, they are the ones who encourage and collaborate with teachers in the implementation of truly inclusive methodologies. The interest in the project shown by EURORDIS, means that future success is quite guaranteed. However, such success is something that only the future will reveal.

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INCLUSIVE EDUCATION IN INDIA AND BANGLADESH – PRELIMINARY RESULTS

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ABSTRACT

This study was conducted as part of the DIVERSASIA project "Embracing Diversity in ASIA Through the Adoption of Inclusive Open Practices", co-funded by the Erasmus+ Program of the European Union. DIVERSASIA's overall aim is to ensure that students with disabilities (sensorial and cognitive) can enjoy the same access to higher education (HE) as their peers without disabilities and enjoy access to digital training materials, open education resources (OERs) and massive open online courses (MOOCs). These are especially relevant to students who cannot currently physically access HE (and instead are part of distance learning schemes and courses) due to existing architectural barriers. The project partners developed questionnaires to be filled in by HE staff and students in order to identify the current situation of inclusive education provision in India and Bangladesh and to understand what focused activities are needed. This article summarizes the results of the staff surveys.

Keywords: *Inclusive education, Higher Education, Accessibility, Disability, Barriers to education*

Introduction

Definitions of inclusive education have been put forward since the Salamanca Declaration (UNESCO, 1994). For example, it can be defined as an educational approach proposing schools in which all the students can participate and all are treated like valuable school members (Morina, 2017). While the need to ensure inclusive education at the HE level was not specifically identified at the time of the Salamanca Declaration, it was an important step towards recognizing that everyone has the same right to education and that countries must do their utmost to ensure access and support in the educational process, regardless of the barriers they face. Furthermore, the Dakar Framework for Action (UNESCO, 2000) stated that all children and youth must have the opportunity to learn, and the role

of educators is emphasized to ensure an appropriate educational process for everyone. However, this document does not include a statement that inclusive education should be ensured at the HE level either.

The need for inclusivity in HE has already been highlighted by Jaegler (2022), who states that inclusivity must be understood as a concept for all stakeholders of a higher education institution (HEI): students, employees, alumni, and partners. However, the principles of inclusivity in HE are not so self-evident, which has been pointed out by several researchers (Nīmante et al., 2021; Stentiford & Koutsouris, 2021). One of the reasons researchers point to is that those working in HE do not have an understanding of how to provide inclusive education (Nīmante et al., 2021; Bunbury, 2020) or how to assess student achievement in light of inclusive education principles (Griskevica et al., 2022).

Several studies on inclusive HE have been carried out, and in most cases, the results show that there are still many unresolved issues where resources need to be invested to make HE accessible to people with different special needs (Shopland et al., 2022). Various regulations and political guidelines indicate that this is to be recommended, and most European universities are bound to guarantee people with disabilities or special educational needs the appropriate environment to facilitate access, promotion, as well as full participation in academic life under equal conditions (Faura-Martínez & Cifuentes-Faura, 2022). However, it must be admitted that it is not always so. Inclusive principles and practices have been making inroads into university agendas, policies, and teaching and learning practices for some years, but in the context of HE, there is still a long way to go before we can claim that inclusion is ensured, and many challenges must be addressed to align educational practices with the principles of inclusive education (Morina, 2017).

This paper provides some preliminary results from the DIVERSASIA project, which focuses on inclusive HE in India and Bangladesh. There, too, inclusive education is thought about more at the general level than at the HE level (Ambia & Rahman, 2021; Fayaz, 2019; Singal, 2019; Taneja-Johansson et al., 2021). In HE, change happens rather slowly. In India, the government launched the Accessible India Campaign (Sugamya Bharat Abhiyan) in 2015 to "facilitate barrier-free urban development for persons with disabilities in three broad domains i.e., Built Environment, Information Technology, and Transportation." This process concluded with the Supreme Court of India's decision that HEIs must provide access to HE to persons with disabilities (India Today, 2022). Bangladesh has also been addressing inclusive education gradually, both in terms of including students with disabilities in education and providing material support, as well as in terms of thinking about gender equality (Grimes et al., 2021).

Despite the fact that steps have been taken to ensure inclusive education in both India and Bangladesh, research findings show that problems persist and that despite the support defined in the legislation for students with special needs, this support is mainly received by those who are more familiar with the various laws and regulations, can read documents, and know where to turn for help (Das & Shah, 2014; Dongre et al., 2022). This means that it cannot yet be said that all students are provided with an equal amount of inclusive education according to their needs. This paper, therefore, aims to discover what the current situation is with inclusive education provision in higher education today in the above-mentioned countries.

Methodology

A questionnaire was developed for the needs of the project using Google Sheets, enabling it to be distributed digitally. The questionnaire collected data from five areas: demographic information, inclusive policies and practices in educational institutions, experiences and knowledge about inclusive education, and the support needed to provide inclusive education and distance learning in universities. The questionnaire consisted of 36 questions and 77 sub-questions. The initial version was developed in English, and the project partners from India and Bangladesh then chose whether to translate the questionnaire. The Indian partners chose to use the English version as one of India's official languages is English, while the Bangladeshi partners translated the questionnaire into Bangla. Thus, the data were extracted in two streams, but these were then exported into Microsoft Excel and merged before being imported into SPSS. The data analysis used both descriptive and diagnostic methods, and in some cases, the results obtained from the two countries were compared.

The questionnaires were distributed to academic and administrative staff by the project partners in the countries where the study was carried out. The researchers used the convenience sampling method by sending questionnaires to a wide range of people representing the group whose views the researchers were seeking. Completion of the survey was voluntary, and the data were analyzed only in aggregate form. This study focuses on two Asian countries that are quite different according to various parameters, so the comparison of data was done for statistical purposes only, without in-depth analysis at this stage.

Results

1. Demographic information

A total of 356 respondents from India (192) and Bangladesh (164) participated in the study, comprising 224 men and 132 women. Most of the participants were 25–34 years old (150) or 3544 years old (140). The majority of respondents were university teachers or HE administrative staff. A significant number did not indicate the level of the educational institution they represented, while the rest of the respondents represented special educational institutions, secondary schools or HEIs with profession-oriented study programs. The majority of respondents from both India and Bangladesh lived in capital cities (146), major cities (74) or suburbs of large cities (59). Many fewer respondents came from smaller towns, villages and the outskirts of the country (72). This is due to the fact that it was the opinions of HE lecturers and administrators that were analyzed in this step of the research, and HEIs are concentrated in larger urban areas. The respondents came from different educational institutions, and the number of students in these institutions varies (see Figure 1).
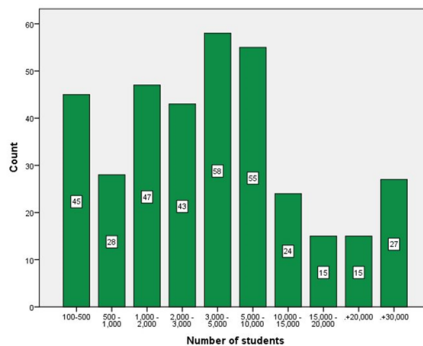
Figure 1. Number of students at the respondents' institution
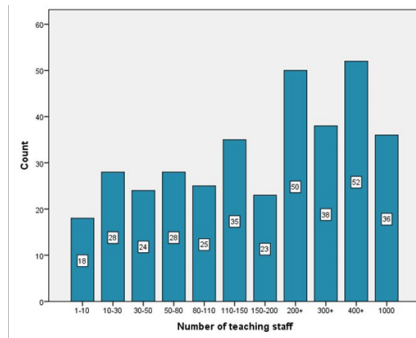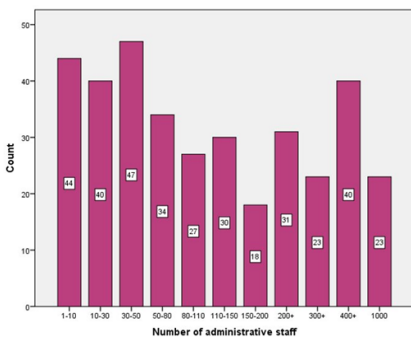
Figures 2.1 and 2.2. Number of staff members at the respondents' institution

Data were collected from both teaching staff and administrative staff, and the total number of these members of staff in the respondents' institutions can be seen in Figures 2.1 and 2.2.

Data were first collected to find out the percentage of students with special/functional needs in HE and then analyzed to understand the situation in HEIs in India and Bangladesh. As can be seen in Figure 3, their situations differ: there are more students with special needs in Bangladesh, and the biggest percentage of students with special needs are those who have mobility problems. Such a difference can indicate that students from Bangladesh with special/functional needs get more support during their compulsory education, allowing them to complete their education and enter HE. The situation in India may start changing positively after the Supreme Court ruled in July 2022 that HEIs should ensure access to education for disabled students.
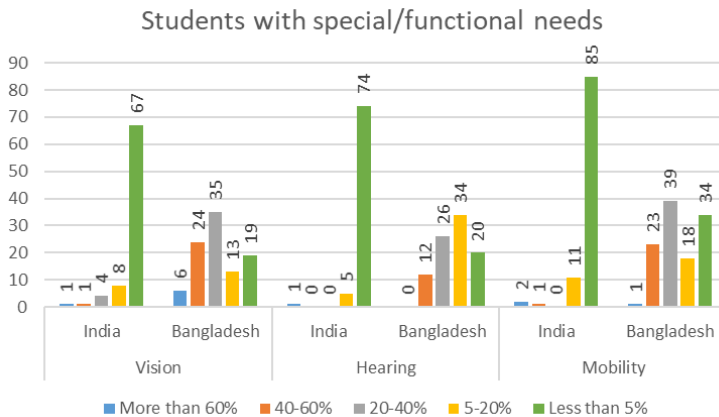
Figure 3. Students with special/functional needs

The following set of questions was about different special/learning needs. It can again be seen from these data that the situation is slightly different in Bangladesh, where there are more students with special/learning needs in HE (see Figure 4). It can be assumed that support is provided for them (Dongre et al., 2022).

When analyzing data about students' problems with social relations and economic barriers, it can be seen that the two countries' situations are again different, and it could be concluded that there are more students with social and economic problems in Bangladesh (see Figure 5). However, the researchers believe that this shows that HE in Bangladesh is more open to students with diverse needs and that teachers recognize them in the study process. These data are in line with earlier responses (see Figures 3 and 4),

which suggest that more students with special needs are included in HE in Bangladesh. Nevertheless, according to the research of other authors, there is not such a positive attitude towards students with high support needs (Ahsan & Sharma, 2018).
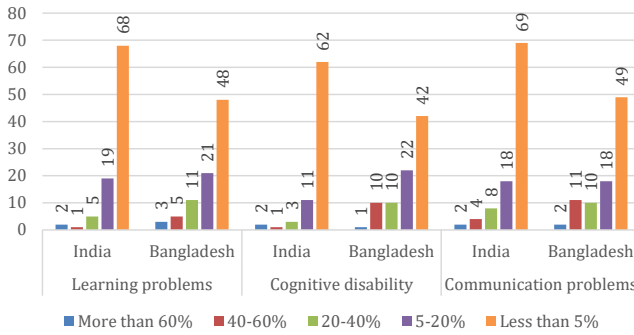
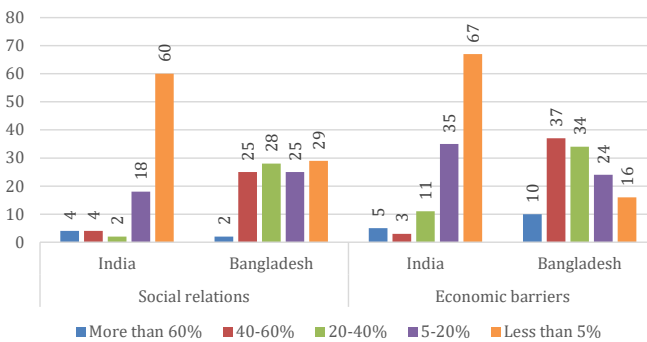

Figure 4. Students with special/learning needs

Figure 5. Students' social situation

The participants were then asked how they rate their knowledge of inclusion, equality and access for students with disabilities as well as their experience of working with students with special needs, both on a scale from 1 to 5, where 1 meant no knowledge or experience and 5 meant a very high level of knowledge and experience. Lecturers' attitudes and knowledge about inclusive education are powerful factors in ensuring that students with special needs can learn successfully, and the importance of this aspect has already been highlighted by other researchers (Bodhi et al., 2022).

The results (see Table 1) show that the participants rated their knowledge of working with students with special needs higher than their experience thereof. Comparing the participants by country, the respondents from

India assess their knowledge more highly than that of their Bangladeshi counterparts. This study uses a self-assessment method, so it is not possible to say at this stage whether the respondents' self-assessment is the same as their actual knowledge. At this point, we can only speculate that, given that HE in India includes very few students with special needs, the respondents are optimistic and think that their knowledge is sufficient. On the other hand, the respondents from Bangladesh, where HEIs include relatively more students with various special needs, are aware that their knowledge is insufficient. Whether this speculative conclusion is correct or whether the data should be interpreted differently, it is clear that knowledge about inclusive education needs to be improved so that students can receive the support they need.

When asked if they hold a degree or if they have attended a special course in special education, 26 of the Indian respondents and 17 of the Bangladeshi respondents indicated that they had received such an education, and a very small number indicated that they had received this knowledge on additional courses or were currently studying (see Table 2). These data confirm the need for the activities planned in the DIVERSASIA project, which foresees the development of training materials on inclusive education and the organization of workshops for HE on inclusive education.

Table 1. Case Summaries

Country		How do you rate your knowledge in the field of inclusion, equality and access for students with disabilities in HEIs?	What is your experience of working with students with disabilities in HEIs?
India	Mean	3.16	2.59
	Variance	1.537	1.496
Bangladesh	Mean	2.44	2.26
	Variance	1.319	1.024
Total	Mean	2.85	2.45
	Variance	1.567	1.317

Table 2. Number of respondents with a degree/diploma in special education

		No	I am studying now	At the level of additional courses	Yes	Total
Country	India	158	1	7	26	192
	Bangladesh	135	8	4	17	164
Total		293	9	11	43	356

2. Inclusive policies and practices

Respondents were asked to indicate the extent to which a number of statements applied to their institution by evaluating them on a scale from 1 to 4, where 1 = Unaware, 2 = Not addressed, 3 = Yes (partially addressed), and 4 = Yes (fully addressed). The data analysis (see Figure 6) shows that there is a slight difference between the two countries in all statements, which is interesting, bearing in mind that the percentage of students with special needs is higher in Bangladesh.
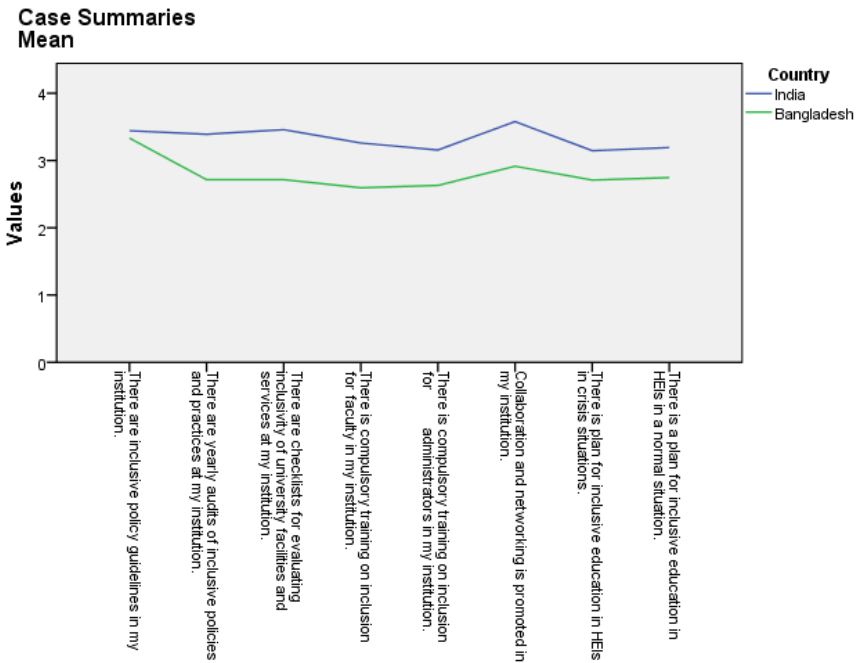
Figure 6. Parameters of Inclusive policy in both countries

The results for the statement 'There are inclusive policy guidelines in my institution' are almost the same, but all other statements are evaluated at a lower level by the respondents from Bangladesh. The highest evaluations from both countries were for the statement 'Collaboration and networking is promoted in my institution', with higher results from India.

The respondents were not asked to provide information on all the documents they mentioned. Further research is therefore needed to find out why there are such differences in answers about internal documents and in the percentages of students with special needs who are enrolled in HE in both countries. It can be seen from Figures 3 and 4 that there are more students with special needs enrolled in HE in Bangladesh, but when

respondents evaluated the statements about internal documents, higher results on internal policies were obtained from India.

We can make some speculative conclusions at this point about why the Indian respondents' evaluations of documents ensuring inclusive policies were higher:

1. The Supreme Court of India ruled that all HEIs should ensure that HE is accessible for disabled students, which is why institutions have developed such policies, even though not many students with special needs are enrolled yet because long-term traditions hold them back from entering HE.

2. There is a tradition of preparing documentation that states that services are being provided, but in reality, the situation is different.

3. There are different understandings about what is meant by the statements on inclusive policy.

Despite what these findings indicate, researchers should carry out additional data analyses to investigate them in more depth in further steps of the project's development.

In answer to the open-ended question of whether there was ***anything the respondents wanted to add regarding inclusive policies and practices in your institution or higher education in general***, some participants talked about what was still needed, such as a separate special education curriculum, a more individual approach to the learning process, and assistive technology. However, some mentioned that several effective practices are already being implemented in their educational institutions, such as club activities based on students' interests, providing additional security facilities for girl students, encouraging all students to take part in sports activities, and reducing the fees. Not all respondents answered unequivocally negatively, and, in some HEIs, pedagogues were even able to name positive aspects of inclusive education that are already being implemented.

In the next open-ended question, participants were asked about ***the biggest challenges in their experience in the learning process with students with disabilities.*** Such answers as the following stood out very clearly: "to make them understand the content", "to ensure joy of learning", and "to teach the engineering concepts". In some sense, this may indicate the cause of the challenge; perhaps the teachers do not know the correct pedagogical methods to work with students with special needs, or perhaps there is no special curriculum. However, when evaluating all the answers submitted in general, it can be said that all kinds of challenges are mentioned regarding the environment, technologies, and the general cognitive, mental and emotional aspects of the implementation of special and inclusive education.

In the next step, participants were asked ***what their best achievements were in the teaching process with students who have special functional needs.*** Several educators mentioned that their best achievement is the achievement of their students passing tests or gaining knowledge. This required them to invest more time in studying, providing an individual approach, and giving additional explanations or understanding.

When asked if they had ***any further comments on the biggest challenges for HEI in the area of disability***, the respondents viewed the nature of special needs and the varying levels of support that may be needed from a country-level perspective as well as from the position of providing basic environmental improvements. The problems mentioned by the respondents included issues concerning teachers and teaching methodology, as well as financial issues relating to technological provision. For example:

- There should be laws that promote equal opportunities on a national level that will open the door to creating jobs for people with various disabilities.
- Improvements should be made to environmental accessibility as many places and buildings are not accessible to those with special functional needs.
- Technological developments should be worked on, and the latest tools and equipment should be provided to support students with special educational needs.

3. Support needed to provide inclusive education and remote learning in HEIs

There were also questions about support tools and other measures that can be used in the learning process to support students with special needs, and a list of options was provided:

- Guide dogs for mobility and orientation
- Google Chromebook (for audio-visual assistance)
- Microsoft Surface Pro (for assistive technology, including text-to-speech software, word prediction and settings that allow screens to be adjusted for students with epilepsy and colour blindness)
- Word prediction
- Alternative and augmentative communication (AAC)
- Eye recognition software

Participants were asked to indicate if they knew how to use them, and there was also the possibility for them to add other tools they used in the teaching and learning process. A large number (100) indicated that they did not know about such tools and support measures, and no one gave another example of another option not mentioned on the list, which means that more information about such options may be needed.

Discussion and conclusions

It must first be stated that the data obtained are only preliminary results, and the researchers need to analyze the situation further, taking the national context into account. The traditions, financial situation and education levels of previous generations in a given country are relevant to inclusive education as they all interact and influence the extent to which the planned support measures will reach the target group. Furthermore, there are researchers who believe that the Western concept of inclusive education is not directly transferable to the educational environment in Asian countries and that specific solutions need to be found (Kalyanpur, 2020; Panicker et al., 2018).

Differences in the data emerged when comparing the results for India and Bangladesh regarding academic staffs' understanding of working with students with special needs, with Bangladeshi lecturers more likely than their Indian counterparts to indicate that they had insufficient knowledge of working with this group of students.

Currently, it can be concluded that lecturers and administrative staff lack the necessary knowledge on inclusive education, and this in turn could affect the provision of inclusive education. This has been pointed out previously by various researchers who have analyzed the most important factors in the provision of inclusive education (Ahsan & Sharma, 2018; Ambia & Rahman, 2021; Bodhi et al., 2022; Dongre et al., 2022).

It is evident from the data that there are more students with different special needs in HE in Bangladesh than in India, but this cannot necessarily be taken as evidence that the situation regarding inclusivity in HE is better in Bangladesh as the study participants from India were more dispersed among cities of different sizes, whereas most of the participants from Bangladesh were from the national capital and the situation is probably different in other regional centres. However, there may be another reason for this distribution of the data: it is possible that the two countries have different definitions of what constitutes special needs, which is why university staff in India reported there being fewer students with special needs.

Finally, participants were not familiar with the different technological tools and other types of assistance that can be used to support students with special needs, so there is a need for education to raise awareness of the different options. Given that digitalization enables both the use of digital learning tools to support students with disabilities to access learning resources remotely and the use of assistive technologies to support students in their everyday learning, there is also a need to develop technological solutions that can be used in HE and improve accessibility and thus make HE more inclusive.

The development of such solutions is one of the DIVERSASIA project's deliverables, and in the next stages of the project, the researchers intend both to analyze the factors that influence the extent to which inclusive HE is provided further and to propose different digital solutions to reduce the impact of special needs barriers on students' access to education.

Disclosure statement

The authors declare that there is no conflict of interest and that no financial interest or benefit has arisen from the direct application of their research.

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SKETCH AS A TOOL OF THOUGHT
IN ART AND SCIENCE

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ABSTRACT

Professors from different studies such as fine arts, engineering in industrial design and digital graphic design and from different universities (Politécnica de Madrid, Complutense de Madrid and Internacional de La Rioja) have participated in an educational innovation project dealing with sketching as a starting point to creation. Teachers from the Universidad Complutense de Madrid and the Universidad Politécnica de Madrid proposed to their students exchange experiences. Students from industrial design went to classes to the Fine Art Faculty and fine art students had to deal with an industrial design proposal.

The aim of the experience is to know how students from different studies manage drawing tools to start their work; drawings to finally paint a still life, drawings to understand volume in a sculpture plaster model to reproduce it with clay, and sketches to propose a Christmas ornament made with wood.

After the experience, drawings from exercises from the three universities have been analyzed to establish similarities and differences in the use of visual language (points, lines, planes, surfaces, and color, between others). Fine art students use the lines with ease, hints, light with the inclusion of color spots as part of the approach to the solution. Industrial design students, on the other hand, consider the line as an essential element in their drawings, well-marked, clearly delimiting the edges of the object, integrating color as an addition rather than as an integrating element. And finally, but not last, students from digital graphic design use lines as a language to propose fast schematic approaches, lines as added texts, and generally a lack of color.

Even though each field of knowledge has some particularities, we think that the drawing approach is essential to face creations no matter their essence. Sketches in early stages mean to face problems, to think and to translate ideas into a two-dimensional surface.

Keywords: *Drawing as thought, Fine arts, Graphic design, Industrial design, Sketch, Visual language*

Introduction

As we are going to deal with drawing and sketch, we will start analyzing their concepts to establish a reference start point.

Dictionaries definitions of drawing don't give too much information. In the Oxford Dictionary, we find a brief definition but with a very broad concept, as it says, "a picture made using a pencil or pen rather than paint". In the Spanish Dictionary (RAE, s/f), drawing is related to the proportions of the image drawn or painted. For the word sketch we read it is "a simple picture that is drawn quickly and does not have many details" (Oxford) or "Project or general note prior to the execution of an artistic work" (RAE, s/f). So, looking for a more extensive definition we have found different authors that explain in a wider sense the meaning of drawing or sketch. As Torres, Serra, Llopis, García and Cabodevilla (2014) mention "drawing is not only the way to express something, but also to feel something".

Considering drawing as an expression that precedes oral language, it is linked to the intimacy of being, part of an individual freedom and builds paths of experimentation where self-recognition of oneself is made to configure a vision of what has not been visible yet. (Monsalve Pulido, 2010).

In the sketch, [...] there exists an early image of what is possible to grasp, but it is made from a white, blind space, where the hand tries to reach an imprecise outline that produces a certain fear to be considered, [...] It is an exciting drawing, tactile, full of erroneous perceptions which force permanent changes of direction (Gómez Molina, 1995) Sketch does not only belong to the field of graphic experience, all people can use the sketch as a beginning of a first idea (Torres, et al., 2014).

Gómez Molina introduces us to Bruce Nauman's definition for the Drawing & Graphics Exhibition at the Boysman-Van Beuningen Museum in Rotterdam in 1991 where "Drawing is equivalent to thinking. Some drawings are made with the same intention as writing: they are notes that are taken." The validity of the drawing will not depend so much on its autonomous value as a work of art, but on its link to the process by which the artist transforms it into a significant part of it. (Gómez Molina, 1995).

Drawing is always established as the fixation of a gesture that specifies a structure, which is why it links with all the primordial activities of expression and construction linked to knowledge, to the description of ideas, things and interpretation phenomena based on explanation of its meaning through its configurations (Gómez Molina, 1995).We can say then that the act of drawing, understood beyond purely aesthetic representations, it is a way of building knowledge for those who carry it out (de Miguel & Nuere (2020).

In a letter sent to John Berger (2011), James Elkins mentioned how yesteryear drawing was fundamental to art. According to him this was the way Miguel Angel understood it and named it as design. Later, in the French Academy, and the others that followed it, drawing was the base of all that was taught. He considers it a whole complex philosophy of marks, signs and traces unfolds in drawing. The drawing is the place where blindness, touch and resemblance become visible, and it is also the point of the most delicate negotiations between hand, eye, and mind. As much as he likes writing, it is the drawing that shows him everything that can be said with a single mark, apparently careless. To which John Berger replies that drawing is much older than any written language or architecture and goes back to Paleolithic art.

Drawing is an action, a primitive impulse that responds to the need to capture an idea on a support. It can be seen in cave representations, where we see figures marked on the rocks, simplification of forms, models of simple but explicit spontaneous expression.

All over the art history we can find several drawing approaches, from the prehistoric era till the 21st century. We can see different styles in the drawings and a variety of techniques. As an example, we have warriors chasing animals in the cave of the Horses in Castellon, Spain (see Figure 1).

Figure 1. Schematic representation of Warriors in the cave of the Horses

For John Berger part of the animals reproduced in prehistoric caves are in interaction with the human figure. There is no fear before them, and there is respect, and a need to capture that mutual presence. Following this line of thought, a direct relationship with the need to leave a mark

can be determined. This marking action is a form of drawing (Tappan, Larrechart, & Muñíz, 2015).

We can consider drawing as that first marking gesture, accessible to anyone due to the simplicity of the means used.

From the schematic representation of the warriors of the cave of the Horses in the province of Castellón in Spain, to the sketches done to prepare a canvas from Gustave Klimt (see Figure 2), these pieces are the clarification of an idea placed on a two-dimensional support. In the case of the Gustave Klimt drawing, it is the starting point of the later work 'The Three Ages' from 1905.
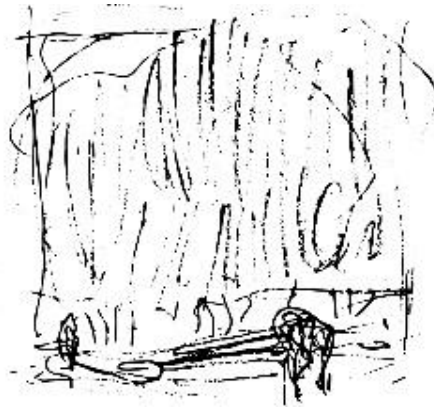
Figure 2. Schematic vectorization of the Landscape sketch from Sonja Knips' sketchbook. Page 55, private ownership

First drawings are quickly done. It is about composition, ideas, elements that later will make part of a bigger work. Maybe, only the author can really understand the meaning, the shapes and lines put together on a piece of paper.

> "For the artist to draw is to discover. It is the very act of drawing that forces the artist to look at the object in front of him, to dissect it and put it back together in his imagination, or, if they draw from memory, what forces them to delve into it, until he finds content of their own store of past observations (Berger, 2011).

Drawing, therefore, allows us to explore a wide variety of solutions, allows us to grasp the world around us and communicate ideas. In the case of the industrial designer, these sketches can be accompanied by words.

For Saussure (2008), language has the function of transmitting information, ideas, feelings, subjectivities and realities and drawing is a way of communication to rework the imaginary and refresh our view of reality since it is a transmitter of ideas, sensations, feelings, and subjectivities. Drawing as a strategy helps to define forms within the course of projecting visual ideas.

The forms of drawing open new ways of thought, they release the mind and consequently active the intelligence. It is a creative act and, as a result, it is a state to build alternative thoughts, an emotional state that lives entirely with the human being.

> "We trace on a support, we discover a curiosity, an unconscious desire to project one's thoughts. The words and images become increasingly clear as we break through the ingenuity barrier, they become something conscious. Drawing is a language that becomes a purely expressive activity." (Torres, et al., 2014) (p. 2511)).
>
> "I can't draw, and I shouldn't do it. We would never do that with language. No one would say: Well, this just didn't come out like a poem. I shouldn't speak. Because we know language is a way to think and get in touch with others. Well, and so is drawing."
>
> <div align="right">Ralph Ammer 2019, minute 0'47"</div>

As Ralph Ammer (2019) mentions, drawing is usually considered the dark corner of the art world, but it is not about artistic excellence or personal self-expression, it is a way to think in pictures. Different professions use drawing as a way of putting their imagination into a paper, a way to transmit their ideas. They think visually. Drawings support the visual thinking and instead of building sentences, we can build compositions with shapes that mean something. Visual thinking is very powerful because you can imagine something without having to make it (TEDxTUM, 2019).

While reading requires a linear lecture getting the meaning as you go through, drawing allows you to understand the meaning immediately. The graphic content allows our eye to move freely to combine the shapes and their arrangement in the composition with the ideas that it extracts from them (de Miguel & Nuere (2020).

> "Being a sketcher was for a long time a trade. Mastering it, the one who drew could capture the forms of reality and fix them in a document […] drawing has always been a tool rather than an art, a specialized activity of inquiry and construction of form" (Tappan, Larrechart, & Muñíz, 2015, p. 10)

For Betty Edwards (2000), the arts are essential for learning specific, visual, and perceptual ways of thinking, just as reading, writing, and arithmetic are essential for learning specific, verbal, numerical, and analytical ways of thinking. Both ways of thinking are vital when it comes to acquiring the skills of critical thinking, extrapolation of meanings and problem solving.

In Dessau, in 1925, analytic drawing, taught by Wassily Kandinsky, was as an education in the look, the precise observation and the exact representation not of the external aspect of an object, but of the constructive elements, the laws that govern the forces (tensions), that can be

discovered in certain objects and their logical construction. It was an education in observing and reproducing relationships with clarity, in which 2D phenomena are an introductory step towards the three-dimensional (Pipes, 2008, p. 39).

As Barbara Rose, commissioner of the exhibition 'Robert Morris. Drawing as thought' in 2012 in the IVAM (Institut Valencià d'Art Modern), wrote, Rober Morris defined drawing in such a way as philosophical research, conceptual premise, preparatory sketch, work diagram, physical register process, and finally as a principal means to solve aesthetic problems. But even though Morris has a prodigious production of critical articles, she believes that his true vehicle thought are the drawings in which he faces both aesthetic and existential problems (Institut Valencià d'Art Modern – IVAM, 2011).

The design process is based on the use of a variety of means in the extensive simulation of design hypotheses. A designer's ability to spend time effectively in visually manifesting their ideas to themselves and others is crucial to their professional operation. (Pipes, 2008).

The process of a designer starts with a basic sketch drawn by hand on a notepad or in some cases; it could be a digital image of the product in two or three dimensions. It is the case of the kettel "Pito" from Frank O. Gehry for Alessi (see Figure 3: https://eu.alessi.com/es/products/pito-kettle), where the designer started with some simple sketches to outline the shape, without taking into consideration materials, manufacturing or other aspects involved in this profession.

Designers can start drawing and drawing to the point that you can see the evolution of the idea, small changes, as if you were in the mind of the designer (Campos, 2012).

The essence of the final kettle design from Frank Gehry is already captured on paper during its development, as we can see on the first image on the upper left (see Figure 4).

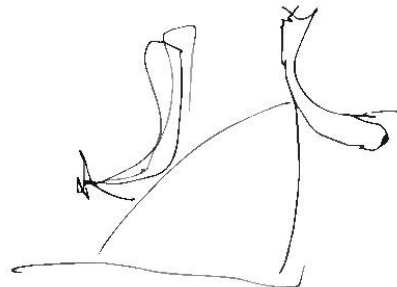**Figure 3.** Pito, Frank O. Gehry for Alessi (1992)

Figure 4. Simplification of the sketch of Gehry

This simplification sketch we interpreted of the Mini project from Alec Issigonis (see Figure 5) shows the designer's thinking behind the groundbreaking design.
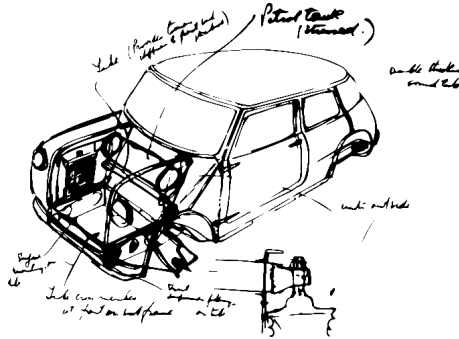

Figure 5. Vectorization and simplification of the original sketch by Alec Issigonis (Prototype Mini project 1958) (Rodgers & Milton, 2011)

Written contributions can be essential for a better understanding of the image. Drawing does not settle the thought completely, but it gives visible form to concepts or ideas that until now were only mental. The technical quality does not matter, nor its aesthetic values, but rather the close link between the author that gives it meaning and value in its development (p. 27). The drawing may not exactly define the thought, but through some signs, gestures, strokes, and they can bring it closer and make it more concrete (Gómez Molina, 1995).

Drawing is a tool used in a lot of disciplines as architecture, design, engineering, or arts. Visual elements of this language can define and organize structures and spaces that knock into shapes. Points, lines, planes define and give volume to the environment objects. Drawings are representation tools, schemas, concepts, diagrams, or structures (Barrera, 2017).
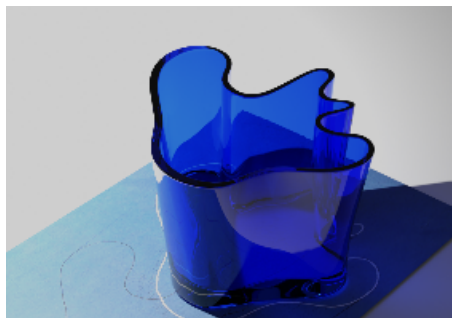
Figure 6. Interpretation in 3D, of the sketch draw from Alvar Aalto. 3D Render. Silvia Nuere

Thanks to a sketch of Alvar Aalto, we have been able to render a 3D interpretation of a possible vase design similar to the famous world known (see Figure 6).

Drawing enables designers to develop and evaluate their ideas on paper. They can serve also for later discussion and be an iterative development (Rodgers & Milton, 2011).

The act of drawing works as a means of firming up an idea and giving it form. The most usual tools are pens or pencils and paper. They allow immediacy in a willfully fluid, dynamic, and expressive manner, free from constraint (Rodgers & Milton, 2011). Sometimes they may need explanation, and that is why you can see writing notes on them.

First drawings place emphasis on the external form, relation between parts, proportion, and important aspects. Knowing how to see is understanding how to think, because knowing how to see is thinking what is seen. It is an intelligent action, but it is also a reference of future ideas or ideas about the future, of our desires, dreams, and fears (Gómez Molina, 1995).

Drawing for Beuys already exists in the thought. If the complete and invisible meanings of thought are not in a form, a good drawing will never result. His idea about drawings, as a special form of materialized thought, is the following: they are the beginning of the change of the material condition of the world through, for example, sculpture, architecture, mechanics, or engineering, where the drawing is not reduced only to the traditional artistic conception (Bernárdez Sanchís, 1999).

Methodology

Project proposal

> "All perception is also thought; all reasoning is also intuition; all observation is also invention". Rudolf Arnheim (Arnheim, 1984, p. 18)

Professors from different studies such as fine arts, engineering in industrial design and digital graphic design, and from different universities have participated in an educational innovation project dealing with sketching as a starting point to creation.

Teachers from the Universidad Complutense de Madrid (UCM) and the Universidad Politécnica de Madrid (UPM) proposed to their students exchange experiences. Students from industrial design went to classes to the Fine Art Faculty and fine art students had to deal with an industrial design proposal (Both groups are from the second academic year in their studies). Another experience was set in the sculpture classroom.

The aim of every experience is to understand how students from different studies manage drawing tools to start their work in different approaches as:

- drawings to finally paint a still life
- drawings to understand volume in a sculpture plaster model to reproduce it with clay
- sketches to propose a Christmas ornament made with wood

At university, there are studies that, despite transmitting different knowledge, go through similar processes, usually related to the ideation of an artwork or product design.

Therefore, this project seeks to enhance the existing synergies between students and teachers belonging to the Higher Technical School of Industrial Engineering and Design of the Polytechnic University of Madrid, to the Faculty of Fine Arts of the Complutense University of Madrid, and to the International University of La Rioja. Art and science to a greater or lesser extent have created synergies since Classical Antiquity and we consider that both fields have important union points that can be highlighted from the academic training.

The research is focused on the first academic years, where art and science deal with a common visual language in the process of creation. Fine art students will draw to outline a sketch for a painting or establish a study for a still life or landscape. Design students will also need freehand sketching to start a project as a first approach to the future product. Both students, even if they belong to different studies will go through a drawing process, but the way they use to express their ideas can be different. This is the starting point of the research, analyzing the way lines, textures, planes, color, and light are apply in their studies. Apart from two-dimension representation they also can deal with three dimensions through sculpture.

But it is not only about students, but also about teachers. Each field of knowledge requires some points to be highlighted, so they will establish some preferences in their proposals. Even though many learning codes are common to one another and essential in the basic student academic formation, we compare and look for similarities and differences in the students' works after bringing industrial design students to fine art workshops and proposing industrial design exercise to fine art students. Even though students apply teachers concepts it is also beneficial to enhance the expressive capacity of the student and to establish multiple connections between languages. Interdisciplinarity is fundamental, and the search for new connections while teaching will enrich the process. This means that, whenever possible, we must try to organize mixed classes between different subjects of different universities (Nuere& de Miguel (2021).

Also, through sculpture workshop (see Figures 7 & 8), students from engineering in industrial design try out a different way of dealing with three dimensions, even though these students are accustomed to face three dimensions through computers or 3d software to represent products.

Figure 7 & 8. Students from the Higher Technical School of Industrial Design (UPM) working in the sculpture classroom

The experience evaluation is analyzed from a qualitative approach of the results obtained from the students. We look for the tools related to drawing, as line, form, color, every student uses, and the expressiveness they reflect on their works. We made a comparison, not only watching the results, but also attending the way they draw while doing it.

The experience was set with students from the degree of Fine Arts, in the subject "Painting processes" from the second year, with two groups, a total of 63 students. From the degree in Engineering in Industrial Design, there were also two groups from the second year, in the subject "Basic Design", and also two groups with a total of 55 students, and from the International University of La Rioja, students were from the subject "Final Degree Project" with a total of 15 students. They participated in the different activities organized in different sessions.

An approach to the application of these skills is also studied in online studies to see how new technologies can also favor expressiveness and representation, regardless of the medium used for their learning.

This gaze towards the "other", from fine arts to industrial design and vice versa seeks aesthetics from the functional vision and functionality from aesthetics becoming an important complement as well as a new stimulus for students.

Therefore, from the great harmony between these different fields of knowledge, our main objective has been to research the visual freehand sketching language in an artistic, industrial, or digital design work as a thought process.

Fine art students search for expressivity, freshness, spontaneity, concepts that will favor a specific way of drawing. Instead, designer students look for accuracy, marked lines, dimensions, proportions, and geometric representation. Different approaches learned by their teachers, but with this experience they will have a different way of watching and expressing themselves through their drawings.

Results

We will differentiate every proposal to establish ways of proceeding in each one, to finally converge to an analysis in which we will set the different ways of approaching a drawing study.

Experience in the Sculpture classroom

They had two sessions of three hours to do it. In this case, Professor Óscar Alvariño gave them a master class to understand the process to make it possible (drawing and sculpting). He even did it with them so they could see first-hand (see Figure 9). In this case not all students from industrial design attend it.

Figure 9. Professor Óscar Alvariño in the sculpture class

The first approach to start a sculpture is to draw the model from different viewpoints so they can analyze the structure, proportions, angles, textures, light, and shadow to understand volumes (see Figures 10 & 11).
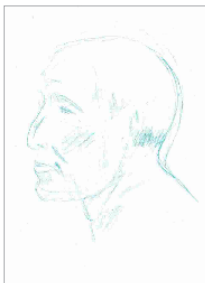
Figure 10. Pablo Jiménez Bermejo

Figure 11. Series of 3 drawings from María Concepción Martín

For all of them it was the first time they approach the creation and copy of a three-dimensional plaster model. They worked with special plasticine (see Figure 12 & 13).

Figure 12. Mario Cancho and María Concepción Martín

Figure 13. Final sculpture. Noemí Abarca de las Muelas

In the Sculpture experience, drawings obtained have lines that delimit the contours of the figure. The form fits into the two-dimensional support. Light and shadow values are sparse in the figure. It seems that the spatial training of the students of the degree in engineering in industrial design and product development facilitates the understanding of the volumes of the sculpture and therefore, being the first time, the ability to reproduce the sculpture is quite good.

Experience in the Painting classroom

Another exchanging experience was mixing students from fine arts and engineering in industrial design in a painting classroom in the subject "Painting processes" (see Figures 14 & 15).

Figure 14 & 15. Professor Macarena Ruiz Gómez and Students from the Higher Technical School of Industrials and Design (UPM) working in the Painting classroom together with the students of the Faculty of Fine Arts, UCM

Starting from some guidelines set by the teacher, whether studies of light, volumes, structure, chromatic harmonies, students seek to understand and assimilate what they are observing, as well as the achievement of competences.

They start with a writing study of what is being seen, about light and shadow, including different grey scales, to understand the elements (see Figure 16 & 17). This can be compared to the notes industrial design uses to explain their sketch. They made fast sketches with explanatory notes.
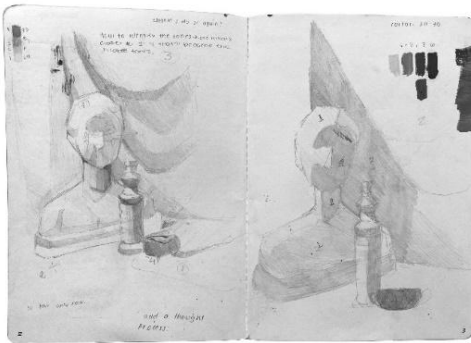

Figure 16. Ana Meza Alarcón – Fine arts
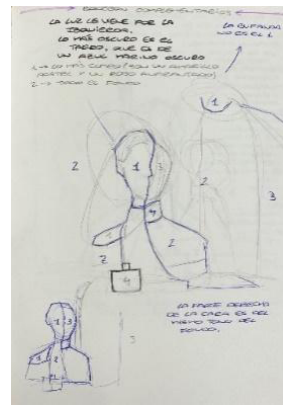
Figure 17. Sara Mora García – Fine Arts

In the sketches of still lives we find fast sketches with explanatory notes. Fine art students use elements to code like 3 or 4different grey scales (see Figure 18). They tend to draw with grey zones avoiding marked lines. They considered the objects as simple geometric volumes (see Figures 19, 20 & 21).
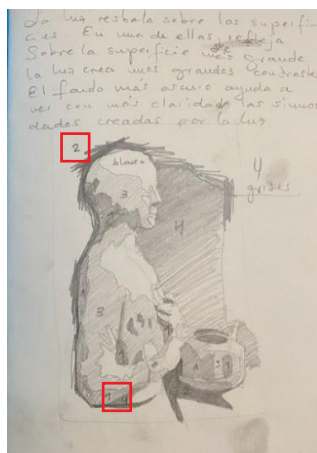
Figure 18. Carlota Dublin Manrique – Fine arts

Figure 19. Pilar Casillas –
Fine Arts

Figure 20. María Díaz Gámez –
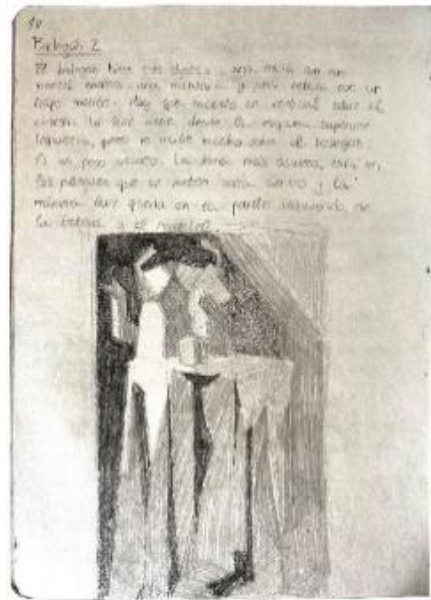Fine Arts

Figure 21a & 21b. Paula Hernando – Fine Arts

In the first approach, Industrial design students try to draw details, without clearly differentiating big zones of grey values. In general, they don't look for geometric form simplification. Most of industrial design drawings seek for details, make grey gradations instead of clearly differentiating grey zones (see Figures 22 & 23). The background is not always taken into consideration (see Figure 24). For industrial design, lines seem essential to delimitate shapes and objects (see Figures 25 & 26).
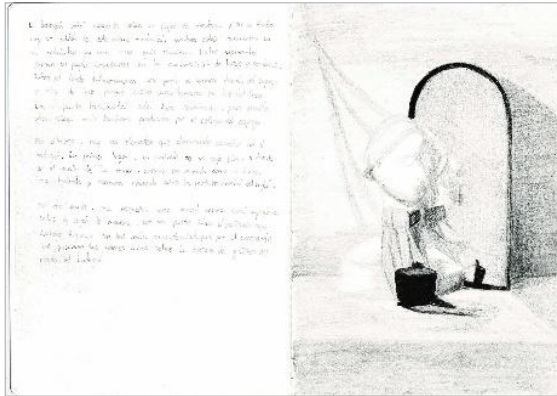
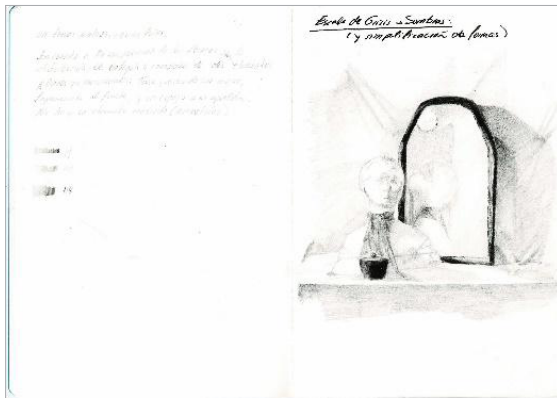**Figure 22.** Pablo Calleja Gil – Industrial Design

Figure 23. Cristina Cagigas – Industrial Design

Figure 24. Aomin
Chen Yang –
Industrial Design

Figure 25. Laura Triguero
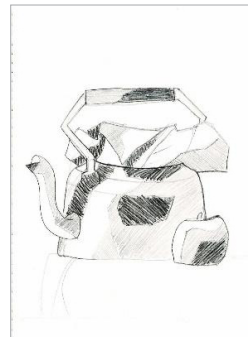Miota – Industrial Design

Figure 26. Rodrigo
Bastante – Industrial
Design

This work has been mainly channeled from the drawing, however, in some cases they also did an approach to color, every student with the tools they feel more comfortable (oil painting for fine art students (see Figure 27 & 28) and markers for industrial design students (see Figure 29)).

Figure 27. Paula Hernando – Fine Arts

Figure 28. Paula Nuñez González – Fine arts

Figure 29. Pablo Calleja Gil – Industrial Design

In addition to carrying out studies of light and simplification of structures, they have made some tests of color, studies of chromatic harmonies to be able to arrange the observed elements in a more agile way and not get lost in the parts, seeking a global vision of both elements as general tonality.

Color is applied as value zones. The student has worked in their notebook. Therefore, we can say that color can also be applied synoptically in the execution of sketches.

Experience with the industrial design proposal

The Industrial Design proposal is about the realization of a Christmas ornament made with wood (Medium Density Fiberboard).

Professor Silvia Nuere gave a master class about design methodologies to start a design process and explained the exercise proposal (see Figure 30).

Figure 30. Silvia Nuere giving a Master class about industrial design methodologies

This seminar was for most of the UCM Fine Arts students their first meeting point with another discipline, but they observed that from the beginning they recognized points of union regarding the process that they had been carried to follow.

The process is to start thinking about personal feelings in this time of the year. This first step will lead them to write concepts related to their experiences. Once they have chosen objects of personal interest, they will proceed to make an abstraction to finally merge into the ornament.

The final aim of the exercise is to have different wood pieces that mounted will give three-dimensional volume.

Drawing is essential in all the process as it is the way to express on a sheet of paper feelings, ideas, success, and failure.

Fine art students use marked lines, color to highlight elements or to indicate final options (see Figure 31).

Lines are protagonist, and they try to imagine how the figure will be in three dimensions, but they do not delve into the way in which the pieces can be put together. Not all the proposals were feasible as they did not determine how to assemble the pieces.

In many cases, fine art students use lines, orthographic representations, and many written notes to explain the sketches (see Figure 32).

In many Engineering in Industrial Design students' proposals, they draw using a system of representation as conical perspective, or orthographic projection (see Figure 33).
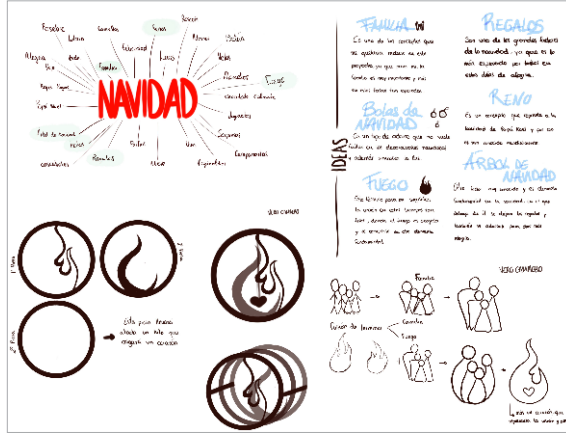
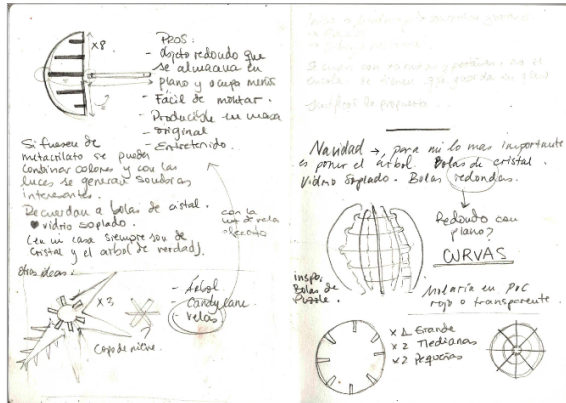**Figure 31.** Verónica Alexandra Camacho – Fine arts
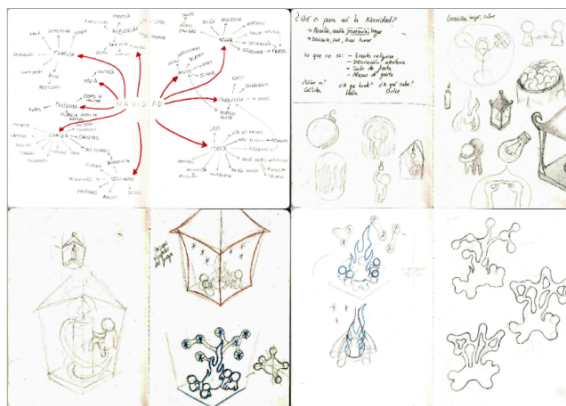

Figure 32. Gabby Grube – Fine arts

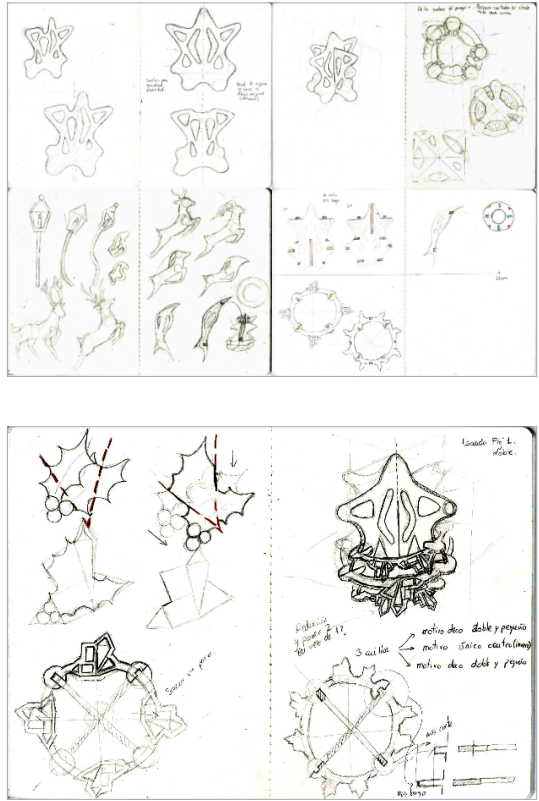**Figure 33a.** Lian Xiaolei del Pino García – Industrial design

Figure 33b. Lian Xiaolei del Pino García – Industrial design

In the case of industrial design students, they elaborate a lot of fast sketches trying to perfectly explain their ideas and the way it will work in the end (see Figures 34). They try to approach visually their thoughts, wit just few explanatory notes.
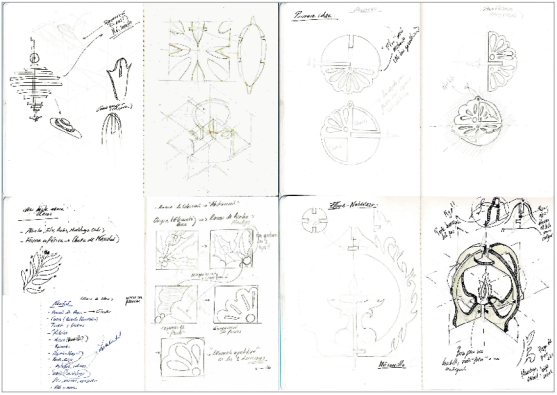

Figure 34. Cristina Cagigas – Industrial design

Digital graphic design analysis

Even though it was not possible to mix students from the Universidad Internacional de la Rioja (UNIR), as it is a 100% online university, we have analyzed the way graphic design students manage drawings.

There is a similarity with industrial design students, as they use lines as preferential visual language tool, accompanied with writing notes.

From the drawings of digital graphic design, we can outline that they use them as a fast sketch to set the ideas on the paper, to think graphically and to not forget any detail prior to the final result.

There is no color in the sketches as drawing is a simple approach to the idea they want to reach. The results are very schematic mixing figures and text. Drawings seem repetitive as they try to approach to the better solution they are looking for (Figure 35 & 36).
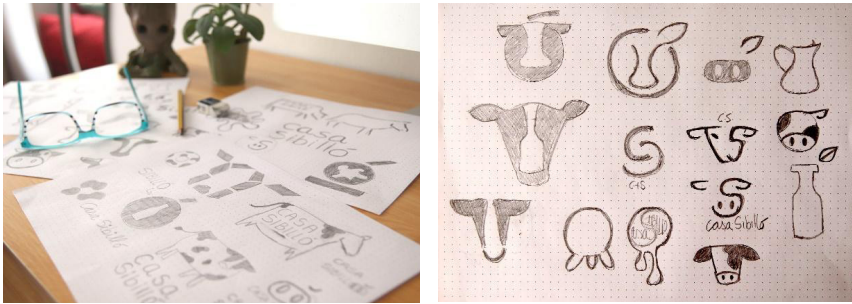

Figure 35. Cristina Martínez Terré – Digital Graphic Design

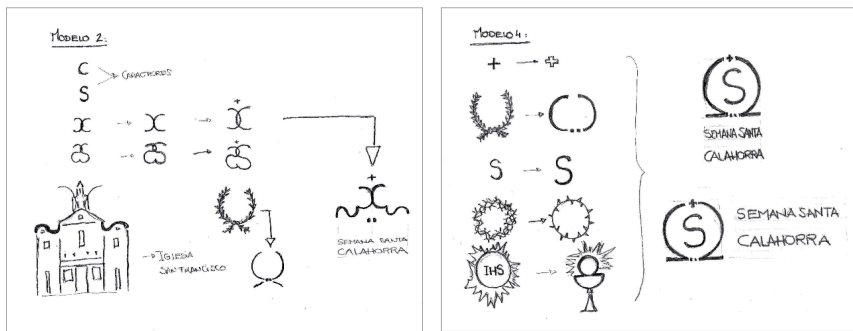**Figure 36.** María Arantzazu Marín Laseca – Digital Graphic Design

In the fine art experiences, all students drew what they saw, far from inventing or interpret the still, and they must stay close to the objects. In the Christmas ornament and in the digital graphic design they draw from imagination about their feelings in this moment of the year, or about what they want to reach with their proposals.

Discussion

In this research we have focused on the qualitative analysis of the way students from fine arts, engineering in industrial design and digital graphic design use drawings/sketches to face an interpretation and representation of a still life, to face an industrial design proposal or to establish the bases of a defined digital graphic design. Drawings have been studied to establish similarities and differences in the use of visual language (points, lines, planes, surfaces, and colors, between others), as the necessary elements to communicate ideas.

We have analyzed different ways of expressing themselves through different exercises. All of them can be considered as the first step approach to a later work.

To summarize, we will highlight the main finds we have reached out in each group of drawings.

Still-life drawings:
Fine art students:
  Drawings as color regions
  Volumes as geometric shapes
  Figure and background as a whole
Industrial design students:
  Start with lines that later they fill with grey scales (making gradients)
  They forget to treat the background as part of the final draw
  Difficulty to synthesize
  They treat the first approach as a final drawing

Christmas ornament:
Fine art students:
  Try to introduce elements of color
  Important features related to illustration
  Narrative works
  Orthogonal projections
  Difficulty to understand final 3D volume
Industrial design students:
  Line is the protagonist.
  Drawings are clumsy, fast without caring about the results.
  Written annotations important as they add information and clarify the ideas to the observer
  Ability to represent the object in three dimensions
  Low-quality model to understand the necessary joints
  Color as a filler

Graphic Design students:
Lines as a language to propose fast schematic approaches
Lines as added texts
Generally, lack of color

The following tables (see Tables 1, 2 & 3) will summarize, according to John Willats, the essential visual elements used in the drawings comparing students from the three different degrees. Willats (1997) made a differentiation about the diverse ways in which people while drawing represent the visible elements of the world. He describes them in terms of drawing systems, as perspective, oblique or orthogonal projection, and denotations systems, as lines and points that will finally merge into shapes and regions.

Table 1. Fine Arts proposal concepts analysis

Fine Arts proposal			
denotation systems			drawing systems
use of lines	regions	colour	orthogonal Projection(O) conical perspective (CP)
Fine arts students	no	clearly defined	as part of a different language	CP
Industrial design students	clearly defined edges	no	as colour regions	CP

(note: the "Fine arts students" / "Industrial design students" labels occupy a leftmost row-header column)

Table 2. Industrial Design proposal concepts analysis

Industrial Design proposal			
denotation systems			drawing systems
use of lines	regions	colour	orthogonal Projection(O) conical perspective (CP)
Fine arts students	yes, very marked	no, some to differentiate parts	yes	O
Industrial design students	yes, clumsy lines	no	no	CP

Table 3. Digital Graphic Design analysis

Digital Graphic Design analysis			
denotation systems			drawing systems
use of lines	regions	colour	orthogonal Projection(O) conical perspective (CP)
Digital design students	marked lines	no	not at all	not applicable

Conclusions

Even though we have indistinctly talked about drawing or sketching, we want to highlight, that in an early approach to a future work, both can be meant. We are then interested in the starting point of approaching a problem through a representation of the visual or imagined world in a two-dimensional support.

Even if we deal with representation of real or imagined worlds, drawings allow us to fix the objects in a two-dimensional support. The idea of the sketch is common in all three disciplines, fine arts, engineering in industrial design or digital graphic design, no matter the exercise. We must capture the essential general ideas that we want to convey, by means of freehand sketching, materialized by lines, shapes, regions and notes if necessary to explain concepts.

The incorporation of writing comments contributes to the fluidity of their thought, as well as to express ideas. Synthesis of both surfaces and chromaticity helps ensure details are not lost.

Sketching as an interdisciplinary tool helps students not only to understand the benefit of drawing but also to analyze other ways of expressing their ideas.

As a knowledge tool, they increase the observation capacity, and organize their thought. While drawing an art piece, product or graphic design, drawing helps to generate ideas quickly, increases resolution capacity and gives fluidity.

Drawing is a language, understood as a series of graphic signs on a support. As a graphic statement, it has the purpose of communicating, representing or projecting. In the end, sketch becomes a tool of thought to convey ideas on a two-dimensional support.
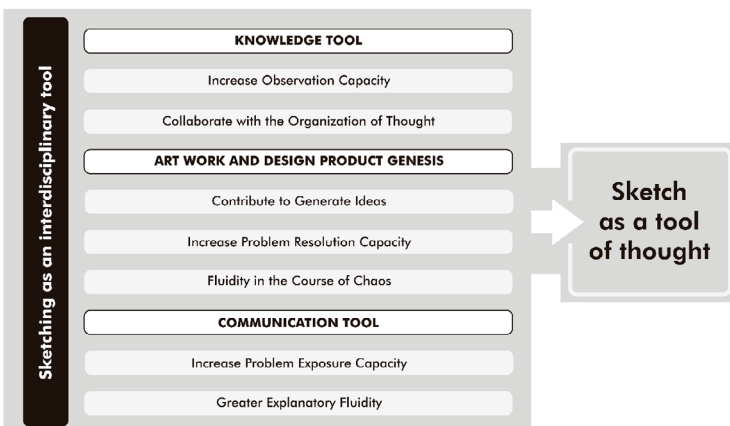

Figure 37. Visual conclusion of "Sketch as a tool of thought in art and science"

As a communication tool, drawing and sketching increase problem exposure capacity thanks to its immediacy, fluidity and to the sensation that mistakes, redrawing, and repetitive lines help along the process to reach the final idea/proposal (see Figure 37).

Drawing then is the same as thinking, it is a process of constructing images and shapes in space; it is a fundamental part of visual production, but it is the plastic form closest to thought. The idea is the stuff of thoughts, concepts, and mental images. Due to its formal and material qualities, the drawing is a translation of the action of thinking in a plan. Drawing is an action, an intelligent action because intelligence inscribes comparing things in order to resolve some issue

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FREEHAND SKETCHING AS PART OF THE CURRICULUM IN LATVIA. 1920–1940

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ABSTRACT

The paper focuses on freehand sketching as a method and part of the curriculum in a historical context. Using material published in the Latvian press in the 1920s–1930s, authors attempt to find out what role sketching played in general and professional education, and what ideas pedagogical and art theoreticians came up with almost a hundred years ago. The study of the publications makes it possible to deduce what forms of sketching have been historically focused on, how sketching as a method has been valued and supported in the methodological programmes of primary and secondary schools, and how it has been integrated into the content of the courses organised by various professional organisations. The study raises four research questions to help clarify these aspects. In addition, the inter-war press highlights areas where sketching skills were needed and broadens the understanding of the applicability of sketching.

18 articles from Latvian periodicals were selected for the study. From the analysis of the texts, it can be concluded that publications mentioning sketching can be divided into several groups. The first group includes descriptions of school teaching or study programmes at various levels, the second group includes articles related to vocational or lifelong learning courses organised by professional organisations and schools, and the third group includes articles devoted to the formulation of the basic principles of sketching as a pedagogical method or as a skill necessary for a profession.

Keywords: education in Latvia, freehand sketching, professional education, sketching history, sketching methodology

Introduction

The article is based on the research "Sketching as a Methodological Technique in Art and Design Studies" conducted at the Faculty of Education, Psychology and Art (FEPA) of the University of Latvia. The research is carried out by four lecturers and researchers from the Department of Art and Technology and aims to investigate and update the importance of sketching as a methodological technique in the study process to develop

atheoretically grounded approach to sketching for future designers, design and technology teachers, and primary education teachers. The practical aim of the research is to develop new tasks for sketching skills development.

As there are no teaching tools and methodological materials on sketching in design and teacher education in Latvia, as well as a lack of adapted materials for learning to sketch, the results of the research will provide new and summarised information on the significance of sketching and will contribute to the understanding of sketching as an important technique in creative processes that has not lost its relevance in the digital age. This article is devoted to the study of the historical context of sketching in the Latvian educational space between 1920 and 1940, the period of the first independence of Latvia. An insight into the different directions of Latvian education in the 1920s–1930s, through an analysis of material published in periodicals and annual reports of organisations of the time, provides quite extensive information on the role of sketching in education – both formal and professional. Highlighting the key aspects underpinning the importance of sketching in education almost a hundred years ago is the aim of this article. It should be noted that the period chosen has one feature in common with the present day: it has witnessed several educational reforms adapting and developing curricula in line with the pedagogical insights of the time, changes in educational paradigms, and a reassessment of values. A look at history might confirm the hypothesis that reforms do not always have to be radically new, but that it is worth highlighting tried and tested methods that have proved their worth.

In terms of research in the 21st century that has focused on the theoretical and practical aspects of sketching, there has been a renewed focus on hand-sketching and ways to engage and involve students in sketching (Thurlow et al., 2019), as well as a search for ways to classify sketches (Pei et al., 2011) to bring structural clarity to the widely branching variety of sketches.

Methodology

As mentioned in the introduction, one of the criteria for selecting the study period was the fact that the Latvian education system was undergoing major changes at that time – after the establishment of an independent state, there was a need to revise both the content and the methodology of education.

In the repository of digitalized periodicals and books of the National Library of Latvia (periodika.lv), texts describing sketching in the content of different levels and forms of education or discussing, what sketching is, were selected according to the keywords "sketch" and "sketching" and a certain period (1920–1940). A total of 18 texts were selected and are presented

here in chronological order to give the reader a better understanding of the development of sketching during the period under study. The selected texts contain a variety of information about sketching, which may be only mentioned or described in more detail. From the longer texts, quotations have been published in this article that best describe the topic under study – the basic principles, tasks, and teaching methodology of sketching.

The study posed four research questions (RQ):

RQ1 – In what context is sketching mentioned in publications of the 1920s and 1930s in the Latvian press?

RQ2 – What types and techniques of sketching are described and highlighted?

RQ3 – Is there a significantly different approach to sketching from today?

RQ4 – Do the publications on sketching point to methods that could be used and adapted in future design and technologies teachers' and designers' education today?

Results

The 1920s

In the 1920s and 1930s, Latvian educators and researchers, including Aleksandrs Dauge, Jūlijs Aleksandrs Students, Roberts Šterns, Andrejs Aronietis, Augusts Dīriķis, Marta Bīlmane, and Arvīds Dzērvītis, focused on the theory of art pedagogy, teaching methodology and educational practice (Stramkale, 2022). In her 1922 article "Pedagogical drawing", the teacher Marta Bīlmane describes a form of drawing that can be compared to sketching in terms of its purpose and technique.

> "The pedagogical drawing is characterised by simple expression, a clear structure that includes only the most important, the most typical, ignoring the details. In other words, a pedagogical drawing is a diagram of a subject or idea, a light sketch which does not pretend to be finished or to be completely correct. The quick and easy highlighting and throwing of the matter to be illustrated on paper or the blackboard multiplies the pedagogical value. The less time, the greater the effect" (Bīlmane, 1922, pp. 61–62).

Bīlmane (1922) recommends that pedagogical drawing should be widely offered in pedagogical courses and seminars, even replacing formal drawing in pre-school teacher training. In her opinion, the teacher's ability to draw in this way in school frees him or her from the use of several other teaching tools and makes the work easier.

The extent to which art activities, including sketching, were incorporated into the curricula of general education schools is reflected in the reviews

of pedagogical exhibitions. In the report of the first Latvian Pedagogical Exhibition (1922), we can read that some schools exhibited several hundred works in the field of art, giving the impression that students were drawing in all disciplines.

> "In this field, studio work in sculpting, drawing, and especially sketching is widely practised. Here you can get an overview of how a student's technical skills and artistic taste develop, from the last grades of primary school to the upper grades of secondary school" (Melnalksnis, 1922, p. 954).

Although sketching was part of the study process in art schools and private studios, as well as at the Art Academy of Latvia, founded in 1919, there is evidence in the press of the early 1920s that sketching was also included in technical study programmes. For example, the Faculty of Mechanics at the University of Latvia offered a course of study called Technical Drawing and Sketching (Upesleja, 1922), while the Faculties of Engineering and Chemistry offered Technical Drawing, the course description of which stated that freehand sketching from given models (machine parts, pipe joints, bearings, valves, etc.) could be learnt (Upesleja, 1923).

In 1924, a new programme for Neighbourhood Studies in schools was developed and proposed (Birkerts et al., 1924). The programme included 15 topics for Grade 1 and 10 topics for Grade 2, with sketching for each topic. The authors also added an example of a Grade 1 student sketch to the program description (see Figure 1).

Figure 1. "Small animals and some sick people live on milk alone". Example of a sketch by a Grade 1 student in Neighbourhood Studies (Birkerts et al., 1924, p. 132)

Drawing and sketching as a method in lessons in various subjects might seem appropriate and useful, but the 1924 Pedagogical Exhibition sparked a debate in the press about the relevance of students' drawings to the content and aims of the curriculum.

> "Some reviewers are concerned that the Latvian people, being a nation of singers, want to become a nation of drawers. There are even voices from quite experienced educators, as if about an excessive cult of "pencil heroes" in our schools" (Bīlmane, 1924, p. 433).

Bīlmane (1924) notes the insufficient competence of teachers compared to the skills of Western educators and the meaninglessness of several teaching tasks, which is reflected in the works in the exhibition.

> "For such phenomena and shortcomings, of course, is not the fault of drawing as such, but of the teacher, who has failed to direct the children's expression suitably. These phenomena do not evidence that drawing has too much of it, but that the teaching of this important subject, in all but a few schools, is without system, understanding and taste. [...] While in our country many teachers find it insurmountably difficult to sketch subjects correctly, in the most modern schools in Austria, Germany and America, for children aged 12 and older, it is a game" (Bīlmane, 1924, p. 434–435).

In the 1920s, sketching in Latvia could be learned not only in formal education but also in courses organised by professional organisations. For example, the Graphic Commission of the Latvian Book Industry Association organised sketching courses in book design and tried to promote them in the Latvian provinces.

> "At the exhibition on April 2, students of the lettering and typesetting sketching courses come out in the open for the first time with folders of Riga sketchers and Riga typesetters. The folders are the fruits of many months of effort, and at the exhibition, everyone can see what a blessing the courses have been to our craft" (Auziņš, 1924, p. 2).

In 1925, a draft drawing program was offered to Latvian primary schools. In the general instructions for all primary school classes, sketching was also mentioned in the programme (Zīmēšanas programmas projekts [Drawing programme project], 1925). The drawing programme was the subject of controversy, and there were opponents, but no one had any fundamental objections to sketching as part of the programme; rather, the necessity of sketching was emphasised (Šenbrūns, 1925).

> "To master drawing techniques, it is advisable to practise sketching (rough sketches) very often. Also, take every opportunity to draw outdoors and out of the window.
>
> Limit frequent and unnecessary use of erasers" (Zīmēšanas programmas projekts [Drawing programme project], 1925, p. 260).

"In general, in Grade 6, objects and groups from everyday life should
be drawn, with a strong focus on the construction and representation
of light, shadow, reflection and cast shadow. Sketching (rough
sketches) of objects would also be of great value for the mastery of
drawing techniques in Grade 6" (Šenbrūns, 1925, p. 369).

Although publications in the 1920s highlighted the value of sketching
as a method in various fields and levels of education, there was no deeper
discussion among educators about the theoretical aspects of sketching. It
was not until 1927 that an article on quick-hand drawing by the German
educator Oskar Seinig was published, which can be compared with the
pedagogical drawing described by Bīlmane (1922). Seinig explains the
difference between such drawing and artistic drawing and the possibility
of creating it from simple basic shapes that have been learnt in advance,
the combination and transformation of which should be taught in sketching
lessons.

"Quick-hand drawing, i.e., drawing that we quickly sketch on
a blackboard, has always been a means of expression, a means that
we use to promote understanding. So, it is not a means of pleasure,
and it does not want to be, it does not want to arouse any feelings.
And therefore, it has nothing to do with art if we understand art in
the narrow sense.

Quick-hand drawing only creates intellectual values. Here lies the
difference between these two types of drawing.

And that is why those who still quite often, without understanding
things properly, demand of the quick-hand drawing, what they
demand of the artistic drawing, are wrong" (Zeinigs, 1927, p. 478).

"[...] as far as the language of the hand, i.e., the expression of our
thoughts using figures, is concerned, so arise quite a number who
do not yet know the inherent difference between art-making and
quick-hand drawing and think that it is quite superfluous to learn to
draw certain typical figures [...] and that it is equally superfluous to
learn to transform such figures and to relate them to one another.
This is a mistake [...] and here lies the fault why we have not yet
systematically arrived at the necessary teaching of sketching in the
teaching of drawing" (Zeinigs, 1927, p. 479).

The aforementioned Latvian Book Industry Association took care of
the development of the professional skills of its craftsmen for almost the
entire interwar period and emphasised the importance of sketching in the
process of creating printing works. Encouraging book publishers to acquire
sketching skills, the Association's 1928 publication explained that an
understanding of art (book design in the modern sense) was not innate but
could be trained and developed.

"[...] from the commissioned work, a rough draft or sketch must be prepared, as is now done abroad, and was also practised here before the war. Unfortunately, this method of working has remained here only in the most decent printing houses.

When sketching a draft of printing work, the main point to note is grouping the lines of type. [...] A good grouping of the lines of type shows an artist with an expressed perception and a correct understanding of the division of space" (Kā rodas uzmetums? [How does a draft come about?], 1928, p. 1).

"Sketching and drafting is something that every book publisher should be familiar with, as the modern printing press is unthinkable without it. It is the only way to eliminate costly typesetting and to enable the customer to obtain neat, printed work cheaply and easily. Nor is it justified to say that not everyone is capable of such work. The understanding of art is not so much innate, but external circumstances beautify and educate the artistic impulses of the individual" (Kā rodas uzmetums? [How does a draft come about?], 1928, p. 2).

The 1930s

Professional development courses involving sketching have been organised not only by the Book Industry Association but also by other professional organisations. For example, in 1932 the Technical Department of the Latvian Agricultural Central Society organised courses for the Mazpulki[1] organisation in home crafts, and the woodworking classes included sketching an idea for an object to be realised later.

"Wooden crafts:

1. Tree species and their uses in crafts.

2. Preparation of wood material: felling, drying, storage. [...]

7. The idea and its sketching. Proportions.

8. Making various objects from a sketch (drawing) and without a drawing" (Vairāk vērības mājas amatniecībai [More focus on home crafts], 1932, p. 2).

In the early 1930s, Leons Taivāns published a new programme for Latvian schools, Life Studies. He believed that sketching, which was part of the Grade 2 curriculum, should be used to develop a systematic approach to drawing and needlework.

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[1] Mazpulki – Latvian youth organization, modeled on the US rural youth organization (4-H)

"5. Shape and colour: Schematic sketching of simple objects in the context of looking at them. Drawing elementary plans in the context of recording places visited. [...]

Practical work should be used to lay the foundations for the systematic practice of drawing and needlework" (Taivāns, 1932, p. 261, 1935, p. 73).

The fact that Latvian school teachers were up-to-date with the latest pedagogical trends in the world is evidenced by a 1935 publication – the Resolution of the Congress of Teachers of Drawing and Applied Arts in Brussels. The resolution proposed the use of active methods, including sketching, to teach drawing in pre-primary, primary and secondary schools.

"2. How to apply modern pedagogical ideas to teaching drawing? – It is desirable to develop drawing dexterity both in the students' free expression and in the direction set by the teacher, from pre-primary school to the end of secondary school. In elementary teaching, active methods should be used which facilitate the development of the powers of observation, visual memory, and imaginative fantasy, especially the so-called centralising method. – Sketching quickly, freely, and spontaneously is important" (Krīģere, 1935, p. 528).

As the above publications show, sketching was important as a useful skill in the arts, design and crafts, and technical professions. Another area in which the importance of sketching is mentioned can be found in the magazine "Kadets", which is aimed at the students of the Latvian Military School. One of the tasks of the magazine was to educate soldiers (Dambītis, 2021), and in his 1935 article "Perspective sketches" Vincents Karmazo explains the importance of sketching in the military field and suggests that perspective sketching is not difficult if one learns a few simple basic rules.

"Just as topographical sketches complement a map, perspective sketches complement, so to speak, visual memory. [...] A sketch drawn for military purposes is good not when it is artistically executed, but when it shows all the details that can easily be forgotten. The need for such a sketch in warfare may be very great and desirable. But [...] many people are not very good at perspective drawings. The reason for this phenomenon is not inability, as many imagine, but simply not knowing how. Overall, it must be said that the art of perspective sketching is not difficult, provided that a few simple rules are observed" (Karmazo, 1935, p. 29).

In the late 1930s, the Ministry of Education issued a new curriculum for vocational schools, which included sketching as part of technical drawing in Year 2.

"Proper surveying, sketching and drawing in projections and sections of various objects [...], with all necessary measurements recorded. Sketching and drawing objects in axonometry.

Note. Sketches and drawings should be prepared as far as possible in pencil on plain box paper, the main aim being to develop the students' ability to understand working drawings correctly and quickly" (Izglītības ministrijas Mācību līdzekļu nodaļa [Teaching Aids Department, Ministry of Education], 1938, p. 38).

Finally, to conclude the chronological overview of publications, the adult education courses in women's fashion design organised by the People's University were promoted as an excellent basis for learning the craft, but it is known that the small number of interested students made it difficult to fill and launch them.

"Craft courses – to broaden education in: [...], drawing and sketching ladies' clothing, drawing and sketching ladies' hats" (Krišjāņa Barona tautas augstskola [Krišjānis Barons People's University], 1939, p. 15).

Discussion

RQ1 – In what context is sketching mentioned in publications of the 1920s and 1930s in the Latvian press?

From the analysis of the texts, it can be concluded that publications mentioning sketching during the period under study can be divided into three groups. The first group consists of descriptions of school teaching or study programmes at various levels (Upesleja, 1922, 1923; Birkerts et al., 1924; Zīmēšanas programmas projekts [Drawing programme project], 1925; Šenbrūns, 1925; Taivāns, 1932, 1935; Izglītības ministrijas Mācību līdzekļu nodaļa [Teaching Aids Department, Ministry of Education], 1938), which defined the role of sketching in the curriculum more or less explicitly. This group can also include articles on the results of schoolwork, which were displayed at Latvian Pedagogical Exhibitions (Melnalksnis, 1922; Bīlmane, 1924). Sometimes the inclusion of sketching in the programme is indicated only by the title of the course (Upesleja, 1922), but mostly some additional information is provided, such as the purpose and tasks of sketching, and materials or objects/themes to be sketched. It can be concluded that, despite the variety of programmes, the objectives of the sketching were quite similar – to develop students' ability to record the parameters of an observed object quickly and accurately and to practise drawing techniques. This meant that the focus was on sketching from life and developing the perceptual acuity of the sketcher. This approach was characteristic not only of visual arts classes, which would seem natural, or of vocational and technical specialisation programmes, where sketches were necessary

for further working drawings, but also of social studies subjects such as Neighbourhood Studies (Birkerts et al., 1924) and Life Studies (Taivāns, 1932, 1935). Sketching was integrated into the primary school curriculum as a versatile tool for training manual dexterity, recording observation and understanding regularities in the surroundings. The fact that this process involved not only a visual appreciation of the objects around us but also a deeper analysis of phenomena is evidenced by the published sample sketch by a Grade 1 student (see Figure 1), which shows a milk utility in small situational scenes. However, as can be seen, the extensive use of drawing and sketching to teach different subjects was not always useful or justified, and the shortcomings of this approach are pointed out by Bīlmane (1924). The main one was the lack of a system (a common curriculum), which was also closely linked to the incompetence of teachers.

The second group of publications covers articles related to vocational or lifelong learning courses organised by various professional organisations and schools (Auziņš, 1924; Vairāk vērības mājas amatniecībai [More focus on home crafts], 1932; Krišjāņa Barona tautas augstskola [Krišjānis Barons People's University], 1939). Although there are many more advertisements and announcements of such courses in the press during the period under study, only a few representative examples are included in this article. From this information, it can be inferred that, whether it was, for example, graphic design, fashion design or wood crafts, sketching was included in the course curriculum as one of the essential components in the process of creating a design or craft product. In addition, sketching in these courses has a completely different task – to visualise the author's idea. This does not exclude the possibility that sketches were previously made from nature or samples, but the ultimate goal was to learn how to sketch the idea of a product so that the sketch is useful to the author and can also be shown to a client or commissioner. So here comes another sketching challenge – communication.

And in the last group, we can combine those articles that are devoted to the formulation of the basic principles of sketching as a pedagogical method or a skill necessary for a profession, or to a more detailed study of it (Bīlmane, 1922; Zeinigs, 1927; Kā rodas uzmetums? [How does a draft come about?], 1928; Krīģere, 1935; Karmazo, 1935). If we talk about the concept of pedagogical drawing proposed by Bīlmane (1922), we can see several analogies with the quick-hand drawing proposed by Seinig (1927): it is a quick drawing (sketching) that has no artistic orientation and does not require art education but is an aid for explaining (by the teacher) and understanding (by the student) the material to be learnt. Bīlmane's article was published in 1922, one year after the publication of Seinig's (1921) book "Die redende Hand" ["The Talking Hand"], in which he explains

the importance of handwork (including drawing) in expressing thought. Seinig is also known to have visited Latvia in 1924, giving lectures and courses on pedagogical drawing and the production of simple teaching tools (Vugule, 2011). Before Seinig visited Latvia, the press briefly outlined his pedagogical methods ("Runājošās rokas" pravietis [The prophet of the "Talking Hand"], 1924). From this, it can be concluded that Latvian teachers were familiar with this method and used it extensively, as the results of pedagogical exhibitions showed (Bīlmane, 1924). The only question was about the quality and systematic use of this method and the professionalism of the teachers.

As regards the use of sketching in professional activities, such as book publishing or the military, the authors of the publications consider that this skill can be acquired by anyone and does not require any prerequisites (Kā rodas uzmetums? [How does a draft come about?], 1928; Karmazo, 1935). In addition, the authors also offer basic principles that should be followed when sketching.

RQ2 – What types and techniques of sketching are described and highlighted?

In the publications studied, three types of sketches can be found implicitly described: (1) observational sketches (record observation of the natural or subject environment), (2) conceptual sketches (depict and explain a concept, aid understanding of the subject) and (3) ideation sketches (visualise the author's idea in the process of creating an art or design work). In primary education, a strong focus on the second group of sketches is placed, encouraging teachers to learn quick-hand drawing techniques to support pupils' learning with visual aids.

The techniques used in sketching are very little described in the research material and often only inferred from the context. It can be noted that sketching is most often associated with drawing with graphite pencil, and the variety of sketching techniques is generally not given much attention in the publications.

RQ3 – Is there a significantly different approach to sketching from today?

A study of historical publications shows that the teaching methods for freehand sketching have not changed significantly, and emphasises the following key principles: regular practice, sketching speed, no use of erasers, and sequencing of sketching tasks (study of nature and samples followed by independent sketching of ideas). Although the terminology has changed and many papers are now devoted to an extended study of sketching, the same basic principles of sketching can be seen in publications from the beginning of the last century and remain relevant today.

**RQ4 – Do the publications on sketching point to methods that could
be used and adapted in future design and technologies teachers' and
designers' education today?**

Relating the historical overview to the contemporary context, the
question of whether sketching as a hand activity will have a place in the
world of the future and thus in education, is a matter of debate. Konrad Paul
Liesmann points out that "in the modern, digitised world, the hands are no
longer in demand. On the one hand, this would break the course that has
always accompanied manual work. On the other hand, almost everything
related to manual activities – individuality, creativity, originality – becomes
the most endangered" (Līsmans, 2022, pp. 94–95). In many areas, the
digital world offers technological solutions that make sketching completely
unnecessary – for example, future soldiers no longer need to learn the laws
of perspective to sketch their surroundings. However, in creative fields
where originality and visualisation of an idea are important, sketching has
retained its role, because "it is the unity of idea and immediacy, of head
and hand, that makes artistic activity possible. The hand not only obeys the
head; its possibilities have a significant influence on the product" (Līsmans,
2022, p. 90). And it is not only the aspect of originality that is important.
Sketching by hand plays an important role in design programmes in higher
education; sketching is a means of language, reflection, communication,
and information storage (Thurlow et al., 2019). Sketching has the potential
to remain relevant as a means of communication in moments when smart
technologies are not available or do not offer the necessary means of
expression.

As neither the functions of sketching nor the teaching methods have
changed significantly since the period under study, the inclusion of sketch-
ing in modern curricula (at different levels of education) can benefit from
the insights gained from historical research, for example on the basic prin-
ciples of sketching in graphic design (see Kā rodas uzmetums? [How does
a draft come about?], 1928).

Limitations of the study

The 18 publications reviewed in this article provide relatively broad,
but not comprehensive, information on the role of sketching in Latvian
education in the 1920s and 1930s. In the course of further research, it
would be necessary to pay attention to other sources that can provide addi-
tional data on the issue under study – archival documents, art and design
history studies, monographs, etc.

Conclusions

Overall, we can conclude that the Latvian press of the 1920s and 1930s reflected the main types of sketching: both sketching based on observation and sketching based on creative thinking and imagination to visualise ideas. These types of sketching can be developed and taught in both design and teacher education today, as the objectives of sketching have not lost their relevance. In design education, sketching is still an effective way to train precision and selectivity of observation, i. e., a way of looking that selects only the features or parameters of an object that are necessary for the work. Sketching is also the quickest way to capture a new design idea. In teacher education, sketching is about communication and creativity: it is a way to explain what students are learning by visualising verbal explanations and develop students' creativity by thoughtfully choosing which topics to accompany with sketching tasks. Even in the 21st century, a teacher who can illustrate his story in the classroom by drawing on an interactive whiteboard can capture more students' attention than one who uses only verbal communication.

The only differences can be found in the sketching technique when compared with the materials studied. Today we can sketch on interactive whiteboards, digital tablets, and smartphones. However, these tools have their limitations. Although digital sketching offers many possibilities and is constantly evolving, it is not yet able to offer the variety and nuance of expressive media that are possible when sketching traditionally. Perhaps this will change in the future. Digital tablet manufacturers are trying to get as close as possible to the feeling of drawing or sketching on paper, but this suggests that digital sketching will be only an imitation of traditional sketching without bringing anything fundamentally new to it. In this context, unless the convenience of smart technology is a determining factor, traditional sketching will continue to be relevant and attractive. The differences between traditional and digital sketching could be a topic for future research.

There is another aspect we can take from historical research: promoting sketching and justifying its necessity, as well as reviewing exhibitions that show the results of sketching. The FEPA research is also a step in this direction.

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PROJECTION MAPPING METHOD IN ADVERTISING DESIGN

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ABSTRACT

Projection mapping is a projection technique used in video or interactive installations to project on irregularly shaped objects, adapting to their unique structure. The projection mapping technique dates back to the late 1960s, where it was mostly used for special film effects and film studio amusement parks. This technique was academically recognized in 1990 by the Office of the Future research experiment. Since then, projection mapping techniques have gained popularity and thus available programs have been created. Over the last decade, it has become extremely widespread around the world, especially in technologically advanced countries, with a tendency to advertise a product in a large format. This is a promising technology that can have a major impact on non-computer technology or design industries. Such as museums, libraries, universities, and various historical sites that want to get modern opportunities to present their specifics, services, and many other informative aspects. In this way, the public is offered to get acquainted with the offers in an attractive and interactive way.

The aim of the article is to determine the evaluation criteria of the developed digital products by studying the essence of the projection mapping method, its use in advertising design.

Research methods: theoretical – research and analysis of literature and Internet resources; empirical – expert interviews, analysis of analogues. Within the framework of the research, the following evaluation criteria were developed for the evaluation of projection mapping installations: Adequacy of the used method; Uniqueness of the content; Adequacy of the use of the programs; Cyclicality; Location of the projection. The criteria can be used by professionals as well as anyone interested in developing an original digital installation design.

Keywords: Projection mapping, advertising, graphical design, installation, analogues

Introduction

Projection mapping is a projection technique allowing to transform almost any surface or object into a 3D experience (Vos, 2003). This technique has evolved into an innovative marketing tool, which transforms everyday items and objects into animated works of art. Such objects may be complex industrial landscapes, for example, buildings, small indoor

objects or entertainment stages. This effect is obtained using a specialised software, where a two-dimensional or spatial object is drawn (mapped) spatially in a virtual program mimicking the real environment, on which the chosen graphic and/or animation is to be projected (Maniello, 2018). Although this technique becomes increasingly popular with viewers, the entire process requires substantial efforts by designers, engineers and other qualified professionals in the field of multimedia.

This technology can be seen used more on the facades of buildings or in public spaces using digitised animation of a work of art.

Due to the Covid-19 pandemic, in many parts of the world restrictions were introduced, preventing participation in events that included mass gatherings. This allowed artists to seek for new ways to attract a large audience and not to violate the established laws. Including public entertainment more frequently to promote an event, new approaches to projection mapping are used. Solutions are being sought to create a unique viewer experience. Moreover, this method is becoming popular in the advertising design development, creating a more impressive interaction of audience with the desired product or service. Advertising design can gain multiple benefits from the use of projection mapping, yet a professional approach is required for cooperation with the representatives of various spheres.

Methodology

The aim of the article is to determine the evaluation criteria of the developed digital products by studying the essence of the projection mapping method, its use in advertising design. Research methods: theoretical – research and analysis of literature and Internet resources; empirical – expert interviews, analysis of analogues.

Within the framework of the study, expert interviews were conducted, the professional activity of which is related to the use of projection mapping installations in various advertising and other public events. The research is related to the development of the advertising installation for Rezekne Academy of Technologies for various events, therefore, the opinion of each chosen expert, whose activity is related to the creation and projection of light installations in different environments, is significant.

The survey was carried out from June to August 2021 applying a structured interview method. An invitation to participate in the survey and answer the questions drawn up by the authors was sent by email to five world's leading companies, whose works can be viewed at several international biennials and public events and competitions inviting professional authors of projection mapping installations. The answers to the interview questions were received from two experts. The interview consisted of seven

open-ended questions. The objective pursued by the authors was to clarify the creative process stages and possible complications, as well as the experts' opinion on the use of projection mapping in advertising installations.

Theoretical review

Projection mapping, like video mapping and augmented reality, is a projection technique (Maniello, 2015) used to transform objects of irregular shape into the projection display surface for various animations, videos or interactive installations. Such objects may be complex industrial landscapes, for example, buildings, small indoor objects or theatre stages. These surfaces become canvas when the graphics are projected on them, playing with the surface shape, structure and texture, creating a pleasant experience of light and illusion. Using specialised software, a two-dimensional or three-dimensional object is displayed spatially on a virtual program that mimics the real environment on which the chosen animation or video is to be projected. The object is mapped, structurally marking the edges of each object, creating separate areas where each required element is displayed with special tools, creating active planes in which to place the appropriate media. The software can interact with the projector or projectors to place any desired image, video, or animation on the object surface, covering every area of the object as dense as possible. This technique is used by both artists and advertisers, who can add additional dimensions, optical illusions and motion to previously static objects, creating additional effects.

In recent years, this technique has been widely used in the context of cultural heritage, as it is an excellent entertainment and educational tool due to the combined use of digital drama (Maniello, 2018). These types of advanced technology tools solve the issues of public gathering and contribute to reducing access barriers, allowing a larger audience to be entertained and/or informed.

Projection mapping technologies are increasingly used in:

- **Concerts and public events** – projection mapping allows the organizers to achieve extra power of attraction for gathering and entertaining people, creating unforgettable moments;
- **Museums** – as an auxiliary aid in unique digital and animated traditional art exhibitions, using large-scale objects as screens or entwining specific figures with elements of artwork;
- **Theme parks** – attract visitors with interactive adventures and added exciting experiences;
- **Cities** – projection mapping installations attract tourists. Light installations on iconic objects encourage inhabitants and guests of the city to rediscover the historical and popular objects of the environment.

The growing use of projection mapping technology in media activities around the world is one of the key factors driving the projection mapping market. The increase in demand for the technology is determined by the effectiveness of its use, for example, portability, flexibility, the use of unlimited visual effects and adaptability to any projection surface. The projection mapping market is also affected by the investment growth in product advertising and the availability of various 2-dimensional, 3-dimensional and 4-dimensional options. This technology can be used continuously for hours, so it is widely used in major sports events and in cinemas, which increases their demand. Moreover, the increasing implementation of projection mapping in many sectors and high customer satisfaction with the product has a positive effect on the projection mapping market (Market, 2021).

Recent studies confirm successful merging of real and virtual elements into a single composition. Combining projection mapping with video processing and computer graphics, an extensive supplement to real objects is offered, creating a link between the virtual and the real (Wojciechowski et al. 2004).

Unlike other light show technologies, projection mapping offers a space for more creativity. Using a new, affordable generation of projector and programmes, mapping can fully cover irregular shapes, objects, and even entire building facades. This technology is able to work with light and animation at a completely different level of impact (Shakra, 2021):

- Immersion: projection can map the entire venue, engaging the audience in an environment full of images and colours turning usual into unusual.
- Impact: visual story, flowing images and animation can have a greater emotional impact than static slideshow images or music.
- Motivation: greater emotional impact creates motivation. For instance, it manifests itself in a desire to get up and dance, to consider buying a product or to join a crowd, or to cheer up a sports team.

Tone of setting: the light affects the mood. Using light, projection mapping can affect mood variations to make them more focused and shared.

Projection mapping is a key to a strong story, an innovative marketing strategy and comprehensive entertainment. It has become a powerful urban art technique, using public buildings and iconic spots. In addition, using the right technology and professional skills, it is possible to create an unforgettable environmental performance.

Results

The expert survey study involved designers, the professional activity of which is related to the use of projection mapping installations in various advertising and other public events:

- Nick Lynch – executive producer of Obscura Digital. Obscura Digital is a global company promoting innovative and creative solutions in the field of technical strategy and engaging activities, providing entertaining, informative and educational communication experience on the international market.
- Ryan McCoy – D4, best known among the projection mapping professionals for large-scale digital installations and astounding projections, using them to surprise the audience and showcase his complex creations ranging from progressive social movements to psychedelic art.

The experts were asked the questions related to projection mapping – starting from the generation of ideas to the implementation of projection mapping installations in real situations with different types of settings. The aim of the interviews was to find out the opinion of professionals on the use of this method in the context of modern advertising, considering the use of the latest tools and models, and to form an overall picture of the projection mapping capabilities in promotional events, creating different scenarios. There were also questions asked about the issues and difficulties of using this technology. During the interviews, the experts also expressed their views on the early stages of their professional careers, how did they come up with globally innovative ideas in the field of projection mapping and developed their own systems and mapping algorithms, helping to create ever more innovative solutions for different types of projection mapping effects.

The first question asked to the experts was about the outset of the creative process. The aim of the question was to understand the first steps of the creative idea development process. The whole process starts with the development of the design phase concept, allowing detailed identification of the client's needs. The experts conclude that by identifying the client's needs, it is possible to understand the budget level and be able to achieve the desired effect. After that, there is a transition from conceptual design to schematic design, and the idea is developed graphically. The key finding is that the process from initial to final stages of the installation is standardised much like in the activities of architects.

The first question gives rise to the next question about the tools and programs used. The main applications used by the experts are *Derivative TouchDesigner* and *Lightform*. However, self-developed projection mapping algorithms and programs are used more. Each team has developed its

own projection mapping technology based on certain nuances of needs. However, it is emphasised by the professionals that a growing number of people are now beginning to delve into projection mapping technology and have been able to replicate it and create several easily accessible versions that can be used by anyone.

The next question related to one of the most significant aspects of projection mapping – the process of creation of the installation model. With the development of the program, separate tools have been created to determine the outlines of spatial objects. For instance, portable laser scanner systems allowing to precisely scan and create a 3D model. By creating a precise model before an installation development, it is possible to graphically create a visual narrative with as few errors as possible. The use of such a model is highlighted by the representative of *Obscura Digital*, emphasising that it makes the process easier and helps to successfully highlight the key elements.

As regards the possible difficulties, the experts unanimously state that there may be unexpected technical difficulties or unsuitable weather conditions which could be a nuisance during installation. Nick Lynch added that every little nuance can disrupt the whole installation and damage the company's image. It is important to assess each environmental aspect.

This was followed by a question about their personal attitude towards the use of projection mapping in both public and private events. The experts revealed that human perception is important to society, and video mapping is an extremely powerful tool for drawing attention. Rays of light add life to the graphics to create unforgettable expressions that allow the viewers to see the existing things from a new perspective. Projected images can affect the public awareness of important topics or be used to attract potential clients to the business. Ryan McCoy stated that his favourite quote is from Jim Carrey: "The effect you have on others is the most valuable currency there is." The experts say that mapping projections is significant, as it offers the opportunity to affect strangers without ever talking to them.

The opinion of the referred experts also coincides with the expert opinions expressed in the literature.

The professionals state that projection mapping is able to create illusions that transform reality. That is why it has become a popular technology for organising international events, especially opening and closing ceremonies, amusement and entertainment venues, concerts, music festivals, and high-level advertising campaigns. Projection mapping both draws attention and stimulates imagination in an utterly unique way.

Projection mapping over time has become one of the most frequently selected types of advertisement installation. This technology is also starting to enter the Latvian market of marketing. It is increasingly being acquired and used by light artists at various events. Artists around the world

experiment with patterns, colours and architectural surfaces, applying their creativity and focusing on many significant aspects, such as:

- Surface identification. The chosen surface can be anything to bring the design to life. Some of the most common platforms chosen by artists are buildings, stages, and transparent backgrounds.
- Appropriate lighting. Using professional applications, the video artist calculates the level of brightness, saturation, contrast, pixel density, saturation of light and dark colour that best suits the building. Considering lighting elements, it is important to accurately assess and calculate all the indicators.
- Content development: The content forms the common denominator of the projection mapping installation idea, creating steps to follow during the process. Professionals assess the content of projections, its need for new ideas, using animations and illustrations to strengthen visual stories for a broader vision.
- Installation: The last setup includes customisation of the content with more attention to the details. Experts visit the site to conduct a general test and reserve the last days for assessment of the elements' accuracy.

The expert discussions show that 3D projections are currently considered to be the most unique way to draw the attention of the crowd in public and, respectively, urban private space. Ryan McCoy of D4 is certain that 3D projection changes not only the way movies work, it also changes the way advertising works. Many of the current installations still occur in situations where a city, an institution or an advertising agency seeks to maximize the effect of an event on the audience.

Analysing the expert opinions on the use of projection mapping in advertising installations, it can be concluded that projection mapping is rapidly entering modern advertising trends and becomes an integral part of various activities. There is a growing emphasis on the need to bring the audience together in a safe environment and to promote well-being of every person. It becomes a great social tool in creation of shared viewing experience that draws people together. A successfully developed projection mapping installation can have a positive effect on the audience and achieve the desired goal. However, it is emphasised that this method is complex and has a number of potentially unpredictable technical issues related to synchronization processes, as well as environmental aspects.

As a result of literature review and analysis of expert opinions, the following evaluation criteria for projection mapping installations were set:

- Method used – a set of methods used in the projection mapping process (VJ'ing, theatrical method, static or interactive, video mapping method).

- Content uniqueness – compliance of the content design with the topic of the event. The video and animation used must be unique and innovative, evoking viewers' emotions.
- Use of programs – accurate projection mapping is based on successful synchronization of the projector and the projection program, creating a virtual visuality of the object.
- Cyclicity – a successful installation has an imperceptible cyclicity when the video loop changes without the viewer noticing. Cyclicity indicates the existence of professionally developed video content and successful synchronization of video and projectors.
- Projection location – the primary objective of professional projection mapping is to delve into the structure of a spatial object and supplement it with dynamic video, creating the required emotional effect. The projection cannot fulfil its objective completely if all the offered possibilities are not used.

Each criterion will be assessed according to the following indicators – compliant; partially compliant; non-compliant.

Assessment of projection mapping installations

Three projection mapping installations held in Latvia were selected for review and analysis of analogues – "Dream in Rezekne" ("*Sapnis Rēzeknē*") by Elita Patmalniece, 2020, VI International Art and Music Festival "Seven Hills" in Rezekne, 2021, *Vincent Van Gogh – "Letters to Theo" by Digital Art House*, 2020, and one international installation – "*Borderless*", created by the team of Japanese artists *TeamLab*. The installations held in Latvia were viewed in person, while the creation of Japanese designers was assessed based on its video recording.

Analogue 1. "Dream in Rezekne", 2020. Author of the installation works – Elita Patmalniece, author of the storyline – Kārlis Anitens, video artist – Kārlis Ozoliņš, producer – *Untitled Originals*.

The world of colours and images of the artist Elita Patmalniece "Dream in Rezekne" lived through the colour, sound, and light transformations Latgale experiences during four seasons – carefree summer, majestic autumn, contemplative winter, and boisterous spring (Upeniece, 2020).

The compliance of the installations with the assessment criteria for projection mapping is provided in Table 1.

The installation of Elita Patmalniece "Dream in Rezekne" almost fully complies with all the set criteria (see Table 1). The method used for projection mapping is static and is considered to be video mapping, where unique content is used and successfully created cyclically – using elements of artwork animation and graphics of Elita Patmalniece. The main non-compliance is the non-use of a special projection mapping program, which

is evident from the fact that all projections were installed as an area on a plane without tracking individual elements of the buildings – windows, doors and arches. Although the projection mapping program was not used, the location of the installation projection corresponds partially, as it fits into the dimensions of the building, yet it does not separate the elements.

Analogue 2. VI International Art and Music Festival "Seven Hills" in Rezekne, 2021.

Although the restrictions in force in the State prohibited the use of the usual format, it was possible to go on a colourful nightly adventure walk, enjoying the interplay of projections, installations and music of various themes (Poznakov, 2021). Both local and Riga lightning artists collaborated at the "Seven Hills" festival. The lighting artist Kristaps Bunga explained that: "There are several objects. Each is individual, but they are located close enough that people going on a walk may perceive it as a one great whole." (Lights have shone in Rezekne …, 2021).

The projections installation on buildings at Seven Hills festival partially complies with the set criteria (see Table 1). The installation meets such criteria as the projection mapping method used – static and video mapping, and content uniqueness – video animation of graphic elements in different styles. The cyclicity criterion is met partially. Similar to the installation of Elita Patmalniece "Dream in Rezekne", no use of programs and location of projections have been applied. The projection was displayed directly onto the walls of the buildings and the surrounding objects, which in some moments formed non-compliant overview. Also, the projection was displayed directly onto the windows of residential houses, affecting the comfort of the residents.

Analogue 3. *Vincent Van Gogh – "Letters to Theo" by Digital Art House,* 2020

The exhibition offered to view not only more than 400 masterpieces of the outstanding master created at different stages of his life in the Netherlands, Paris, Arles and Auvergne, but also to feel his world through the prism of letters that reveal the master's soul and emotions (Morozov, 2020). At the exhibition, works of art and letters were inspirited using a number of large format displays on which animations were projected, creating a 360° multimedia show. By enlivening the colour strokes and the elements of the works, a dimension of depth was created, leading into a parallel world. Everything was complemented by the adapted sound effects.

The installation *Vincent Van Gogh – "The Letters to Theo"* created by *Digital Art House* is fully compliant with all the projected mapping criteria (see Table 1). Several methods are used in the projection – static, video mapping and theatrical method, the content is created in a unique way – animating more than 400 Vincent Van Gogh's artworks and written

letters, creating a cyclical narrative. In creation of the projection mapping installation, the specific mapping programs were used and the projection was divided in segments, covering all surfaces of the room – walls, floors and ceilings.

Analogue 4. "*Borderless*" by *TeamLab – MORI Building DIGITAL ART MUSEUM*, 2021.

The Japanese art team *TeamLab* used projection mapping technology to create a magical dream world at the Digital Art Museum in Odaiba, Tokyo. The installation held in a spacious 10 000 m2 room is enlivened using 520 computers and 470 projectors.

Borderless by *TeamLab* is a world of artworks without any borders. This world changes, depending on the human presence, by immersing itself and merging in this unified world. Everything exists in the fragile, but miraculous and boundless continuity of life.

The interactive exhibits of *Team Lab* meet all the set criteria (see Table 1).

Table 1. Analogue evaluation according to criteria

No.	Projection mapping installation	Used method			Content uniqueness			Use of applications			Cyclicality			Projection location		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1.	"Dream in Rezekne" Exhibition of works by E.Patmalniece	x			x					x	x				x	
2.	"Seven Hills"	x			x					x		x				x
3.	"Vincent Van Gogh – Letters to Theo" (Digital Art House)	x			x			x			x			x		
4.	"Borderless" (Team Lab)	x			x			x			x			x		

Note. 1 – corresponds to; 2 – corresponds in part; 3 – does not correspond

Several methods are used in the projection – static, video mapping and theatrical method, the content is created in a unique way, covering the whole space and engaging the visitors in the projected animations. The concept of content has been developed including several nuances, allowing people to be immersed in the existing environment, thus adapting the location of projectors covering all the space around (360°).

Analysing the analogues, an insight was gained into the projection mapping installations and their application, as well as how accessible and

popular these installations are. The authors concluded that the most successful projection mapping installation is *Borderless* by *TeamLab*, which meets all the criteria and has gained its popularity with an advanced technical solutions and outstanding artistic performance. The analysis of advantages and disadvantages of analogues will be used for the successful creation of the advertising installation for the Rezekne Academy of Technologies.

Conclusions

Research of the topic confirms the actuality of the projection mapping method in the digital society, where visual communication creates a new form of cognition, where the attitude and perception of an individual is important. Technologies are being used in new forms of entertainment, where public contact and collaboration with technology is promoted.

Based on the expert survey results, it can be concluded that the projection mapping is rapidly taking over modern entertainment and advertising trends, becoming a visually-interactive presentation of events. A successfully designed projection mapping installation can have a beneficial effect on the audience and achieve the desired goal. The experts emphasize that with the growing popularity this technique is becoming more available to anyone who wants to create an innovative installation for a certain purpose.

As a result of theoretical and empirical research, the following criteria for evaluation of the analogues were set: method used; content uniqueness; use of programs; cyclicity; projection location. The criteria were applied for the evaluation of four analogues, determining the indicators – compliant, partially compliant or non-compliant. The criteria can be used by professionals as well as anyone interested in developing an original digital installation design.

The research is a part of the design project feasibility phase, where it is planned to develop an advertisement for the Rezekne Academy of Technologies applying the projection mapping method.

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COMMUNICATION AND LONELINESS IN STUDENT ENVIRONMENT NOWADAYS AND IN ANDRIEVS NIEDRA'S PROSE

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ABSTRACT

The theme of communication and loneliness is currently emerging as one of the main themes affecting everyone in the existing political, economic, social, etc. situation. The research reflects one of the most important questions of today (compared to Andrievs Niedra's texts written more than a century ago): how to communicate in the conditions of the transition period in the student environment, how to recognize, compare, solve the feelings of loneliness. The aim of the research is to describe and compare communication models and the presence of loneliness in today's student environment and in Niedra's prose. To carry out the research, various studies of different countries (Latvia, Germany, Russia, Ukraine, etc.) on loneliness in the student environment have been reviewed, as well as the analysis of Niedra's prose texts from the perspective of psychoanalytical, postcolonial, new historicism and comparative approaches has been implemented, a survey has been conducted at Liepāja University. When surveying students on the current topic, results have been collated and conclusions have been drawn in a comparative aspect, which allows us to propose a hypothesis that communication models and perceptions of existential crisis situations related to loneliness issues always repeat, but especially in times of change.

Keywords: *Andrievs Niedra, communication, loneliness, students, transition period*

Introduction

Today, as before, the issues of communication and loneliness are topical in the student environment, because the division of social roles and communication with group members is important in the formation of a group, which can be the basis for the sense of loneliness. A survey of groups of students of the Baltic Philology, Culture and Communication specialty at the University of Liepaja on the issues of communication, loneliness, nationalism, and cosmopolitanism has revealed that the thoughts, feelings, emotions, psychological states are similar to the prose of Andrievs Niedra (1971–1942) written at the turn of the 19th/20th century. Of course,

the ways of communication and the possibilities have changed, especially in recent years, when due to the pandemic, lectures took place online. However, the communication models are similar. Therefore, the stories of Niedra can be used as a text to be analyzed in philological studies, both by providing an insight into the literature at the turn of the century and as a kind of the psychological opportunity to compare common and different communication models and situations of students of different times, to see the similarities of the transition period at the turn of the 19th/20th century and the 21st century, based on the work of the writer.

Niedra names the end of the 19th century as the main object of his creative work that marks the period of modernity, fin de siècle (from French – 'end of century' [fɛ̃ də sjɛkl]), which is considered to be a period of degeneration, but at the same time also the beginning of hope for a new start. Rikkardo Nikolozi (1965) describes this time as the "nervous age". Degeneration, neurasthenia, and the age of modernism" (Николози, 2019: 205). During the transition period at the end of the 19th century, there were not many intelligent Latvians with higher education. One of them was Niedra, who studied theology in Tartu (Dorpat) from 1891 to 1899, thus getting to know the students' lives. The formation of the intelligentsia in Latvia is peculiar. Even though the representatives of the intelligentsia of Latvian origin can be found before the national awakening in the middle of the 19th century, the stratum of national intelligence emerged only when in the second half of the 19th century the socio-political and economic situation in the Baltics was changing, characterized by both the creative energy and economic prosperity of the society, as well as moments of crisis in the relations between the issues of nationalism and cosmopolitanism, communication and loneliness. In Niedra's prose, one of the most characteristic personages is an intellectual who comes from a peasant environment, who has obtained the diploma of higher education and knowledge of an engineer, teacher, lawyer, theology, and other fields. In several prose texts, for example, in the story "Nespēcīgā dvēsele" ["The Feeble Soul"], some autobiographical features can be noticed, also in the comments of the "Nemiera ceļi" ["Roads of Unrest"] Niedra reveals the most important aspects of the study time depicted in his work.

Methodology

In the study the qualitative and quantitative methods have been applied in the student survey, the published materials on students' loneliness in the Latvian, German, Russian languages have been looked upon, as well as the psychological, semiotic approach in text analysis, the work of philosophers, psychologists, literary scholars, such as M. Buber, J. Habermas,

J. Lotman (Юрий Лотман), R. Jakobson (Рома́н Якобсо́н), I. Išmuhametov, I. Skulte, O. Omarova etc. has also been studied and analysed.

Loneliness is one of the most topical and serious social problems nowadays, addressed by lots of philosophers, sociologists, psychologists, poets and writers. The representatives of the School of Semiotics Lotman and Uspensky (Бори́с Успе́нский) mention in the article "On the Semiotic Mechanism of Culture" that the "basic work" of culture is the structured organization of the human being's surrounding world. "Culture is the generator of structuredness, and thus it creates the social sphere around the human being that, similar to the biosphere, makes life possible, that is true – not organic, but public life. However, in order to fulfil this function, there must be a structural "stamp" facility within the culture. This function is performed by the natural language." (Lotmans, Uspenskis, 1993: 42). When being among people, contacting them, entering into a certain relationship (even escaping from contact is also a form of relationship not to get into contact), the "I" becomes oneself. Mikhail Bakhtin (Михаил Бахти́н) (1895–1975) emphasizes: "*To be* means to communicate dialogically. When the dialogue ends, everything ends [...] Two voices – the minimum of life, the minimum of essence." (Бахти́н, 1986: 19). The dialogical relationship of human beings is not only one form of expression of the essence, but a manifestation that permeates the whole language and consciousness of mankind, all relations and forms of human life, everything that has meaning and significance. There are lots of definitions of loneliness, they reveal loneliness through self-perception, experience, human condition, human reaction to social relations. I. Išmuhametovs (Išgaley Išmuhametov) in the study "Loneliness: Theoretical and Empirical Aspects of Research" has collated the theoretical approaches to loneliness, as well as describes the views of various philosophers and writers on the problem of loneliness. An article has been published on the website of the University of Latvia entitled "Loneliness, Which Can Sometimes Be a Problem": "It is a kind of cliché that we can feel lonely, especially lonely in a large crowd. Unfortunately, this is true and is spread among university students. In the study of the University of Latvia, [..] involving the first-year students of the University of Latvia, it was revealed that 16 % of students feel lonely. We can feel isolated or lonely being among our peers and knowing that we have much in common and unifying, but it is so. We feel even worse when everyone else seems careless, they behave casually, find friends quickly, join interest groups, a clutch of people you do not feel related to. For some people, loneliness is a confusing and new experience, although for some it is already familiar, and yet it causes dissatisfaction that the university has not lived up to their expectations. At university, loneliness is more common among freshmen." (Vientulība, 2006) According to the Bleib

Gesund survey, 10–15 % of Germans are chronically lonely, 17 % of young people feel lonely all the time or oftentimes, 30 % sometimes, and 30 % need others to feel good. Therefore, loneliness is a phenomenon that lots of, if not all, people know. The reason for this loneliness is often a change in life. Lonely people feel excluded, abandoned, unloved and insignificant (Einsamkeit, 2022). Almost half of the UK students are lonely. 37 % of them even consider leaving their studies for this reason. Starting a university is a new stage in one's life. It is normal to feel sometimes as if you were standing in front of a mountain of new experiences that you have to do yourself. Now the situation has become even more complicated as online courses make it difficult to find new friends and socialize. For students who have previously struggled with their mental health, the current isolation can be an additional serious problem." (Einsamkeit, 2022).

Findings

Openness to the world, desire and ability to communicate, relationship formation depends on various factors – a person's temperament, character, upbringing, environment, conditions, etc. The turn of the 19th/20th century – the transition period in Latvians' life influences the formation of human relationships and communication. What it is like in the stories depicted by Niedra during the transition period can be inferred from some of the possible communication models. Niedra's story "Nespēcīgā dvēsele" ["The Feeble Soul"] (1898) is a peculiar work of the transition period, in which communication at the turn of the 19th/20th century, as well as peculiarities of the language and comprehension, are revealed. The language is one of the possible sign systems that serves for the information transfer, coding and decoding. During transition periods misunderstandings often arise at the level of thinking and language. The main character of the story (whose prototype is partly the author himself) is the theology student Indriķis Kalējs, a typical representative of the transition period. The peculiarity and particularity of Kalējs is characterized not only by his strange appearance, especially the beard (half a page is devoted to the description of the beard, this is also the case for the author himself), but especially by the otherness in his thinking and language. Human being has a number of social needs, and only by satisfying them a human being can live a full life. One of them is the need for communication, the need to be an element in a larger "We" (Omarova, 1996: 9). The desire for contact urges Kalējs to communicate with others, find like-minded people, share his experiences, because "thoughts grow cold when they are alone" (Niedra, 1926: 64). He compares thoughts to a warm wave, to a light that opens the world. Kalējs "pierces" into one and the same thoughts and tries to dig up from them everything that happens and does not happen in the world; he

weighs up every person's name and work according to whether it is "real" or "redundant". No one is able to follow his train of thought, not because it is complicated, but because of his strange language – "he speaks and uses pretty familiar words, but in the end, it turns out that he has meant something strange with one word or another, as no one uses the word like that." (Niedra, 1926a: 57). Kalējs' interlocutors neither understand him, nor he wants to explain them. Understanding somebody's expression means to orientate oneself towards the other, to find a suitable place for it in the existing context. Words of answers are supposedly layered on each word, understanding is contrasted with expression, just like a replica to replica in a dialogue. A human being perceives the world directly and indirectly – "through what it is and through what it appears to be; through the way we are eyewitnesses and through the way we are not eyewitnesses; through what is happening right in front of our eyes and what is happening somewhere else, in time and space, but what we can imagine, guess or get information about from our various sources of cognition." (Briede-Makoveja, 1999: 140–141).

Communication takes place in two dimensions – the ordinary and the spiritual space, so perplexity can also emerge. There are four types of loneliness in psychology: cosmic, cultural, social and interpersonal. Kalējs is a bright example of social loneliness. Social loneliness is based on a deliberate disregard, non-acceptance, exclusion of a group member, tendency to divide people into their own and strangers. Social loneliness also includes the loneliness of geniuses or summits, which manifests itself as spiritual superiority; surrounding people do not forgive people of another kind, outstanding personalities are often lonely, because equal interlocutors are almost impossible. The desire for communication, the thirst for people makes Kalējs to be among people who do not understand him, laugh at him, insult, mock him. The dialogue with the corporation member Fricis Vagars is created with the help of irony, play on words, misunderstandings highlight the otherness of the protagonist. Play on words or mocking is one of the entertainments of the members of the corporation "Baltija". The method of mocking is based on a conversation and attempt during it to deride or mock the interlocutor with three methods – calling the mocked one a beast, looney or convincing them that actually they are not students.

The dialogue with Vagars reveals opposing views, shaped like a struggle between two opponents. One of the more conceptual dialogues takes place in the pub after Vagars has tried to portray a fake friend, sending wine to Kalējs' house, so that Kalējs, as a weak person, would give in to such encouragement and get drunk. However, Kalējs understands the true intentions of the "friend", even though he cannot resist the temptation. At the beginning of the conversation, Kalējs walks around the room as usual,

Vagars stands by the window so that he does not have to get engaged in a direct contact, looking into the interlocutor's eyes. The window serves as the third participant in the communication, as a neutral zone.

The dialogue becomes gradually more tense, Kalējs takes the lead because he knows Vagars' true intentions. The two interlocutors seem to swap roles – Vagars starts nervously walking around the pub room, but Kalējs uses the other window to get a chance to talk to each other without looking.

Buber (Демидов, 1995: 16) distinguishes three types of dialogue – real, technical and monologue, disguised as a dialogue. The monologue disguised is something like a discussion, when speakers are driven by a desire to assert themselves, to stand out, to make an impression of themselves, to strengthen their position, to gain victory in the dialogue. Niedra's work is characterized by a monologue masked as a dialogue, because the author expresses his views with the help of heroes in the style of sermons typical of the pastor. Vagars calls himself a man of the future, as opposed to Kalējs, who was born under the waning moon. The dialogue grows gradually into Kalējs' monologue: "Deep there in the soul of this crowd lie unknown forces. You just need a voice with the so-called wake-up call. [..] Everything can be done by a caller's voice invited by God ... no matter where it comes from, if only it expresses what is asleep in everybody, like seeds in a grain." (Niedra, 1926a: 121) Vagars is also overwhelmed by Kalējs' inspiration and enthusiasm, and he promises to become the caller's voice, to make every effort to work for the good of his people, and not to dedicate himself blindly to the ideas of cosmopolitanism. The idea of nationalism, especially emphasized in neo-nationalism, is most vividly highlighted in the story "Nespēcīgā dvēsele" ["The Feeble Soul"] in the revelation of I. Kalējs' views. His sharp opposition to cosmopolitanism, to "picking up crumbs under a stranger's table, creeping along unfamiliar footpaths beaten by others," manifests itself in an intensified way – like hatred, fanaticism. The most characteristic feature of the paranoid psychopaths described in psychology – the stubborn, obstinate defence of an idea, disregard for anything, as a result of which conflict situations arise – is clearly highlighted. In quarrels no evidence helps this kind of people, they do not accept compromise, because they see everything in the light of their hypertrophied ideas. The belief in one's opinion as the only right one becomes apparent in the affected speech, which later passes into the so-called the hysterical circle. The inability to convince the interlocutor of his justice, inability to find an echo for his thoughts, "mirroring" in the dialogue partner exacerbates the nervous excitement to the extreme. The dialogue is finished and the conflict situation is resolved by Vagars who uses the method of student corpus – slaps Kalējs across the face. He falls to the ground in convulsions, but after a short time gets up and goes home.

To some extent, this dialogue continues after several years, when Vagars presents his newspapers "Kosmopolīts" ["Cosmopolitan"] and "Populārā Zinātne" ["Popular Science"].

It is difficult for Kalējs to gaze upon the collapse of his ideals, because he has always advocated nationalism actively as opposed to the cosmopolitanism proclaimed by Vagars.

Deformed contact traumatizes the human psyche, evokes negative emotions. However, even unfavorable communication is more preferable than a complete isolation, in which the characters of Niedra's stories often end up.

Lotman in the article "On Two Models of Communication in the Cultural System" (Лотман, 1973: 227–244) deals with the interconnection of culture and communication. Instead of the model proposed by Jakobson, Lotman expands the "I–He" and "I–I" model.

In the "I–He" model, the information is known to "me" and unknown to "him", while in the "I–I" model, when the information is passed on to oneself, the second "I" is equated to a third party. The difference is that in the "I–He" system the information is exchanged in space and in the "I–I" system in time. The transmission of information in the "I–I" channel is not immanent, as it is influenced from the outside by additional codes and suggestions that guide the contextual situation. A typical example is the influence of rhythmic movements, sounds (clatter of wheels, rhythmic music) on the person's inner monologue. Lotman cites a number of examples where different fantasies arise from a steady rhythm (riding a horse). (Lotman,1973: 229)

In Niedra's prose, a large part of the inner monologues take place while the protagonist is on his way. "The mail horses trotted monotonously along the sandy road. Kalējs, wrapped up in his dust coat, squeezed into the corner of the wagon, closed his eyes and indulged into his thoughts." (Niedra, 1926a: 69) The steady, monotonous rhythm of the cart reinforces the desire to communicate with oneself, to find answers to questions. Evaluating the past from the present, Kalējs decides how to act in the future. "No, it is better when I go to the desert again for some years, where I am with my heart. It is good that I am fleeing away from all this superfluity, listening again to my heartbeat. I don't care I was made a coward, a man without any feelings of honour! It all remains outside; what people think of me does not make me either better or worse. There, in the crowd, my own unheard scruples resound. In solitude, the soul revives, its wings regenerate." (Niedra, 1926a: 70) The philosopher Jakobson thinks, "In addition to the linguistic contact, that builds a bridge over the spatial distinction of its members, there is a linguistic communication that is manifested in terms of time, i. e., it ensures the continuity between the person's past, present and future."

(Jakobson, 1999: 97) The dialogue with oneself (in thoughts and out loud) on the way, not only physically moving, but also in thoughts while travelling, merging the present, past and future, ends as the road becomes harder: "The road got harder. The horseshoes clattered more joyfully and the rider cracked the whip. The area of Ezeraine was said to be nice, so Kalējs began to look at it." (Niedra, 1926a: 70). Rhythm helps to talk to oneself, Kalējs often paces rhythmically to sort out his thoughts. In autocommunication[1], in a situation when a human being turns to oneself, either in the form of a diary or in a conversation with oneself, a different relationship is formed than in the communicative system "I–He". If information is transferred in the channel "I–He", but the sender does not change during this act, then "I–I" manifests itself as a transformation of values that transforms the "I" itself, in the process the sender and at the same time the recipient change. There can be two main types of autocommunication – internal conversation, mute, silent and vocalized, spoken out loudly. The lack of communication with other people encourages the protagonist of the story "Nespēcīgā dvēsele" ["The Feeble Soul"] Kalējs to talk to himself, these conversations are emotional, saturated with the revelations of the author's ideas. Kalējs' dialogue with himself has been created in an interesting way, in which he talks loudly to himself, addressing himself on behalf of him, using the plural 1st person form "we" and the singular 2nd person form "you". "So, Kalējs Indriķis! he finally said while standing up: now we have a man-to-man talk, but openly." (Niedra, 1926a: 110). The dialogue sounds like a question (in the form of "you") and the answer (in the form of "we"), it continues for three pages, because Kalējs is in the "moisture of speech" – a bottle of wine helps to unleash thoughts and see oneself as two sides of the personality. To some extent, this dialogue with oneself is a reduplication of the personality. In the dialogue with oneself, the so-called hidden dialogue, when there is no real interlocutor, but each word responds and reacts to that invisible interlocutor, can be well noticed. The language as a means of intrapersonal communication also promotes the protagonist's actions, as well as plays out the objections and questions of the imaginary listener.

> "• First of all: how long will you have enough money for red wine?
> • There can be no quarrel between us that we will not switch to simpler drinks. Well, after Yuletide; Vagars, for his part, will no longer send us wine. Alright. What can we write in the meantime?
> • If it goes well – the first, critical and methodological part of "Reliģija un ģenialitāte" ["Religion and Ingenuity"]." (Niedra, 1926a: 110)

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[1]   The term 'autocommunication' has been introduced by J. Lotman in his article "On Two Models of Communication in the Cultural System" (1973).

The dialogue grows from a solution to everyday problems into a philosophical speculation, the author uses the similarity of the glacier of the ice age, which pushes stones, in order to depict Kalējs' reflections on the ideal and the task of life. "Covered with moss, crumbled, but you're still dreaming of how to drag a scratch in limestone. You feel yourself how the glacier, the world propels you and thousands of other stones." (Niedra, 1926a: 111). Kalējs asks himself lots of questions that cannot be answered until he begins to feel sorry for himself: "... I feel sorry for you, Kalējs Indriķis! [..] hunched, exhausted, with a bad stomach you sit here in your darkness and write some of those superfluous thoughts about even more superfluous things." (Niedra, 1926a: 112).

The conversation with oneself ends with the conclusion that the ideals of the past are dead, the present is hopeless. Kalējs sits down at the table and starts writing – still the same article "Reliģijas ģenialitāte" ["Ingenuity of Religion"]. In Kalējs' language, when talking about topics close to him, something strange resounds, a picture sparkles, an interesting comparison appears, the rhythm helps to create autocommunication. "Formerly, there was no music in Kalējs' language. But now, by some miracle, a special rhythm has come to it; and the voice rose and sank as if on the waves of the sea." (Niedra, 1926a: 92) Autocommunication can help organize your thoughts, find answers to questions, it can be creative. One of the situations of the communication model "I–I" is the lonely human being's contact with things close to them. In a room, which is like an isolated microenvironment, Kalējs is looking for shelter during the Midsummer Night, because he feels misunderstood and lonely in the crowd. Without being able to communicate with others, he tries to do so with books. He takes a book, opens it, but the aversion towards it and towards oneself, the bitterness towards the world and destiny gnaws at the soul. Despair, chaos reigns both in Kalējs' soul and in his actions, thoughts, gestures – he scurries about the room anxiously and tries to sort out his disintegrated thoughts, looking for the answer in books: "Then he grabbed one of his books and started hurriedly to flick it through, read for a moment and sank into thoughts, read somewhere else, and thought again. His face brightened up immediately. He quickly jumped to his feet and began to flick through another book with his trembling hands, swallowed, so to say, with his eyes a couple of pages, and became even happier." (Niedra, 1926a: 87). Kalējs' search is interrupted by a call to dinner. However, he continues to look for answers to such important questions: "Why don't I have enough strength, strength of loneliness? ...What kind of water of life am I really looking for?" (Niedra, 1926a: 86).

The window as an exit to the outside world attracts his attention – "he was looking through the window over the garden past the grove in the

distance, where at the edge of the horizon the forest was wrapping itself into dusk." (Niedra, 1926a: 87). The window is also an exit to another – the inner world, through glass as a transparent type of mirror there is a typical opportunity to look into oneself. Kalējs' thoughts find an echo in oneself, the thoughts take him to a childhood friend in the past. Therefore, the window serves not only as a means of merging space, but also time. The protagonist addresses his childhood friend, catches sight of the Midsummer light over the forest and perceives it as a message, in response to his greetings and questions. Like the winter solstice, Midsummer's Eve is also a sacral timespan in the profane flow of time, and at such a special time, the glow of Midsummer fire is no longer just external – it reflects into the protagonist's eyes, and he finds his "fern flower" – the answer that is the task of his life. In this communication, the difference between a person who speaks to oneself and to the same person after a moment is clearly manifested – Kalējs has completely been transformed, the joy, excitement and peace radiate from him.

In situations when a human being experiences loneliness particularly bitterly, various compensatory or protective reactions, behaviours and forms of communication can develop, in which dialogues with phantom partners, personalized animals, objects, images, etc. play an important role. "For a human being to go into loneliness it means to invite oneself on a journey in which they notice themselves and their world." (Raudive, 1940: 227) – writes Raudive in the book "Dzīves kultūrai" ["To Life Culture"] and points out the most essential differences between a lonely and an isolated human being: "An isolated human being feels desperate, a lonely human being is calm and enlightened. An isolated human being sees a meaningless emptiness in front of them, a lonely human being – images of their inner world. In isolation, a human being is unable to think or work, but in solitude all great thoughts and remarkable deeds arise. The isolated one seeks the society to fill the meaningless emptiness of their life, the lonely one meets up with people to share their spiritual wealth. The isolated one needs another's help, the lonely one is the one who helps the other." (Raudive, 1940: 224).

Conclusions

Today, young people use a variety of technologies to communicate. However, they acknowledge that they also feel lonely in communication. As part of the research, a survey of students was conducted at the University of Liepaja to find out whether the feelings of loneliness are relevant today and whether it is possible to compare them with those described in Niedra's prose at the end of the 19th century. The theoretical research dedicated

to the problems of students' loneliness and communication shows that mostly the feelings of loneliness, exclusion, alienation, isolation occur in groups of freshmen. Young people today use various technologies to communicate, but they also admit to feeling loneliness when it comes to socialising. The research involved a survey of students at the University of Liepaja over several years (2015–2021), working with students of Baltic Philology, Culture and Communication and Writing Studies, and discussing the theme of loneliness in Latvian literature in lectures. It was found that the feelings of loneliness described in Andrievs Niedra's prose at the turn of the 19th/20th century are similar and actual also today. The survey asked: Are communication and loneliness issues relevant to you as a student? Are literary works (of different genres) able to create feelings of communication/loneliness? Do you need to talk about them in literary studies? Should the discourse of communication/loneliness be discussed more in literary studies now? Students admit that especially in times of change (such as the current Covid-19 and the Ukrainian War) similar to the end of the 19th century, when an intensive transition from feudalism to capitalism took place in Latvia due to socio-political, economic, psychological, etc. problems, the communication patterns and feelings of loneliness are similar, so when looking at work dealing with these problems in literature studies, one can get to know the literary work of the period and compare one's own and literary characters' feelings, thus finding similarities and differences, and possibilities how to react in communication situations. In Niedra's stories "Nespēcīgā dvēsele" ["The Feeble Soul"] and "Vilis Vālodze", similar to other author's prose work, the raised models of communication (including autocommunication) and feelings of loneliness are described using approaches of communication, psychology, semiotics, etc. The characters depicted in Niedra's prose encounter loneliness as a negative experience that characterizes the inability to form "normal" relationships with other members of the society during the transition period.

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INCLUDING THE EMOTIONAL POTENTIAL OF LITERATURE IN POST-CRISIS EDUCATION

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ABSTRACT

Contemporary situational circumstances, with the global Covid-19 pandemic crisis and the ongoing war that has resulted from Russia's invasion of Ukraine, have brought about social, cultural, and psychological transformations that are, as of yet, little understood but already affecting different aspects of the contemporary school learning processes. Rational, analytical, cognitive, reflexive, and emotional experience are needed to ensure that difficulties within the crisis ecosystem do not cause a lessening of the human emotional experience in difficult times. Diverse emotional experiences are especially needed, the supply of which is reduced by both the limitations of interactivity imposed by the specifics of the media information space, which mostly reflects the realities of the crisis and are predominantly negative.

In the face of this protracted crisis and the implications of new communication technologies, the article explores some ways to manage emotional experiences, so as not to lose sight of the diversity of human relations. It looks to address how we can compensate for the minimization of diverse emotional experience in teaching and learning in situations of social crises. The article pays attention to the potential role of literature as a way to build sustainable post-crisis social relationships. It proposes to reevaluate the role of literature in education and explore its use not only as a cognitive source for rational and critical thinking but its potential for cultivating moral emotions that enhance social solidarity and civility.

The case studies it presents evaluate the interpretation and misinterpretation of some classical works of Latvian literature in schools and beyond, in the media and society.

Keywords: literary fiction, emotional experience, transformation, crisis, education.

Introduction

There are groups of circumstances that mobilise attention for new approaches in the educational process. They are both situationally transient and permanent in character and are mainly linked to the destabilisation of the social ecosystem caused by a crisis, which must be recovered from in the name of post-crisis sustainable development. A crisis is usually referred

to as a set of events that we perceive as a dramatic turn, mostly caused by a negative change that affects the stability and future development of a natural or social ecosystem. The unusualness of the circumstances and the situation that crises cause call for an explanation of the different realities and for new meanings to be given to what is happening. The need for reinterpretation grows, a need which is less prevalent when living under normal conditions. In connection with the world economic crisis of 1933, the Latvian philosopher Teodors Celms described that crisis as "a break in the course of a development, after which this development either goes in a new direction of growth or approaches the abyss of non-existence" (Celms 1933, 3).

Currently, in the background to education are the successive crises of the global health pandemic Covid-19, spanning now two years (2020–2022) and still unresolved, followed by the brutal military crisis that has resulted from Russia's 24 February 2022 invasion of Ukraine. Each of these two crises of the 21st century have their own impact on social ecology, each with its own emotional mood and experience that affects the education system. They each require reflection on the role of education, in terms of both the causes and the consequences of these social crises.

The main properties of the ecological crisis caused by the Covid-19 pandemic can be seen as the impact of self-isolation, distanced leaning, the course and consequences of the disease, the impact of governmental restrictions on the socio-emotional development of pupils, as well as on the quality of the education system itself. The effects of war, on the other hand, cannot yet be grasped at this early stage. Russia's February 24, 2022, invasion of Ukraine has been studied much less than these crises of health. The experiences and fears of war, violence and devastation enter schools not only with the media, but also with the recollections of Ukrainian refugees, who are present in many Latvian educational institutions, as well as by support measures for Ukraine and protests against the devastating invasion. By bringing to the forefront emotional experiences uncharacteristic of peaceful everyday life, both crises manifest ignorance, compensatory disinformation and misinformation, the mood of fear, hatred and anger, as well as sentiments of pain and horror.

These changes in education are propelled by the availability and possibilities ensured by information and communication technologies. According to the often quoted media researcher Marshall McLuhan, media technologies are a message in themselves, they have an impact on thinking, perceptions of the world, and on forms of affection (McLuhan, 2012 [1967]). The conditions of a crisis affect the amount and availability of information in the media; when the conditions of survival lead to situational thinking and emotions, they cause volatility and hinder a constant normative experience.

While not denying the possibility of positive emotions in crisis situations, such as mutual support, help, compassion, empathy, and gratitude, research in media and school life is nonetheless dominated by adaptation discourses, such as the effects of distance learning in a pandemic or communication-induced violence in schools, mental health problems, "cyberbullying" etc.

These and other conditions of a crisis call for ways to compensate for emotional changes also brought about by technologies, assuming that some human evolutionary experiences must be preserved in the name of a sustainable social ecosystem, while other situational influences may be allowed to weaken. Realising that the changes caused by modern crises will take time to master, cognitively and reflexively, this article offers insight into a narrow section of the educational process. Namely, attention will be paid to the potential of cultivating diverse human emotional experience through the learning of literature. Given the weakening of emotional resources, especially favourable ones, as a result of crisis conditions, the article will explore **compensatory sources** for the development of a full-fledged emotional life and self, beyond the situational, pragmatic realities of everyday life. Based on an in contemporary academic research, the article will firstly explain the concept of emotions, secondly, describe the transformative possibilities of literature, and, thirdly, present case studies that evaluate the potential for, and misinterpretation of, Latvian literature in maintaining empathy, solidarity, as well as grit and resilience.

1. Concepts of emotions and emotional experience

Current crises and technological revolutions call for a review of the present, and the adaptation of future, approaches to education. The strategic goals of education are being discussed (Peters, et al. 2021, Tesar, et al. 2021, Orchard, et al. 2021, Jandrić, et al. 2021 etc.). At the heart of this debate is the orientation of education: how to connect its pragmatic existential orientation with the goals of sustainable development, how to make the school a place "to think deeply about ideas, find and pursue passions, engage in community with others, enjoy leasure, and reckon with our own mortality" (Hytten, 2021, 1236). At the core of this question is how to make the school a place that helps one attain fulfilment, where "we build a foundation for meaning, not primarily for competition with peers for artificially scarce rewards" (Ibid.). In this trend, towards full existential post-crisis education, emotional experience plays a significant role.

Why exactly does emotional experience need to be addressed? Emotions are recognized as an evolutionarily-attained **affective** mental state, which characterizes a direct reaction to a situation, participates in its evaluation, the forming of an attitude, as well as, accordingly, influences one's actions. Regarding emotions as a particular mental state Andrew Ortony,

a researcher of emotions, highlights "three features: it must be intentional (i. e., about something), it must be valenced (i.e, positive or negative) and it must be conscious (i. e., experienced) (Ortony, 2022, 51). Emotional experience involves a set of positive and negative effects, and a variety of experiences that are more or less conscious. Although it is difficult to find a sufficiently precise definition of emotions, due to at least three aspects by which they have been studied (biological, psychological, and the semantic aspects of language), there is a certain spectrum of emotions lexically represented in natural language.

The role of emotions in social and moral life has long been perceived and appreciated in history. David Hume (1711–1776) already pointed to the emotional nature of moral evaluation and its connection with the "internal sense of feeling" (Hume, 2017 [1751], 3). Also, in Immanuel Kant's (1724–1804) concept of rational ethics feelings of dignity play an important role (Kant, 2001 [1788], 258–261). In turn, sociologist Émile Durkheim (1858–1917) acknowledged the role of emotional experience in the ritual, as a basic condition for the establishment of social norms (Durkheim, 2008 [1912]). Emotional experience is recognized as an indispensable way to practically strengthen moral orientation and values in education.

2. The transformative role of emotions

The emotional traces and impressions of the realities of crises in modern school practice are different, and not always favourable. Pedagogical research focuses more on the negative emotional experiences of bullying and cyberbullying, which exist in schools, and anxiously observe their impact on the victims' mental health. According to Elizabeth Hutson, bullying victimization causes negative "emotional experiences – sadness, decreased self-esteem, embarrassment, fear, suicidal thinking, anger, feeling hurt, loneliness, powerlessness, helplessness, and confusion. Overall, these results were similar to those obtained from quantitative method studies, apart from the feeling of embarrassment" (Hutson, 2018, 51). Particular attention is paid to the anonymity that cyberbullying entails, and its consequences. Given the situational diversity of the emotional experiences of crises, contemporary educational research emphasises the role of emotion management (Lively and Weed, 2014). Not only is emotion researched, and described, but ways to increase socially and humanly significant positive emotions are also being sought. For example, Positive Psychological Interventions (PPI) offer ways to reduce anxiety and stress, as well as to increase favourable experiences, which are not always attainable in real relationships (Moskowitz, et al. 2021).

The significance of positive emotional experiences is evident in the context of transformative pedagogy, the foundations of which were laid

by Jacques Mezirov in the 1970s. While Mezirov's concepts apply mainly to adult education, distinguishing between formative education at an early age and transformative education for adults, in almost half a century of development, the concepts of transformative pedagogy have been extended even to preschools.

Transformative pedagogy is a process of social learning which develops and assists one to apply feelings, rationale, autonomous thinking "in a collaborative context" and emotional attitudes towards the world (Mezirow, 1997, 8). With it, a diversity of possibilities is emphasized; that, there is no one way to see the world, oneself, relationships and situations. At the same time, it encourages a fuller, happier, life through personal transformation. And, reflection, communication and emotional experience play an important role in initiating this transformation.

An explanation of transformation can be found in the dialectics of the German philosopher Georg Wilhelm Friedrich Hegel, characterised by the concept of sublation (Aufheben, in German). Sublation (Auheben) means a different kind of survival in the process of development, which can also be attributed to the process of self-formation in transformative pedagogy. Creation, Hegel explains as being born anew and, at the same time, as remaining. With varying stimulus, in the act of creation, something disappears (Verschwundensein), but it does not become completely non-existent; it remains in the following anxious, existent and non-existent, contradictory composition in a subliminal form. Sublation is recognized as one of the main concepts in the philosophy of development, which is strictly inseparable from nothing, from the non-existent. Something of the existence denied in the creation of a new existence remains in its composition, but in a different, indirect, way. It remains as a new formation and experience. From new units, and from the units preserved from that previous state, a new identity is formed – it is the same and, at the same time, different (Hegel, 2008 [1832], 100–101).

Creating, forming and transforming, is particularly stimulated and motivated, as has been emphasised on several occasions, by the changes brought about by a crisis, in which cognition, rational reflection and emotions are involved. Among the many reality factors, literary fiction e in education has a transformative function and participates in the socialisation of the self.

3. Literary fiction in the formation of emotional experiences

A literary text, which exists in the form of language, is to be regarded as an ontological phenomenon, and this is a precondition for its interpretation and the deriving of meaning. The literary text is described as an ontological reality in the works of the prominent German literary scholar Hans Ulrich

Gumbrecht: "By 'ontology of literature' I mean fundamental stances about how literary texts – as material facts and worlds of meaning – relate to realities outside of works themselves (Gumbrecht, 2012). Related to this reality is a certain atmosphere, a mood (stimmung), which forms the hidden potential of literature and is involved in its expenditure and the making of meaning. The potential of literature allows it to merge with the reader's development of experiences, thus it becomes an essential part of their existential experience (Gumbrecht, 2012, 18).

As an original ontological reality, a literary text has several qualities in the context of culture and education – cognitive, aesthetic and morally reflexive.

Knowledge of the history of national and world literature, of writers, basic notions of the theory of literary work (genres, language, metaphors, etc.) and more, first, forms a group of cognitive goals. Secondly, literary works are accompanied by a variety of emotional experiences, which are gained in the process of identification and empathy. Third, a poem or narrative is able to provide a reflexive intellectual echo that goes beyond the direct perception of the work of art and expands the horizon of consciousness for the reader. These emotional and reflexive levels usually converge, complementing each, and linking them creates an emotional and intellectual experience for transformation and self-identity formation.

A contemporary affective turn in literary research emphasises the role of empathy. Empathy allows for the explanation of the transfer of emotional experience from the text to the reader in the process of learning that literature. Empathy is usually understood as the echo of each other's feelings and thoughts; it is associated with sensitivity. Research on the topic covers both psychology and the aesthetics of empathy and moral values. Empathy is a capacity of the brain that modern neuroscience partly explains by the presence of mirror neurons (Heyes and Catmur, 2022). A mirror neuron indicates an innate physiological ability to mirror and mimic the other. Empathy is the ability to place one's self in the situation of the other and to feel their emotions. Reading, and learning literature, allows one to access the other's experience and to make it a part of their own (Mar and Oathley, 2008, 181). Other experiences include a variety of cultures, including historical narratives, and a variety of individual stories that are not available to us by living in a close ecological neighbourhood and local situation alone.

Contemporary research focuses on the relationship between empathy and being moved. The complex of emotions labelled as *kama muta* (Sanskrit) or *being moved*, is conceptualised as an emphatic construct to express being elevated, touched, inspired and consists of feelings of sympathy, compassion, tenderness, warmth, and soft-heartedness (Zickfeld, et al. 2019).

Close to empathy and 'being moved' is the concept of emotional contagion, which indicates the transfer of emotion from sender to receiver. Usually contagion is studied for direct contact between sender and receiver, including automatic affect mimicry. Researchers emphasise the dual nature of affective contact -- the automatic response and social appraisal that make up the emotional experience (Wrobel and Imbir, 2019). Emotional contagion, also called the theory of emotional mimicry, refers to a direct and impulsive emotional experience, to a thrill that simultaneously causes social reflection that reinforces the experience of values and norms. Imitation or mimicry and social appraisal are recognized as the main mechanisms for gaining emotional experience, in which boundaries in a recognized or unacceptable culture are established.

Literary works are used in the study of psychological phenomena, trusting them as a form of emotional and imagined life experience: literature, like any discursive formation (text), is not a copy of reality. As Jürgen Habermas puts it, "the world of experience *is aestheticized*, that is, freed from the routine of daily perception and from the conditionality of daily action. Therefore, it is recommended to look at the relationship between morality and beliefs as one part of a more complex interconnection" (Habermas, 2006, 289-290). Literary fiction offers a different, diverse, interdisciplinary experience. It achieves an intensification of, and a compensation for, emotional experience, which has been studied relatively little in the context of literature. While more research has been conducted in relation to the emotional experience of music, such experiences can also be observed in other forms of art, including literature.

This function of literature, to be a source of emotional experiences, is possible due to its communicative nature. Literary researchers Raymond A. Mar and Keith Oatley recognize literature as a simulation (modelation) of social life. The experiences of social life are modelled in the form of abstractions and a simple story, which, encoded in characters and plots, allows it to be perceived emotionally and to be reflected in the context of one's own life experiences. The characters created in the imagination and imaginings of literature, and the arrangement of events in the narrative (fable, plot), reveal actions in the perception of the reader of which appropriate emotions naturally arise. Identification with images allows oneself to be projected "into the represented events" (Mar and Oatley, 173). Identification, co-experience, takes place automatically and effortlessly. Narratives and characters engages in the events described and represent "events as we were part of them" (Mar and Oatley 2008, 183).

The experiences induced by literature have been relatively widely studied in philosophy, psychology, psychoanalysis and practised in psychotherapy and other fields. The *catharsis* of Aristotle (384–322 BC) is

one of the concepts that includes the course and functions of emotional experience, as well as its transformative role. Aristotle assessed this concept in the explanation of the purgation of tragedy in "Poetics:" "Tragedy, then, is an imitation of an action that is serious, complete, and of a certain magnitude; in language embellished with each kind of artistic ornament, the several kinds being found in separate parts of the play; in the form of action, not of narrative; through pity and fear affecting the proper purgation of these emotions. By 'language embellished,' I mean language into which rhythm, 'harmony' and song enter. By 'the several kinds in separate parts,' I mean that some parts are rendered through the medium of verse alone, others again with the aid of song" (Aristotle, VI). The mood of mediaeval sacred art and sacred life stories also intensified the experience of holiness and religious faith. Romantic art has contributed to the formation of transcendent, outside of the everyday, experiences of the "starry sky" and of longing for "blue flower." Modern literature also offers a versatile transformative experience. Although it no longer is expressed in such romantic passions and longings, contemporary fiction does portray the diversity of lifestyles and emotions.

4. Interpretation and misinterpretation of the emotional potential of Latvian classics

"Serious, real, poetry educates people, makes their feelings more acute and, through this, provides the community with a larger number of useful, prudent and sensitive citizens," wrote Latvian poet and publicist Jānis Poruks (1871-1911). (Poruks, 1925, 275). At the same time, along with this educational and transformative potential, Poruks emphasised the role of the aesthetic experience. These findings of a Latvian intellectual greatly help to clarify how to teach literature more effectively in schools: by preserving its artistic value and, at the same time, utilising it to enrich pupils, with those experiences that differ from everyday life and broaden their horizons of consciousness.

In Latvian society, discussions about the functional goals of literature have been held since the 1890s, with Janson's (Brauns) "Thoughts on Modern Literature" (Jansons (Brauns), 1892 and 1893), with the polemics of two writers, Aspazija and Rūdolfs Blaumanis, in 1895 in the newspaper "Dienas Lapa" (Aspazija, Blaumanis, 1895) and other ongoing debates about the role of literature. In recent decades, Poruk's story "Battle at Knipska," abatu the experiences of a fragile and sensitive school boy colliding with the brutal reality and tragic losses of that "battle," has been reinterpreted several times in school curricula and mass media public. In 2011, the periodical "Akadēmiskā Dzīve" published an article by the anthropologist Klāvs Sedlenieks, titled "Was Cibins a Nice Fellow?" (Sedlenieks, 2011).

Looking for an answer to the differences between violent and peaceful societies (communities) and the anthropological characteristics of Latvians in the context of this division, Klāvs Sedlenieks sees a "strange contradiction." "On the one hand," he writes, "the value of a peaceful worldview is emphasised and citizens, especially students, are encouraged to learn from the meek and supposedly life-wise, yet weak boys. At the same time, this knowledge is provided in the context of a societal structure that inevitably fosters a spirit of competition and individual achievement, with less emphasis on the ability and need to build a peaceful and/or cooperative society" (Sedlenieks, 2011). The perception of "strange contradictions" contains an important key for explaining the functions of literature. As already mentioned, fiction offers an imaginary reality, created through the means of artistic language, which includes an often idealised reality that differs from the everyday trends and goals. The work of art is not recognized as a direct pragmatic construct, but as an offer of a different, more sensitive reality, which, by expanding the emotional and rational experience, facilitates human orientation in an ecosystem of complex choices. Underestimation of the artistic specificity of literature leads at best to "strange contradictions" that encourage thinking and, at worst, to vulgarisation, which are discussed below.

In 2017, the tabloid "What's New" (Pjats, 2017) attracted attention to a publication, as well as subsequent conversations, in which Gunta Ancāne, Professor of the Department of Psychosomatics and Psychiatry at Riga Stradins University, expressed his opinion on the inadequacy of several Latvian classics in promoting a life that is "beautiful, good, based on success, achievements and prosperity" (LR1 in October 2017). She placed in her list of "useless educational literature" Jānis Poruks' "Battle at Knipska," with its depiction of the death of the already mentioned Cibiņš, a fragile, emotional, wise, but poor, always hungry boy, the poem of Vilis Plūdons "Son of a Widow", Sudrabu Edžus "Crazy Dauka," and other works with that depict curious, peculiar, and/or tragic deaths of poor young perspective strivers. According to the professor, the teaching in schools of these and other Latvian classics overly emphasise "inability, a pity for failure, sympathy… the poor one is already the good one, as he has had a hard time" (LR1 ziņas 2017). In opposition, Iveta Ratinīka, a teacher of literature, in the radio discussion called such an approach dangerous and "utilitarian dilettantism" (LR1 ziņas 2017). She defended a teacher's freedom to teach works of art instead of open didactics, as well as recalled the moral value of fragility, vulnerability and sensitivity.

A discussion about the aforementioned literary classic has continued during the current crisis. In a 2021 article, on the website "nra.lv," journalist Ben Latkovskis wrote on the government's assessment of Covid-19: "The problem

for Latvians is that both Cibiņš, Gatiņš and Baiba(-iņa) [other characters from Latvian literature, of Rainis (1865–1929) S. L.] are very nice, sincere people (literary characters), but they are completely unfit as leaders. There is no doubt that Buņģis, Uldis and Zane would be much better leaders, but in the eyes of the average Latvian they are not the ones we would like to see as our leaders. Thus, we will have to live with Cibiņš in the role of leaders. They may not be effective, but are calmer for the soul" (Latkovskis 2021). In the same year, an ironic attack on Poruk's Cibiņš was repeated on Twitter (account: "Eva Mičerevskiene @pepija Feb 1, 2021). The statement read: "The real villain is Cibiņš. An envious, thieving, snitch. Proud, unwilling to ask for help. Buņģis is a normal guy, one who treats buddies to smokes. Cibiņš, out of pure envy, smacked him with a snowball in his eye, because Buņģis had a better life."

Criticism, of the classics taught in schools, have also focused on Anna Brigadere's play "Sprīdītis." The play portrays a young hero, who after having overcome obstacles, achieves a fairy-tale success but, nonetheless, returns to his homeland because he realises that happiness requires a belonging of his own, to his family, home and country. Similarly, French writer Michael Huellebecq in his novel "Serotonin", has also pointed out that belonging is a problem for modern European society (Velbeks, 2022). He has portrayed an identity in which there is no sense of belonging to a place, a country, a profession and a family. The protagonist ultimately fails in finding a cure for this illness of loneliness. He continues to have nothing of his own, to care for and to share. Here, the tragedy of loneliness and alienation is seen as a lack of a sense of belonging.

Feelings of belonging are intensified in times of crisis, when joint action is required to overcome that crisis and its consequences. This is especially emphasised by the works of two different genres written in the first decades of independent Latvia: Aleksandr Grīn's novel "The Blizzard of Souls" with its portrayal fon the scourge of the First World War, and Alexander Čaks' emotional poem "Affected by Eternity," which draws inspiration and life-affirming enthusiasm from those war events (Čaks1988). Every page and line in Čaks' poem engages in identification with the severity, endurance and heroism of the Latvian riflemen in their battles. It invites compassion for the deaths of those thousands of young soldiers, but at the same time allows us to experience pride in those "strong souls" (46). It asks its readers to feel gratitude for the sacrifices they made in the name of freedom and victory. Moreover, as expressed in the title, it suggests that it's the reader's duty to preserve that memory of sacrifice. Unlike Aleksandra Grīn's novel on the same historical events of World War One, with its detailed descriptions of the plight of refugees, of domestic scenes of suffering and of realistic representation of battles and losses, Čaks poem can be seen as

a symbolic monument to an emotional experience, oriented in the name of belonging and empathy.

While literature is not the only catalyst for a full-fledged emotional experience, one cannot ignore its direct and indirect role in the formation of a humane social ecosystem. Kate Tsurkan, an American writer living in Ukraine, has shared her thoughts on the role of literature in a severe war crisis (New Yorker, 30.03.2022). At the same time as she upholds the potential of literature to transcend suffering, she points out that the needs of a normal life are not comparable to the ecology of survival in war. Although real experiences of relationships and emotions differ significantly from recordings and literary texts, they serve as a source for cultural values, which can deter or reduce the devastating effects of a barbaric social crisis. While recounting the reality of the war she still highlights the potential for literature to cultivate humanity and civility: "A lot of our belongings are still in the apartment, including my library, which I was once so proud of. Every time I go back to take something, I can't help but wonder: Do I really need this? If I didn't take it with me the first time, then why now? What if the Russians come to Chernivtsi tomorrow and I have to run for my life? Is that book of Paul Celan's poetry going to save me from getting raped or murdered? The answer to all these questions is obvious. There is no going back to what we once thought was normal. None of us will look at our lives in the same way again" (The New Yorker, 30.03.2022).

According to the previously discussed theoretical findings on the functions of literature and their effectiveness in education, works of art are considered to have irreplaceable potential. Likewise, classics of Latvian literature offer a diverse spectrum of meanings and emotional experiences; they contain contradictions, conflicts, and clashes which suggest opportunities for reflection and transformation. In the face of changing reading habits, and when taking into account new communication technologies and pragmatic circumstances, this discussion raises the question of what can and should be the goal of teaching literature.

Conclusion

Literature has the potential to provide an experience of joy and laughter, an emotional experience of reverence and holiness, and an awareness of compassion, fragility, vulnerability, and the promotion of belonging and resilience. In short, the experiences literature can provide can assist in the formation of a full-fledged, and humane, identity.

Crisis situations increasingly require the ability to cooperate, engaging and often to even sacrifice in order to overcome crisis. The emotions of hatred and pain, belonging, cooperation, compassion and resilience gained

in the adventure of both life and literature are useful for stimulating endurance and prosocial activity. The role of teachers and experts in the selection of works of artistic quality, the reading of which can ensure these higher literary tasks, is a crucial responsibility. By gaining a better view of the field of classics and contemporary literature, experts share this responsibility with teachers; they can share the responsibility of selecting the most appropriate works for an emotionally positive experience, which would allow pupils to learn about the diversity of emotional experiences. No less important than the choice of literature is a deep interpretation and understanding of its context, in the far-sighted moral and existential experiences it may provide.

It is apparent that publishers too are aware of how important it is that they provide quality children's books. This is revealed by Alīse Nīgale, whose children's publishing house "Liels un mazs" was recognized as the best in Europe at the Bologna International Children's Book Market in 2022. She emphasises the huge responsibility they have in providing quality books as "spiritual food." They must ensure that "children, after reading a book, have a sense for conversation and feel that they are getting further and better as human beings" (Meijere, 2022, 25).

The teaching of literature has a role in the development of language and cognition. Additionally, when emotional aspects are taken into account, education in literature has potential to implement important transformative and self-transformative goals for the post-crisis education.

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30 YEARS AFTER THE BARRICADES OF JANUARY 1991: MEDIA EVENT FOR THE TRANSFER OF COLLECTIVE MEMORY AND KNOWLEDGE OF HISTORY

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ABSTRACT

In the middle of pandemic, January 2021 marked the 30th anniversary of the Barricades of January 1991. Media events have the function of transmitting social memory and teaching history to an audience of children, young people, and people who do not have these memories in their personal experience. Sociologist John Thompson introduced the concept of 'mediated historicity' almost two decades ago. He explained that most individuals in Western societies gained their knowledge on 20th century history primarily from media products (Thompson, 2004).

The study analyzes the discourses of remembrance of the Barricades in the most popular media in Latvia: "Latvian Television", www.delfi.lv, Channel TV, www.tvnet.lv, "Latvian Radio 1" (Media Literacy of the Population of Latvia: Quantitative Research, 2020), paying particular attention to the content of the remembrance (exhibitions, concert programs, memories, documentaries, photo competitions for young people, book openings, etc.).

The theoretical basis of the research is formed by the theoretical approaches of media event and mediated historicity. Media messages was analyzed with the discourse historical method by Ruth Wodak. The research results confirm the impact of the current epidemiological situation on the sense of the commemoration forms and the emotions of the participants, new educational dimension and orientation towards the past.

Keywords: Barricades of January 1991, commemoration, media, media event, mediated historicity pandemic

Introduction

Past three decades represent sufficient distance in time so that an academic view of events is possible; at the same time, as these events are still recent enough individual memories are accessible, in terms of experience, collective memory and sense of identity, and these are exchanged within a community of memories. Moreover, the time of the pandemic adds

an additional emotional dimension to this anniversary. As momentous historical events recede ever further into the past they often lose their enduring presence in individual thought, in communication with other involved individuals and the public in general. The media, on the occasion of significant anniversaries provide an impetus for both remembering the past and reassessing it.

Barricades of January 1991 in history and social memory of Latvia have not only the significance of a historical turning point, but also a special emotional tone.

Collective memory of the period of the Third Awakening and, in particular, of the Barricades of January 1991, greatly contributes to constituting a positive identity, as this historical period was characterised by great national self-sacrifice and heroism. The historian Daina Bleiere with colleagues considers the January Barricades to be the highest point of confrontation with the opponents of independence. Soviet military units attacked the Television Tower in Vilnius the night of January 12/13th seeking in this way to repress the independence movement in Lithuania, killing 14 individuals and injuring a further 110 civilians. They continue explaining that, as soon as the news of this attack reached Riga, Dainis Īvāns, the first leader of the Popular Front of Latvia (PFL) called upon the residents of Riga, to protect strategically important installations. On January 13th approximately 500 000 persons took to the streets of Riga to protest violence which had taken place in Lithuania. Streets leading to key installations were barricaded by heavy goods vehicles and by heavy farming machinery. Individuals came from all over Latvia to man the barricades. The barricades in Riga were manned until January 27th. Members of the OMON unit often clashed with the defenders. The most aggressive attack took place on January 20th when this unit took the building of the Ministry for the Interior by assault. A total of six lives were lost during the period of the barricades (Bleiere et al., 2005). Historian Talavs Jundzis explains, that non-violent resistance was the only real force that Latvia was able to use against the political, economic and military power of the USSR. At that time, Latvia was not proud of theoretical knowledge in the field of non-violent resistance, however, the name of Mahatma Gandhi and the movement of non-violent resistance led by him was well known from the books (Jundzis, 2008). In the context of regaining Latvia's independence, the parallels with Mahatma Gandhi's non-violent resistance in the struggle for India's independence in the first half of 20th century are drawn frequently both in media and academic environments thus emphasizing the importance and global scale of the events in Latvia and in the Baltics.

When history is told through media events, media become as history teachers. Sociologist John B. Thompson defined mediated historicity almost

three decades ago. Mediated historicity means that people's sense of the past become increasingly dependent on an reservoir of mediated symbolic forms; most individuals in Western societies have derived their sense of the major events of the 20th century primarily from books, newspapers, films and television programmes (Thompson, 2004).

At its core, research is based on the classical approach to media event analysis by the theoreticians Daniel Dayan and Elihu Katz, considered to be a fundamental framework in media and communications research. It was developed in the 1970s, seeking to explain the effect of television. Mediation practices for the Olympic Games, the funeral of US President John Kennedy, the wedding of UK Prince Charles and Lady Diana, the funerals of Princess Diana and Palestinian leader Yasser Arafat, and other significant events were analysed based on this approach (Dayan & Katz, 1995). D. Dayan and E. Katz define media events as breaks in routine that interrupt the normal broadcasting flow and lives of the audience, are broadcast live, are organized outside of the media, and are planned in advance. They describe media events as the 'high holidays' of the mass communications, contrasting them with the day-to-day routine of media work. Theoreticians write that the audience perceives these events as invitations, almost as direct orders to interrupt the daily routine, engaging in the 'holiday' experience. Classical theory can be applied to researching media event in the press or in textual digital media.

The classical analysis of media events focuses on three participants. Organizers of the event who bring its elements together and propose its historicity; the broadcasters who re-produce the event by recombining its elements; and the audiences, on the spot and at home, who take the event to heart. The investment of time and resources of each element determines the scale of the media event (Dayan & Katz, 1995). Media events can be classified into three dimensions or scripts: conquest, contest, and coronation. Conquest includes live broadcasting of "giant leaps for mankind". These are rare events, great achievements like first man on the Moon. Contests are linked to sports and politics like Olympics or presidential debates. Coronations are parades (funerals, remembrances), they are all ceremony (Dayan & Katz, 1995). All anniversaries correspond to the coronation dimension, as ritualized remembrance and expression of honor are at the heart of the event.

Methodology

30th anniversary discourse was analysed using discourse–historical method by Ruth Wodak. 44 media messages dedicated to the 30th Anniversary of Barricades from January 2021 was analysed in the most

popular media in Latvia at that time: LTV1, Delfi.lv, TV3, TVNet.lv, 1st Baltic Channel, LTV7, LR1 (Media Literacy of the Population of Latvia: Quantitative Research, 2020).

Discourse–historical method is interdisciplinary, problem-oriented, allows combining different theories and methods. During the research process the study is constantly moving between theory and empirical data. Historical context is taken into account when interpreting texts and discourses. The usefulness of the results is an important goal of the method; they must be accessible and usable and communicated to the society (Wodak & Reisigl, 2009). Methods main advantage is its ability to bring researcher close to the results, as the process of data interpretation is continuous, from data acquisition to the formulation of conclusions in written form.

Results

The 30th anniversary of the barricades is marked by the time of the pandemic. This could be called the victory of mediated forms. The format of the commemorative events in the context of this year was characterized by virtual or outdoor nature.

The Minister of Justice Jānis Bordāns explained at the time that *"taking care of public health and observing epidemiological safety measures, we had to change our initial intentions on how the January 1991 barricades commemoration events would be organized. However, no one had cancelled the opportunity to remember, tell and be aware of what a great importance have the events of 1991 barricades in the history of our country. These events must not be forgotten and must be passed on to future generations as an integral part of a Latvian's identity. Therefore, this year, I invite individually everyone to proudly pay homage to the memory of our people's heroes, because our main objective is to remember their investment in the recovery of Latvian state independence"* (Delfi.lv, 2021b). Only flowers were allowed to be laid on Bastion Hill in front of the memorial stones of the fallen. On the contrary, the range of virtual and outdoor events was very wide and full with content. For example, a scientific on-line conference "X-Hour. Barricades are 30", a virtual exhibition "Fifty unique photo documents" took place on the barricades commemoration days, in turn, outside of the capital an outdoor installation "Memories and Honour" was exhibited in the historical Dobele Market Square, while a musical sound and light performance "Barricades are 30" took place in Kocēni Municipality after dusk, as well as a museobus dedicated to the remembrance of barricades visited Latvian regions. Public television LTV1 broadcast the concert performance "Reconstruction of the feelings of 1991 barricades" and the concert story "Burn, my fire", as well as the ecumenical worship from the Dome so important in the annual

commemoration ritual, on the days of remembrance of barricades. Without participants, with only a pastor and two television reporters present.

In the context of media event theory, there has been a debate for many decades as to whether the mediated forms of events are equivalent, less complete or perhaps superior to those taking place in reality. Already two decades ago, several authors have placed special emphasis on the course of communication on two parallel levels, namely the real and the mediated level. In the context of 'media rituals', a theoretician of ritual communication Nick Couldry mentioned as the main paradox that individuals' hopes, myths, moments of togetherness or conflict are no longer separable from the mediated forms they almost always acquire (Couldry, 2003). A theoretician of communication John Fiske, in turn, has made an even stronger assertion, saying that events that are not mediated do not receive attention at all or only gain it at local venues. He has explained that the term 'media event' confirms that it is no longer possible in the postmodern world to clearly distinguish the 'real' event from its mediated representation. As a result, the idea that the 'real' is more relevant, significant, or even more real than the representation is no longer usable. The media event is not at all a clearer representation of what happened, but includes its reality (Fiske, 1999). In the circumstances of the pandemic, some kind of victory of the mediated forms of communication has happened, because along with individual outdoor solutions, virtual forms of remembrance were the only safe and epidemiologically permitted ones.

Judging by a number of aspects of the classical media event theory, such as the dimension, the place or stage of the event, the presence of an opponent, the roles of the media and the audience, as well as the time orientation, a table has been created (see Table 1).

Table 1. Transformation of the commemoration in the discourse of 30th anniversary of Barricades of January 1991

The selection of dimension of the media event (Dayan&Katz)	Coronation (bonfires of the barricades as one of the most romantic symbols of the national identity narrative; the absolute ideal of unity)
Place (stage)	**Victory of the mediated forms of communication** (commemorative events mostly virtual or outdoor: ecumenical worship without participants, virtual conference and exhibition, environmental installation, individual layering of flowers, etc.)
Opponents	**Pandemic**
Role of media	**Reverent, priesty** (telling and romanticising the history)
Role of audience	**Remembering** and **learning** the history
Time orientation	**Past** (mostly description of historic events or memories of the participants)

Despite the changes dictated by the pandemic in the commemoration of the 30th anniversary of the barricades, the event can be evaluated as a part of the **coronation dimension**, since romanticization of history and homage to barricades is characteristic of the media messages. A significant novelty is related to the place or stage of commemoration, with the mediated forms becoming the only allowed this time. As an **opponent** in the context of this commemoration anniversary undoubtedly stands the pandemic, since it is an obstacle to the full-fledged course of events, robbing a large part of the emotionality from the commemoration ritual. Thus, for example, President of Latvia Egils Levits argued: *"We need to be united in the situation of pandemic. This is our greatest enemy today, thirty years later!"* (Delfi.lv, 2021a). Also journalist Velta Puriņa commented on new forms of commemoration: *"Yes, there is a lack of live contact, a lack of warmth of heart"* (Līcīte, 2021). It should be emphasized that my previous research has shown that the period of Latvia's independence from 1991 was marked by symbolic barricades between 'the people' and the political elite, thus forming the authority elite as an opponent (Ardava, 2015; Ardava, 2017). Evaluating the 20th anniversary of the January barricades in 2010, together with sociologist Daina Eglitis we summarized that the public remembering of the Barricades of January 1991 could be characterized as actually romanticized, emphasizing the value of freedom and memories of bonfires, smell of smoke, and tea brought by anonymous people. However, despite this romanticized remembering there was people's alienation from the political elite (Eglitis & Ardava, 2014). However, in the context of the 30th anniversary of the barricades, the discourse of alienation does not appear at all.

This discourse is completely out of competition with the pandemic. In turn, when it comes to the roles of the media and the audience, they pay homage to barricades, encouraging remembrance, sharing memories and proposing a new discourse of transfer of social memory to future generations or an **educational dimension**. Historian Edgars Engīzers said in an interview: *"In the evening go and talk to your father, to your grandfather. Talk to them about that time. It will be completely different. This is a real history of all families"* (Leitāne, 2021). V.Puriņa emphasised: *"During the lockdown you should talk more to your children, to your grandchildren, talk more about that time. It seems to them that is was a very long time ago"* (Līcīte, 2021). This can be considered a discourse caused by the circumstances of the pandemic, because the messages of the media emphasize that the time of the lockdown can serve as an opportunity for the family to share thoughts, memories and experiences more while being together. Finally, the time orientation of this commemoration anniversary generally stands out in the direction of the past, since the character of media messages is

dominated by a chronological retrospection of history, sharing of memories and the presence of nostalgia can be felt, which is very characteristic of media events in the coronation dimension.

Conclusion

Commemoration of 30th anniversary of Barricades is significant in multiple aspects. Almost all commemoration activities were characterized by virtual or outdoor nature for epidemiological safety, thus giving an answer to a long-time debate in communication science as to whether the mediated forms of events are equivalent or less complete to those taking place in real life. Undoubtedly, virtual commemoration and lack of physical presence leads to incomplete collective resentment, evaluating from ritual process.

The study analyzes the discourses of remembrance of the Barricades in the most popular media in Latvia. The situation of pandemic (great opponent and even enemy) has raised a new aspect of social memory transfer to younger generations and people who do not have these memories in their personal experience. This educational discourse was initiated by lockdown and an opportunity for family members to spend more time together.

Finally, in the context of this anniversary there is one opportunity not taken. In the context of the remembrance of barricades, the special reservoir for the power of the spirit provided by the history of barricades has always been central in media texts. In the pandemic, when great self-sacrifice and patience was required from every inhabitant, this potential for strength would function as an encouragement, a reminder of the nation's historical strength and ability to mobilize at that time.

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ANALYSIS OF TENNIS TRAINING OPPORTUNITIES IN THE SYSTEM OF LATVIAN SPORT EDUCATION

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ABSTRACT

Tennis, a sport that can be played at any age, has become very popular in Latvia, and its prestige and commercialization have promoted the development of the sport in Latvia as well. However, taking into consideration that the tennis infrastructure is still not sufficient in quantity, there are not many opportunities to play it in sports schools.

The study's authors wanted to find out why public sports schools do not choose to include tennis in their range of sports sections. Currently, most young tennis players train in private tennis clubs. To clarify the situation, quantitative data surveys were conducted with representatives of sports schools, as well as qualitative interviews with specialists in the field of tennis. The results showed the impact of different aspects – the competence of coaches in the regions, infrastructure availability, and the funding model specifics.

Based on the study's results, the authors develop recommendations that should be followed so that tennis is more included in state sports schools. In this way, the mass formation of the sport would be promoted. Thus there is a higher probability of tending to a sport of increased achievement.

Keywords: *tennis, sports schools, tennis coach, sports system, coach*

Introduction

The history of modern Latvian tennis began in 1988 when about 50 tennis players established the tennis department of the Latvian People's Front under coach A. Mellups. The department worked until the liquidation of the LTF. At that time, G. Dzelze, a member of the ATP, was the first professional tennis player in Latvia (Mellups, 2005).

Sport plays an increasingly important role in society. This is evidenced by one of the primary messages of the Olympic Charter, where it is stated that an individual can fully develop if he develops both the physical and mental spheres evenly (Olympic Charter, 2004). As the field of sport develops and becomes more commercial, the representative function of

athletes has not changed, and the individuals in question still inspire the younger generation to become talented professionals in their field.

Nowadays, the term ''sport'' is associated with various fields – school sports, professional sports, and grassroots sports. In connection with public educational institutions, the first evidence was already mentioned in 1860, when sports activities were used as an instrument for developing morality and work ethics in New Zealand. This process was experimental and optional. The changes followed in 1877 when it was recommended to make sports mandatory by alternating the education system, linking it to the military direction (Pope, 2011). At that time, representatives of the field of education wanted to use sports as the primary tool to promote the personal development of young people.

Sports, including tennis, have become an important sector of the economy of many countries, and it involves considerable financial resources and workforce. There is continuous improvement in the sports industry, such as its management, financing, and the management of this financing. The increasing tendency to make sports more commercial and professional, on the one hand, as well as fierce competition for budget funds, on the other hand, shows how sports must learn to profit independently from the resources it owns.

The authors point out that the federation plays an essential role in developing sports. Federations are competent in the development of youth sports, as well as the attraction of financial resources through various support measures. It depends on the federation's activities – which high-level annual tournaments, games, or competitions will occur. In addition, the financial aspect should be noted. Each federation receives state funding, which is allocated considering various factors – such as achievements. However, state grants are not enough for faster sports development. Thus, one of the primary tasks of federations is to attract additional funding, which can contribute to the overall development of the sport.

The role of sports in society is clear. However, tennis is its essential part. Tennis develops coordination, a sense of balance, and overall physical fitness. Depending on the skills and experience, tennis can be played at different levels – from an amateur to a professional level (Pluim et al., 2007).

The Latvian sports education system is primarily based on professional sports education institutions or sports schools. Their task is to prepare students to the appropriate level to comply with the relevant regulations of the Cabinet of Ministers. The number of students is 305, whereas the number of tennis coaches is 16. For example, the available data point to very different statistics in athletics, which is also an individual sport. It is implemented in 50 sports schools, the total number of students is 6609, and the number of coaches is 280 (Professionally sport, 2021).

The study's authors want to understand why sports schools are reluctant or unable to include tennis in the range of sports to offer, as according to the statistics, the availability of this sport is low.

Literature analysis

The Latvian Tennis Union (LTS) is a tennis organization that has the right to represent Latvia at the international level and in international tennis organizations: the International Tennis Federation (ITF) and Tennis Europe (TE). LTS ensures the participation of Latvian national teams in international tournaments, takes care of the growth of athletes, raises the qualification of judges and coaches, and works on tennis promotion projects.

According to Article 10 of the Sports Law of the Republic of Latvia, sports organizations are sports clubs, sports federations, and other institutions. A sports federation is an association of sports clubs and other legal entities whose activities are related to a specific sport or field of activity and the purpose of which is to direct and coordinate the work of the sport or field of activity in question, as well as to represent that sport or activity relevant to international sports organizations. A sports federation can represent several sports or fields of activity. LTS goals and objectives are as follows:

- To manage and coordinate the activities of persons related to tennis in Latvia, to represent and implement their common interests.
- To develop international relations and take care of increasing the mastery of tennis players.
- To carry out the promotion of tennis at public activities and events.
- To promote tennis in Latvia as a healthy form of recreation and sports, especially among children and youth, to prevent the involvement of children and youth in activities harmful to their physical and mental health.
- To ensure and support the development of tennis in Latvia and the achievement of high sports results in tennis, as well as to promote the growth of high-level athletes.
- To provide training for children and young people in tennis and provide methodological and material support for such training.
- Organize and support competitions in tennis.
- To study, compile and publish the history of tennis.
- To implement other activities that significantly benefit public tennis and health promotion. (Sports law, 2002).

The role of a coach in the development of sports and the overall process is critical. For instance, the coach must be competent in choosing the appropriate methods and evaluating the training process in a tennis game.

Furthermore, the psychological factor should also be considered, especially in top-level tennis. The role of a coach is to stimulate and motivate players to play the game. Players will be stimulated by sessions containing enjoyment, activity, a variety of practices, a feeling of improvement, and the ability to succeed. The game-based approach means that a tennis coach sets up realistic tennis game situations, in either singles or doubles, so that beginner players can learn to play the game. It also allows a tennis coach to give relative technical information so that players can put it into practice immediately (Tennis Psychology…, 2006).

The Latvian sports education system, which has already been mentioned above, is based on sports schools. Government-supported sports schools must meet the relevant criteria to move training groups from a lower level to a higher one (Sports schools financial…, 2022). By fulfilling these criteria, sports schools receive appropriate financial support to be able to pay the coaches under statutory remuneration. Analyzing tennis criteria, the authors point out that they are not considered to be of a very high level and are unattainable. For example, only 5–8 athletes are needed in the training group MT-7. Their task is to get ranked between the 1st and the 60th in the Latvian tennis rankings and to fulfill the control standards so that the student, a candidate, could participate in the Latvian national team in a respective age group.

The primary functions related to the development and organization of youth sports are delegated to educational institutions of professional orientation or sports schools. The education to be acquired is not defined as mandatory, and children and young people choose it based on their interests and wishes. The state or municipalities can fund sports schools, but the tasks to be performed should not differ. In order to coordinate and organize the activity of sports schools, in 2015, the Council of Directors of Sports Education Institutions of Latvia (LSIIDP) was established. The primary tasks of the association are as follows:

- To coordinate and manage the implementation of professional sports education programs in the country;
- To solve issues related to the operation of Latvian sports schools and sports clubs, to represent their interests in state institutions and other organizations;
- To promote the development of youth sports and improve the sports system in Latvia;
- To promote youth sports in the country;
- To promote the development of sports in Latvia, the implementation of sports programs, the continuity of the learning process, and methodical work in sports institutions.

The selection criteria referred to above concerning the criteria for the fulfillment of athletes do not apply to private sports schools or clubs. However, these organs shall be subject to other provisions relating to the various fields, such as the adequate provision of a ventilation system for sports halls or other safety-related aspects.

There is a different sports education system in countries where tennis is more developed, similar to other sports. A great emphasis is placed on academies. Their primary task is to promote the creation of professionals in the relevant sport. Academies, depending on their goals and capabilities, conduct the selection of young athletes. Two training sessions a day are often carried out in the daily process, while the rest of the time is devoted to rehabilitation and training. One of the most developed systems of sports education is in England. The researchers have pointed out, however, that an athlete is at a relatively high risk of not becoming a professional athlete even if one of the programs offered by the academies is studied daily. Thus, in theory, an athlete may lose his level of education and not become a professional athlete (Pummell & Lavvalle, 2019).

The development of the sport is the education and competence of coaches in the respective sport. In order to achieve systematic training of coaches, cooperation with high courts and federations is necessary, which can mutually agree on the necessary competencies that should be acquired by the coaches of the sport in question. Although each country has its educational specifics and differences, some trends are unifying. A system has been set up in Germany, Italy, Spain, and France where the parties – federation, universities, and tennis clubs – will cooperate. The main idea is related to the formation of uniform guidelines and the attraction of former athletes to continue their careers as coaches (Ioannis et al., 2015).

Federations are competent in the development of youth sports, as well as the attraction of financial resources through various support measures. It depends on the federation's activities – what high-level annual tournaments, games, or competitions to organize. In addition, the financial aspect should be noted. Each federation receives state funding, which is allocated considering various factors – such as achievement or scale. However, state grants are not enough for the faster development of the sport. Thus, one of the primary tasks of federations is to attract additional funding, which can contribute to the overall development of the sport. An essential role in developing sports and the overall governance system relates to professionally oriented sports schools. They form the basis for the further development of athletes. Therefore the sports school must be able to provide students with everything they need – transport to competitions, tournaments, specialists, and relevant medicine.
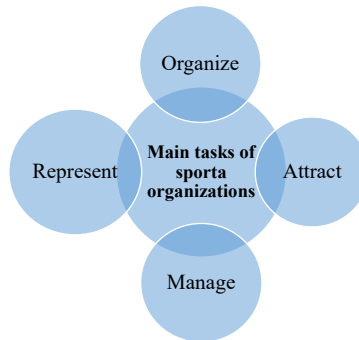
Figure 1. Basic functions of sports organizations (created by authors)

Considering different management models in the Latvian sports system, the authors of the thesis created the primary tasks of sports organizations, which should be performed to develop their activities successfully.

One of the primary tasks of the organization relates to the management function. In sports, education, and other structures, a vital aspect is the successful supervision of employees and the organization's development. Employees should be aware of their place in the organization and understand their assigned tasks.

Table 1. Information about Latvian tennis statistics

Units	Count
Members of the federation	42
Couches	90
Clubs	38
Referees	27
Players	789

Methodology

The quantitative survey method is used in the study. The author used this method because it has more positive aspects that contribute to the quality of the study:
- Resource-saving (so-called time and financial);
- Anonymity;
- Includes many respondents (Geske & Grinfelds, 2020).

The possible threats of the survey method are related to the passivity of respondents, the possibility of spontaneous response, possible communication

or cooperation between respondents, and motivation to delve into the answers. Also, there is no possibility, and there is a low probability of establishing personal contact with the respondent (Nind & Lewthwaite, 2018).

Purpose: Identify the reasons for not including tennis in the sports section of the national sports schools.

Current Situation: Tennis has become one of the most popular sports in Latvia. It can be played at different ages, starting from 4 years, but the possibility of learning the game in sports schools is minimal.

Tasks:
- Analyze the development of the Latvian Tennis Union (LTS);
- Process and interpret research results;
- Develop recommendations;

21 National Sports Schools where tennis is not included in the program and 15 private sports clubs wits tennis programs have participated in the research.

Research

Initially, the authors surveyed state sports schools to clarify the most critical aspects related to tennis education opportunities. In order to be able to implement specialized tennis training, the relevant infrastructure is required. The authors asked for the opinion of sports school management regarding the tennis infrastructure offered by their cities.

THE ASSESSMENT OF TENISS INFRASTRUCTURE IN THE HOME TOWN

NONE	36.40 %
SATISFYTING	44.50 %
GOOD	18.20 %
VERY GOOD	
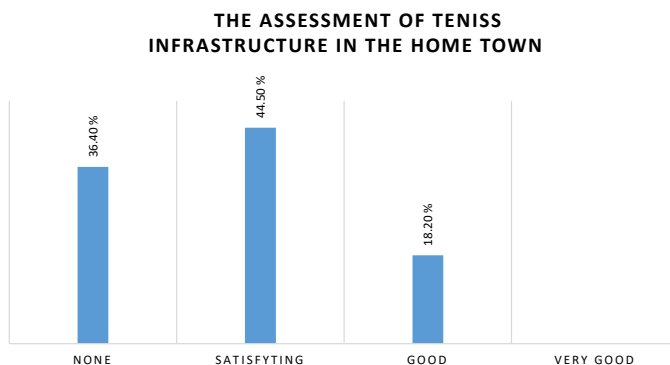
Figure 2. Infrastructure situation – the opinion of state sports schools

Analyzing Figure 2., it can be concluded that the overall situation is relatively good. Almost half of the respondents – 44.5% – mentioned that the tennis infrastructure in the city could be seen as satisfactory. However, unfortunately, about every third respondent mentioned that the relevant infrastructure is not there at all.

The authors point out that this is an essential factor in actualizing the insufficient educational opportunities in tennis. The reason for this is the specific infrastructure – tennis courts. The general preparation of tennis can also be learned at the sports bases of basketball or other sports. However, it is necessary to acquire specialized skills on the tennis courts – to serve, take a shot, playing at the net. The presented data indicate that the situation is generally satisfactory, but it should be improved if tennis is integrated at the level of sports schools.

For any sport to develop and move forward, the city in question must also have better traditions of the sport. Therefore, we asked the management of sports schools about the tennis traditions in the region they represent.
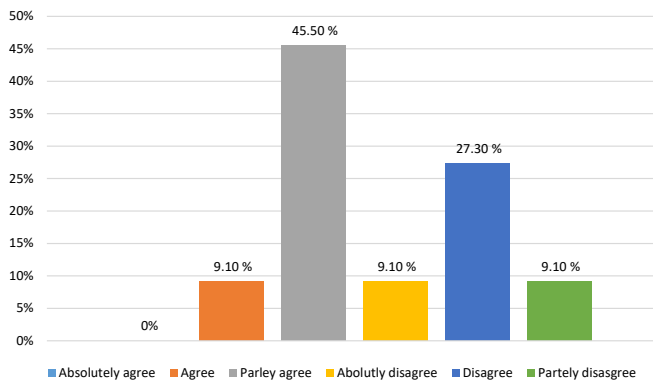
Figure 3. Statement – our city has good tennis traditions

Sports schools' views on tennis traditions in their city are not at a high level. Most respondents rated their town's tennis traditions as weak or non-existent. However, the authors of the study point out that this aspect cannot be solved quickly. Several prerequisites are necessary to establish the sustainability and traditions of a sport in a city. However, the authors of the study point out that this aspect cannot be solved quickly. Several prerequisites are necessary to establish the sustainability and traditions of a sport in a city. For example, high-level athletes, coaches, infrastructure, the "pyramid" of athletes, and the public's tennis knowledge. In order to build traditions, the basis of everything is to develop tennis at the level of sports schools, according to the study's authors.

Considering that it is possible to learn tennis in only five sports schools in Latvia, the authors want to find out the main reasons why sports schools cannot or do not want to include tennis in their institutions. 36% of respondents mentioned that the main reason is infrastructure problems, while 27% stated that the problem is the absence of specialists or trainers. 10% stated that there is ignorance or fear about the possible response from young athletes.

At the end of the survey, the respondents had a recommendation to express their opinion or recommendations regarding the tennis education system. The authors collected the most important of them:

- Tennis is a relatively expensive sport, and including it in the program of a sports school is an additional expense for the municipality. Likely, the coaches' salaries in the country are also not competitive. Our sports school already has a wide range of sports on offer. In the winter period, no infrastructure is available, only a private indoor court close to the city area, which is fully occupied;
- Insufficient support in providing funding from the state. Every year, state funding for the salaries of teachers of existing sports decreases for the sports school, and municipal funding increases, even though the number of students is increasing. Insufficient provision of infrastructure – there is an outdoor tennis court, but there is a lack of gymnasiums to ensure the training process (the existing ones are full);
- In our city, seven sports are already available in the sports school, introduce one more in the sports school! There is a group of tennis enthusiasts in the city.

Analyzing the comments of representatives of sports schools, one can see several valid reasons for not including tennis in the structure of sports schools. Considering that relatively many types of sports are developed in Latvia, the system of sports schools also includes many types of sports. The criteria for financing sports schools, especially in the youngest groups, are limited in quantity. Therefore, the management of sports schools has logical doubts as to whether, by adding a new sport, there will be enough young athletes for all sports.

The financial aspect is additionally mentioned. The study's authors, however, point out that it can be partially considered a myth. Tennis is expensive at the professional level, but initially, at the national level, it can be implemented similarly to other individual sports.

Since tennis education is primarily based on developing private schools or clubs, the authors of the work want to discover the reasons that prevent clubs from merging with sports schools.
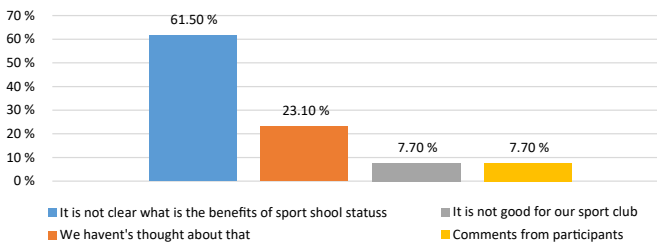

Figure 4. Reasons for sports clubs not to create a state sports school system

The authors point out that sports clubs are not clear about the additional positive factors associated with joining the sports school system. Also, in this quantitative survey, respondents had the opportunity to express other opinions or influences related to tennis development in the final stage.

Representatives of tennis sports clubs understand that merging with sports schools would contribute to the financial stability of coaches. However, too significant an administrative burden is mentioned as a possible threat. As a result, the acquisition may not be profitable. In turn, almost every fourth respondent has not thought about this possibility.

The authors wanted to clarify how tennis sports clubs evaluate the available infrastructure.
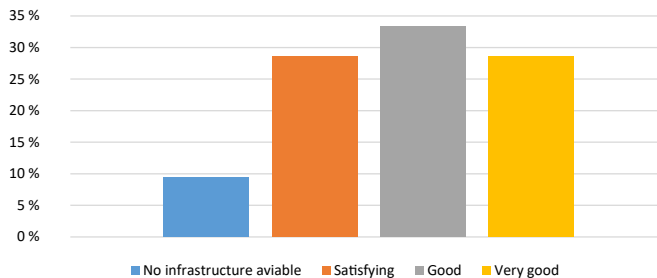
Figure 5. Tennis infrastructure according to sports clubs

Compared to the respondents' answers about state sports schools, the available infrastructure of sports clubs is higher. In general, the majority of respondents rate the infrastructure available to them as good or satisfactory. The authors point out that a large part of the tennis sports clubs is based within a radius of 50 km around Riga. Therefore, it would be possible for state sports schools located in the vicinity of Riga to cooperate with sports clubs, as the overall infrastructure can be assessed as suitable.

Conclusions

The situation of tennis infrastructure in Latvia can be assessed as satisfactory. It was not defined as the main problem for not including tennis in the system of sports schools. The most significant misunderstanding of sports schools is related to the responsiveness of tennis integration on the part of athletes. Sports schools are not sure there will be a great response when introducing a tennis department.

Private sports clubs are not interested in merging with sports schools. Although mergers would mean excellent financial stability, private tennis sports clubs point to an overly bureaucratic side.

Tennis should be integrated into the schools' programs. Firstly, public awareness of tennis traditions should be raised. Afterward, any sports coach or teacher can be educated and get access to the knowledge about setting up the classes without any infrastructure, whether in a city school or a town. Then, the salaries should be competitive enough for the tennis coaches to feel appreciated and valued. Moreover, it is necessary to convey the importance of having tennis in schools to the principals and explain what they will benefit from such classes.

The LTS should undertake the mutual communication function. The authors of the study indicate that, in some cases, sports clubs should merge with sports schools. This would contribute to a greater possibility of building an internal pyramid of athletes, as well as the stability of the sport.

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IMPACT OF SOUND ON THE PERFORMANCE OF BASKETBALL FREE THROW

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ABSTRACT

Various factors determine the quality of basketball and the overall result. The game consists of different situations – three-point shots, rebounds, and many more. In intense games, free throws play a decisive role in determining the winning team. The player has the opportunity to prepare for their performance. Due to the global Covid-19 pandemic, many basketball games occur without spectators and, therefore, without additional noise. The study's authors analyzed the statistics of free throws in Euroleague and National Basketball Association games – with and without spectators. The study's authors emphasize significant trends in exploring the world's strongest leagues. The accuracy of tree throws better in games when the presence of visitors is not allowed. The presented free throw statistics confirm that the players could take a free throw better without additional psychological stress.

A pilot study with ten respondents was also conducted. As part of this, the basketball players took free throw shots with and without an additional external sound effect. The presented results showed that it is possible to take a free throw more accurately without sound. The statistical data collection method and the performance of basketball free throw tests were used within the research framework. Data was compiled with the Microsoft Exel program.

Keywords: basketball, free throws, sound effect, sports, sports coach

Introduction

In the 21st century, there are approximately 400 million registered basketball players worldwide. Basketball is one of the largest sports in the world, with 214 countries joining the FIBA-International Basketball Federation. Basketball is a fast and dynamic sport, and the game's score changes every minute, making it exciting. Thanks to these features of play, basketball has become a modern time game.

Despite the country's relatively small population, Latvia has produced very high-achieving and top-level basketball players. Latvian basketball players play in the best leagues in Europe and the National Basketball Association. Active NBA players from Latvia are Kristaps Porziņģis and Dāvis Bertāns.

A free throw is the only basketball shot performed during the game without any defensive pressure. Therefore, the free throw is considered the easiest throw in basketball. But is that true? Growth and improvement can be seen in almost all aspects of basketball, but this development is stagnant. Since the 1970s, the average percentage of free throws in the NBA League has fluctuated between 75% without much change (McMahan, 2017).

Professional basketball players train every day and learn all the game elements until they reach the highest level. But still, when it comes to entering the penalty line, even the best athletes make mistakes. A player can throw with a very high percentage of sales throughout his career, but when, for example, performing a free throw in the title game, those free throws decide the game's outcome. The player exposes himself to a high-pressure situation, which makes the task much more difficult. In sports, the saying "choking under pressure" has emerged. Everyone knows that our ability to do something qualitatively decreases when we are exposed to stress. Therefore, this saying also applies outside the sports industry (Goldschmied et al., 2021). The most common signs of stress are a fast heartbeat, high blood pressure, fast breathing, and sweating. How can these factors be reduced, so they have the least possible impact on the athlete? Of course, the number of repetitions, execution techniques, and the ability to concentrate is essential. But how important are the psychological techniques that an athlete can use? Make the most of your performance. Previous research shows that "thinking too much" about body movements (free throw technique) can harm performance quality.

Literature analysis

Kinematics is any mechanism of body movement from the perspective of time and space, regardless of the forces that cause this movement. The biomechanics of basketball mainly consists of the throw trajectory and throw speed, throw angle and throw height (Robin et al., 2021). The throw's trajectory is never constant, and its height is directly related to the angle at which the ball falls into the basket. And is the angle at which the ball falls into the basket is the most influential factor for a successful throw (Aksović et al., 2020).

Thanks to the ball's rotation, it flies much more stable, and if the throw is not accurate and does not fall directly into the net, but hits the hoop or basket shield, then this rotation moves the ball down and inside the basket. A study was conducted in which it was found that the ball makes two to three complete rotations during a throw. Data shows that for guards under the age of 20, the ball makes 1.66 revolutions per second and 100.94 revolutions per minute (Okozaki & Rodacki 2018).
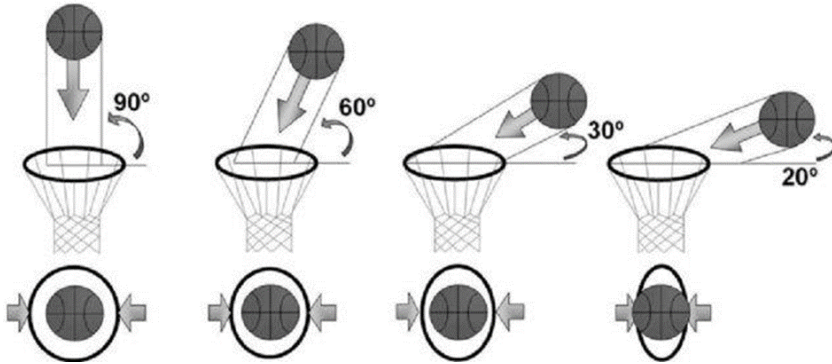
Figure 1. Basketball ball throwing angle and its effect on the throw (Aksović et al., 2020).

Body position. A lot of basketball literature assumes that a player must place his entire body directly in front of the basket before throwing (Jang, 2014). The position of the legs is slightly narrower than the shoulders, the feet are parallel to each other, and the toes are straight at the basket. One portion (respectively for the throwing arm) is slightly protruding. The shoulders and chest are straight opposite the basket. Therefore maximizing stability during the throw and minimizing any body movement that could prevent the ball from heading straight to the basket. Take the throw from a moderate squat (Sevrez & Bourdin, 2015).

In youth basketball, jumping over the penalty line in the minor groups of children is allowed, but this would be a rule break even in later age groups. Situations like these are allowed because younger students do not have enough strength to take a free throw from the right penalty line. It is, therefore, necessary to gradually eliminate horizontal movement during the jump. Later, when the physical fitness is high enough, the free throws are already taken without jumping and provide excellent stability during the litter. The height at which the ball is released during a throw affects the angle of entry of the ball, and it is statically proven that the ball's angle of fall affects the weld's accuracy.

Ball release speed. In the case of an inaccurate throw, in 65% to 80% of cases, the force or speed of releasing the ball is the fault. Studies have shown that the speed of the ball during a free throw varies between 6 and 7.2 m/s. The force with which one throws the ball also affects the angle of entry and the trajectory of the throw (Robin et al., 2020).

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The best possible balance needs to be struck between these two parameters. To use as little force as possible, optimize the throw trajectory and the angle of entry of the ball. It has several advantages, such as improved litter accuracy, energy savings, and less chance of making mistakes during the little.

Noise can adversely affect a person's cognitive function—damage mental and physical health. Noise causes anxiety, irritation, cardiovascular disorders, and oxidative stress in the brain. Studies have shown that mental stress and visual/auditory attention are significantly reduced when subjects are exposed to noise levels of 95 dBA (Jafari et al., 2019).

Attention is the active cognitive selection process. This is a crucial feature responsible for physical movements and a person's emotional state. Noise can negatively affect information processing and strategic decision-making. But noise also causes anxiety in the body, which improves alertness and exacerbates its concentration without affecting the speed or strength of physical activity—this noise increases players' motivation during the game. In the current situation, when the arenas are empty, and games are without spectators, players need to get used to the new rule – silence. The Los Angeles Times interviewed NBA players who reported a lack of fan support. Those players are used to performing in front of spectators, which takes extra energy and motivation. "*In this environment, we need to be able to motivate ourselves*," said the Portland Trail Blazers player Carmelo Anthony (Uggetti, 2021).

In 2015, a study showed that the advantages of home games between two teams provide a crowd effect. Which supports and motivates players. And also affects judges making decisions more in favor of the team supported by the spectators.

Research

Analysis of penalty shootout implementation in European basketball clubs and National Basketball Association (NBA) during the pandemic. Examination of the penalty shootout statistics of TURKISH AIRLINES EUROLEAGUE teams revealed that the absence of spectators in the stands is probably why the teams take penalty shots with a much higher percentage this season than in previous seasons.

They analyzed the top five European teams with the best penalty shots in the last five years. The overall development and growth of the free throw are visible. Slowly but gradually, the accuracy of penalty shots has increased. 2016-17 during the season, the game was attended by an average of 8,472 fans. This season's most significant number of spectators was Crvena Zvezda in the match against CSKA Moscow – 18487 spectators.

This number of spectators provides a loud and charged atmosphere during the game. They were reaching a noise level comparable to a rock music concert. 2017-18 During the season, the game was attended by an average of 8,864 fans (Euroleague statistic).

This number of people can generate noise well above 95 dBA if it is assumed that a single human cry can exceed 100 dBA. The entire last season, with spectators in the stands, was the 2018-19 season. A year before the Covid-19 global pandemic, restrictions and security measures were introduced afterward. The game was attended by an average of 8282 fans and spectators.

Looking at the best top 5 teams of the 2016-17 season after the free throw, only one couple with an accuracy higher than 80% (CSKA Moscow – 82.15%). But at the top5 of the 2020–21 season, the percentage of free throws sold by all five teams is over 80%. The best team is Zalgiris Kaunas, with 83.96%. It would rank fourth by taking the best free throw sales team of the 2016-17 season and comparing it with this year's best teams.
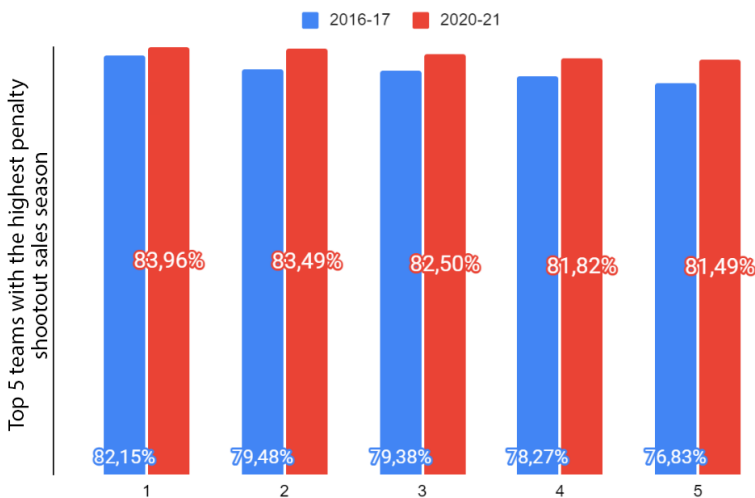

Figure 2. 2017–16. season and 2020–21. Top5 teams with the highest penalty shootout sales season (Euroleague statistic)

During this year's TURKISH AIRLINES EUROLEAGUE season, 11 of the 18 TURKISH AIRLINES EUROLEAGUE teams started the season without spectators in the stands due to security measures during the Covid-19 pandemic. Two of these teams (2; 3) are the top 5 teams with the highest free-throw accuracy. In the last 20 years, only twice have all the top5 teams in the league taken more than 80% free throws. This happened for the first time in the 2018-19 season and was repeated this year.

The first conclusion is that the penalty shootout, as an element of basketball, along with the whole sport of basketball and its players, is evolving. The players' skills are growing, and the overall level of basketball in Europe is rising. And the second conclusion, the accuracy of this year's penalty shootout has grown exponentially because the games are played in empty arenas, without the attendance of spectators and fans, which eliminates two of the factors influencing the free throw – noise and psychological stress.

The authors also analyzed the implementation of free throws in the world's strongest basketball league – the NBA. The five leading teams that performed the best shots were investigated to make the data as reliable as possible.

Table 1. 2017–18 top 5 teams in the NBA season with the highest accuracy of penalties (NBA statistic)

	Team	Games	FTM	FTA	FT%
1	Golden States Warriors	82	20.3	16.6	81.5%
2	Minnesota Timberwolves	82	24.1	19.4	80.4%
3	Portland Trail Blazers	82	20.9	16.7	80.0%
4	Toronto Raptors	82	21.8	17.3	79.4%
5	New York Knicks	82	19.0	14.9	78.7%

Table 2. 2019–20. top 5 teams in the NBA season with the highest accuracy of free throws (NBA statistic)

	Team	Games	FTM	FTA	FT%
1	Pheonix Suns	72	23.8	19.9	83.4%
2	San Antonio Spurs	71	23.4	19.0	81.0%
3	Portland Trail Blazers	74	22.1	17.7	80.4%
4	Golden State Warriors	65	23.2	18.7	80.3%
5	Boston Celtics	72	23.2	18.6	80.1%

Analyzing Table 1 and Table 2, it can be concluded that the data of the NBA leading teams indicate the effect of noise on the presentation of free throws. All five teams in the 2019–2020 season, which showed the highest accuracy in the respective season, performed better than the five best teams before the pandemic in 2017/2018.

Practical research

They participated in the study – junior girls aged 15 to 20 years. 10 to 20 basketball players participated in the basketball training, and the number of students in training varied. The student's skill levels ranged from high-achieving athletes and youth team players to sports school students. The practical research was conducted in March and April 2021. As a result of the study, technical training, and training process, a total of 14 pieces of training were completed.

The practice and training took place in the basketball hall of the basketball school "Ridzene." The hall is equipped with two large baskets and four side baskets, and a penalty shot line is marked next to each basket. The training took place four days a week with one additional volunteer training. The research aims to find out how many different factors affect the accuracy of a basketball penalty shot. The research work consists of three types of tasks completed in three weeks, with one week dedicated to each task.

Task 1 – Penalty shots at rest

The task aims to determine the students' penalty shot accuracy at rest without influencing factors. Use the obtained data as a median or average to observe the influence of elements on the accuracy of the free throw. The task is for each student to throw 150 free throws, changing to 10 for every free throw. Count the result. The results are recorded and summarized within a week.
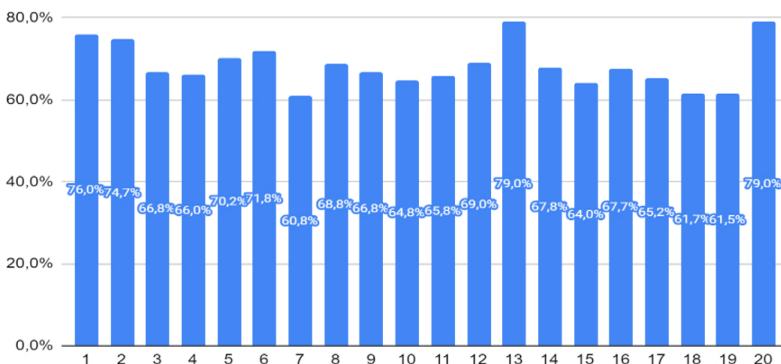

Figure 3. Free throws in a state of peace

The accuracy of students' total free throws at rest is 68.4%, which is a satisfactory result, considering the age and skill level differences between students.

Task 2 – Penalty shots with a physical factor

The task aims to determine how much the physical fitness factor affects the accuracy of the free throw. The task is for each student to throw 100 free throws, alternating every ten free throws. Between every ten free throws, two full basketball courts are run in the sprint (70–80%). This increases heart rate and respiration. The results are recorded and summarized within a week.
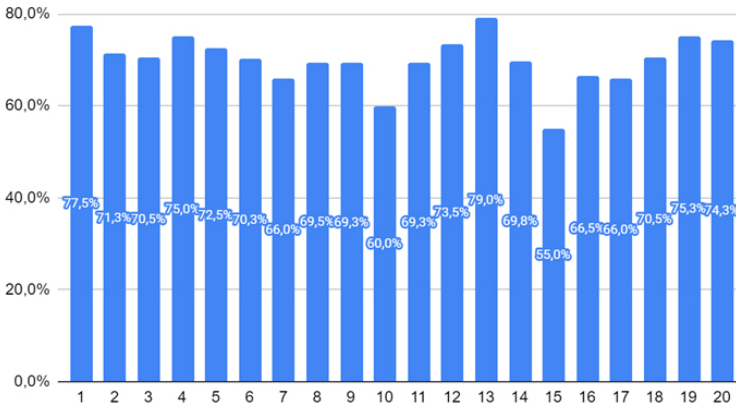

Figure 4. Penalty shots with physical exertion

Analyzing Figure 4, we can see that the accuracy of free throws, despite the physical factor, is constant. Or even in some cases, the accuracy has increased. The accuracy of the free throw of all students with a physical factor is 70.0%.

We can conclude that the data are partly misleading because the number of throws thrown is not the same. Because the conditions of Task 2 are to run two full basketball courts between every ten throws thrown. Each student had to throw 200 free throws less than in the 1st task. This is reflected in the accuracy being higher, although, in theory, it should be lower.

Three separate studies studied the effect of three different levels of fatigue factor on the realization of a junior player's litter from both 2 pt and 3 pt litters. It was observed that at 0, 50, and 80% of maximal heart rate, players showed factors of fatigue, loss of concentration, and decreased response. The accuracy of the 3pt litter decreased by 28% at 80% of the maximum heart rate compared to the results of 0% of the maximum heart rate or resting state.

The task aims to investigate how much noise affects the accuracy of penalty shootouts as both a physical and psychological factor. Of all

students, five were selected that would most widely reflect the range of study participants. Two participants with the best free throws in both previous tasks were selected, and one with a penalty shot accuracy above the team average. And two participants with below-team scores.

"Believe it or not"

Task. Play the game "Believe it or not," where one of the five girls enters the penalty line and is about to take ten free throws. Before that, the other participants of the training (~20 participants) are divided into two groups:
1) Believe that the thrower will throw at least 8 out of 10 free throws.
2) A free thrower is not expected to throw at least 8 out of 10 free throws.

Depending on the group they choose, these other participants may support or hinder the execution of the free throw. Techniques such as making noise, encouraging, and distracting simulate a game situation where supporters and deniers are involved—creating a stressful situation by subjecting the penalty thrower to the psychological stress caused by noise.

But extra strain and responsibility are placed on the thrower, depending on whether or not these 8 out of 10 free throws are thrown. The one who made a mistake runs the pitch.

Example 1 – A free thrower throws 7 out of 10 free throws, and the penalty shooter himself and his supporters are running.

Example 2 – A free thrower throws 9 out of 10 free throws. Those who choose not to believe do not run.

The numbers are the girls' order no. from previous schedules. The main idea was to choose five girls who best represented the whole group of girls.

Analyzing Figure 5, the percentage of free throws sold has increased. But comparing the number of free throws thrown out, we can conclude that these results do not fully reflect the effect of the factor.
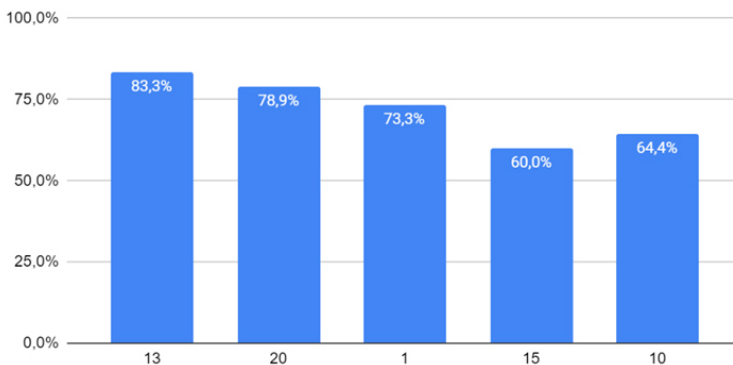

Figure 5. Free throws with a psychological factor – sound effect

The study's authors, analyzing the performance of the task, observed that the participants had more difficulties with the psychological noise factor than with the physical aspect of the noise.

The participants' accuracy of the free throws was influenced by how much people supported and were against him. And what these other participants said and distraction techniques was the influencing factor. Of course, the noise achieved during the study did not nearly reach the atmosphere and noise of a professional basketball game. And according to the author of the work, the louder the noise, the more significant the physical impact it would have on the player.

At the end of the basketball game, the importance of free throws and their impact on the game's outcome grows drastically. The number of free throws in the game's last minutes increases statistically. They comprised 48% of the winning team's final points scored in the last 5 minutes of the game. And 69% of all points were scored at the last minute of the game. The noise at these moments will be the highest in all games. That is why teams need to find ways to train their players' mental stamina to prepare for those final moments of the game.

Conclusion

Through an analysis of TURKISH AIRLINES EUROLEAGUE penalty shooting statistics over the last five years, the authors observed and concluded a gradual increase in team penalty shootout sales, which is related to the global development of the basketball game and the growth of players' skills.

Analyzing free throw statistics for the top5 European basketball clubs over the last five years, the author concluded that the accuracy of free throws is increasing every year compared to TURKISH AIRLINES EURO-LEAGUE 2016–17. season with 2020–21. season, the accuracy of the free-throw sale has risen by 3.37%

Analyzing the EUROLEAGUE penalty shoot statistics, the author concluded that due to the security measures of the covid-19 pandemic and the fact that the games take place without the presence of spectators, players were less exposed to psychological factors caused by the noise in the game. In this way, this season, the teams take free throws with the highest-ever free throw. Similar data can be seen in NBA statistics.

Noise, as an influencing factor, has two ways in which it affects an athlete during a game. The first is the physical type, and the second is the psychological one.

Noise is a physical factor. During the game, the player stays in a noisy environment for a long time, which can cause physical discomfort

over time. This results in distraction and reduces the player's ability to concentrate.

In the first task of the research work – punishment throws at rest. The author concluded that the level of individual free throws and basketball skills in practice with students and research participants is very different. In general, it was found that the participants threw free throws with an accuracy of 67.6% on average.

In the second task of the research work – penalty throws with a physical factor. The author of the paper concluded that the physical condition of the study participants (endurance and ability to recover) is at a satisfactory level so that it does not drastically affect the accuracy of the free throw. Accuracy increased by an average of 2.4%, with participants taking penalty shots with an average accuracy of 70%. However, some pupils showed a decrease in litter quality.

The number of free throws was different during the first and third tasks. During the first task, one participant threw a total of 600 free throws, but during the third task, only 90 free throws. The fact that in such a small number of shots, the study participants showed a decrease in accuracy leads to the conclusion that the noise influences the quality of the player's penalty shots and the final result.

By paying increased attention to the psychological factors that affect the accuracy of the litter, it is possible to improve litter sales statistics.

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TECHNICAL PREPAREDNESS AND FEASIBILITY OF DIFFERENT LEVELS OF BIOLOGICAL MATURITY FOOTBALL PLAYERS

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ABSTRACT

In football, as in other sports, there is a tendency for athletes, or accelerators, to mature faster. This is a typical trend, as this type of athlete can run faster, jump further, and perform other activities relatively better than their peers. The authors wanted to emphasize the negative trend related to the Latvian football system. It can be seen that coaches pay too much attention to accelerators, although additional attention should be paid to footballers who mature physiologically later. The study's authors want to emphasize the problem that needs to be solved, which is relevant in football and other sports. A similar situation can be observed in other sports. Coaches pay too much attention to a quick result without investing additional work in further development, emphasizing athletes who mature physically a little slower.

The authors conducted a study comparing two groups of respondents – accelerators and retardants. Within the framework of the research, two tasks were performed – purposeful work in improving movement skills for 15 – 16-year-old athletes was emphasized.

Task 2 – to compare the results without and with the ball because the exercise with the ball characterizes the movement skills – the ability to drive the ball, partially reducing the benefits of maturity. The data were obtained from physical tests by combining them with the Microsoft Exel program. In the conclusions, both groups of respondents showed significant progress in technical performance.

Keywords: *football, training methods, physiological maturity, ball management, sports coach*

Introduction

Football is a team sport, and it is the most popular sport in the world (Dvorak et al., 2014). In Latvia, learning to play football in private football clubs and sports schools that implement vocational education programs is possible. The Latvian national football team regularly ranks very low in this ranking (129th place on 30.06.2022), Latvian footballers are not in demand in the European football market, and no player from Latvia plays in the European TOP 5 football leagues (FIFA world…, 2022).

In 2018, UEFA (the Union of European Football Associations) launched a new UEFA League of Nations football tournament, replacing most international friendly matches. The teams were divided according to the ranking of the teams in 4 leagues. The strongest national units played in the A league but the weakest in the D league. Latvia plays in the D league (lowest) in the same group as the dwarf countries Malta, Andorra, and the Faroe Islands. In the highest A league, the teams compete for the Champion of the League of Nations title. Teams also play for promotion to a higher league and are relegated based on results.

Taking into account the facts mentioned above, the question arises – why has the Latvian had such poor results at the international level? Why are the results good at the youth sample level and weak at the adult level? Understandably, Latvia is not a big country, and it is not easy to compete with football powers, but when the authors analyze the correlation – between population and FIFA ranking. Croatia, with 4.2 million and ranking 15th in FIFA (4th place in 2018), brings up many skilled footballers who play in the strongest football leagues, but Latvia has 2.07 million.

In the authors' opinion, the answer can be found in the player training programs methodology and in the environment in which the football player is taught and brought up.

Literature analysis

Considering the sensitive periods of age when teaching technical elements and developing physical properties is essential. The sensitive period is when a trait is best trained because the most significant adaptation takes place, and the training yields the greatest effect. It should be understood that all body systems can be trained at different ages, but the impact (benefit) of training will be very different, so trainers need to know these sensitive periods very well when creating training programs. Notwithstanding these sensitive periods, coaches can harm a child's or young person's body by trying to develop physical characteristics at inappropriate times with inappropriate exercise (Fedowa & Ahn, 2011).

To improve movement skills – technical preparation, athletes need to understand what it is in general and have specialized training. The technical practice of an athlete is understood as a learning-training process in which acquired knowledge, skills, and abilities, as well as perfected what is necessary for the form of sports execution of movements. Movement skills and skills are based on psychomotor processes because they determine the precision of activities along with the development and differentiation of conditioned reflexes formation in brain structures (Alwasif, 2015). The concepts of athletes' abilities and skills are pretty close and complementary.

However, suppose skills are associated with specific activities to realize the level of performance and achieve the desired operational productivity criteria. In that case, performance skills are characterized by the type of performance or element of the specific athlete, the particular performance technique, which is mostly unconscious in the realization of movements – automatic. Developing skills is the basis of an athlete's movement technique (Abele, 2009). So that the coach can successfully teach and improve technical preparation, very it is important to understand what movement skill is, how it is formed and what we train (Krauksts, 2006). Movement skills – such a level of learning movements when the student consciously controls the movements to be performed. They have a low execution speed, resistance to disturbing factors, low memorization stability, excessive stress, and redundant, unnecessary movements (Jansone & Fernāte, 2009). Movement skills – a level of movement learning characterized by a minimum control of consciousness, resilience to distractions, excellent stability, and resilience (automated movement) (Jansone & Fernāte, 2009).

The formation of movement skills is a dynamic process, and scientists divide it into learning.

3 stages:

1. Stage – the beginning stage of understanding movements and learning skills:
   • An idea of the course of movements is formed
   • Practical performance of the first attempts
   • A nerve connection is formed in the CNS
   • At the end of the stage, movement skills have been developed 10

2. Stage – the stage of building movement skills

The stage of development of the athlete's technical performance skills, in which many are performed using exact repetitions of the movement being taught. To build movement accuracy, first refines the content and form of movement execution, and then the speed parameters. At this stage, movement:
   • Becomes more accurate
   • Becomes more energy efficient
   • Feelings of movement are formed
   • Reduces the muscles included in the activity and not directly related to the activity tension
   • The athlete's confidence in the performance of the action increases
   • The emotional tension associated with the performance of the activity decreases
   • A myelin sheath begins to form on the nerve cords. Stage 3 – the stage of strengthening and improving movement skills. At this stage, motor skills reach a high level of automation and execution

performance. Various application possibilities of skills are formed accordingly to the conditions of the sports situation.

At this stage:

- Movement becomes automatic (dynamic stereotype)
- Spatial and rhythmic accuracy develops
- Even in a state of fatigue, the movement is sufficiently precise
- The athlete is sure of the success of the action
- Flowing, non-tense muscle action
- Variability of movements in different situations
- Stability, resistance to disturbances
- A multi-layered myelin sheath has formed on nerve cords

It should be understood that movement skills can be improved continuously – it is a continuous process because some part of the movement could always be more precise, more effective. Movements are improved by applying various obstacles, for example, operating in different performance conditions, at a fast pace of performance, on fatigue background, with the performance of various additional tasks, in various emotional states (Abele, 2009).

The age of 8–13 years for boys is the "golden age" (sensitive period) in the acquisition of movement skills – in technical readiness. It is necessary to acquire complex movement skills during this time because later, during and after puberty, it will be much more challenging to learn these skills (Bremanis, 2012). The sensitive period of movement skills is followed by a sensitive period of development of endurance and strength, as it is associated with maturation and hormonal changes, mainly considerable increases in testosterone in the blood, which is directly related to the increase in muscle mass and strength (Phelps, 2015).

Scientists emphasize that movement skills are best trained and developed up to 12–14 years of age, or pre-pubertal age, as it has been studied that directly during this age, neuronal bonds and synapses (connections) are formed most rapidly by motor neurons (plasticity). In puberty, this ability decreases rapidly; moreover, the brain must be able to adapt and control the rapidly growing body even more, making it challenging to learn new movement skills. (Balyi et al., 2013).

At 14, someone is still in pre-puberty. For someone, puberty has started, but someone is already in the final stages of puberty. After various studies and experienced trainers' observations, a prepubescent adolescent at the age of 14 will gain an additional advantage in learning motor skills relative to their peers because he has an "extended" golden age in learning movement skills, while accelerations which puberty is reached already at the age of 10–11 years, this period is shortened (Baur, J., 1987). It is possible to learn new movement skills at the "conditional learning level" at

any time in old age because the CNS maintains certain plasticity throughout life, but various studies prove that it requires about 5–10 times more work and time, and the movements are more likely not to be as accurate and automatic (Willams et al., 2018).

Essential factors that trainers should consider are PHV (Peak Height Velocity) and PWV (Peak Weight Velocity). PHV is reached during puberty. Until puberty, boys grow an average of 4–6 cm per year and gain an average of 2–3 kg per year. In the PHV period, boys grow 8–12 cm. Within 12 months after the PHV period, a period of PWV begins, under the influence of hormonal changes, during which muscle mass increases rapidly and bone matures. Body systems and young people gain an average of 9 kg per year. For athletes, weight gain is not related to weight gain – fat mass (Rogol et al., 2002).

It must be understood that a child who has not yet developed the PHV period will not be able to do the same amount of work, stand out with power and speed on the football field, and will not be able to win dueling with a young person after the PWV period. Coaches often say that he is small and powerless and does not pay enough attention to improving the skills of these children. Emphasis is placed on those children who can achieve the result "today," but in the range of 16–18 years old, everything can change as the retarders begin to accelerate. At this age, retardants reach an optimal stage of maturity, associated with an improvement in height and performance.

The growth, maturation, and working abilities processes have an integrated status, where genes, hormones, nutrition, and environmental factors interact at a constant level (Brown-Williams, 2018). Growth and maturation are unified processes, but the factors that influence these processes are mutually related and interdependent. Over the past 20 years, extensive research has been carried out to understand more about hormones and the mechanisms of these hormones for growth and maturation processes. Even producing only primary hormones that have a critical effect on growth and maturation processes, parallel to these hormones in other tissues, hormone-like molecules are produced, which have a sufficiently practical effect on growth and maturation processes (Krauksts., 2006).

In other countries, more attention is paid to the degree of maturity of football players and its relationship with their potential development in the future perspective. Analyzing the Belgium Player Training Program "The Belgium Vision the authors of the work "youth development" (Browaeys, 2013) conclude that much attention is paid to focus on the players' biological and calendar age.

Methodology

The research was done during the internship, working with the young footballers of Liepaja Football School (LFS), aged 15–16. The individual technical skills of the students were different, but since this is an elite group team, the technical skills were good or very good for everyone.

The practice and training took place in Liepaja, on the football field "Raina Park." There is a 90 m × 60 m football pitch with a natural lawn. Training took place five times a week.

The research aimed to find out and compare the level of technical training for accelerators and retardants (physical training for accelerators is better due to biological maturity) and whether emphasized and purposeful work to improve any movement skills significantly improves the movement skills of 15–16-year-old students. In task 2, it was essential to compare the results without and with the ball because the exercise characterizes the movement skills – the ability to drive the ball, partially excluding the benefits of maturity.

Accelerated and retardant students were determined together with the team's head coach by analyzing anthropometric measurements (PHV and PWV) over a long period, as well as evaluating the features on the scale of Professor James M. Tanner, a child development expert. He determines five stages of puberty (Oliva-Lozano et al., 2020). Stage 3 shows the fastest growth. Anthropometric measurements of LFS are performed four times a year. The research consists of 2 tasks: Task 1 – Juggling the ball. Exercise 2 – Skill race "Illinois without and with the ball ."Both tasks were recorded in 2 steps to record the best performance. The results were measured – at the beginning of the internship on September 15 to find out the individual technical skills of the students before the research, on October 11.2021 after focused and purposeful work on improving these skills, and for the third time on October 18.2021 to get more objective results.

Studies confirm that juggling improves brain function. It balances the brain's two hemispheres, as both legs are employed in the process. Each person has a dominant arm and leg, with which he usually performs various actions. However, practical brain training co-occurs when something is done to both limbs. Juggling increases the plasticity of the brain. Scientists have experimented. Several people who trained to juggle for six weeks were selected. Differences in brain function were observed, with an increase in brain white matter of 5% (Scholz et al., 2009).

Research

The practice of juggling the ball in football is critical because it develops the "feeling of the ball," reaction time, dexterity of the legs, balance, orientation, and differentiation. Studies confirm that juggling improves brain function and balances both cerebral hemispheres, as both legs are employed in this process. Every person has the dominant arm and leg with which he usually performs various actions. However, excellent brain training occurs when something is done with both limbs simultaneously. Juggling increases brain plasticity.

The principle of randomness was used to select several people who practiced juggling for six weeks. Differences were observed in brain activity – the amount of white matter in the brain had increased by 5% (Scholz et al., 2009). The initial tests were conducted on 15.09.2021 to determine the level of both respondent groups: exercise action – continuous dribbling of the ball without dropping it to the ground.
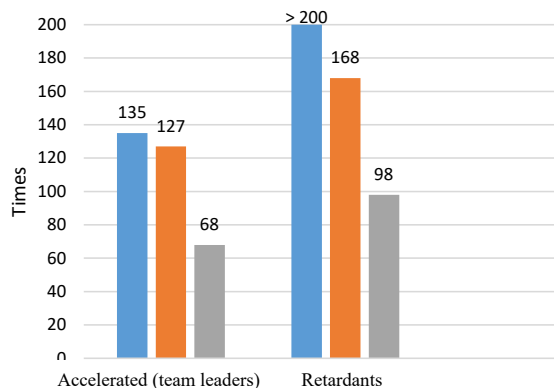

Figure 1. Juggling results 15.09.2021

To more clearly show the differences in technical training, Figure 1. shows the results of juggling comparing the three most technical students accelerated (team leaders) against the three most technical students retardants. Retardants showed better results in this exercise on 15.09.2021, showing a better "ball feeling."

After about a month of long technical training work in the respective exercise, another test was performed.

As seen in Figure 2, after an emphasis on work and a quality training process, juggling the ball – the feeling of the ball has significantly improved for all students, but the retardants have maintained their advantage over the accelerators.
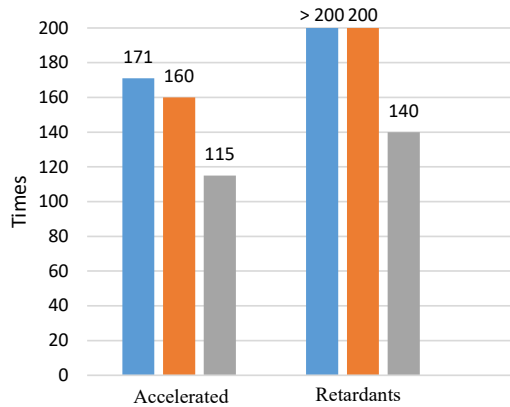
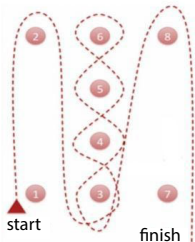**Figure 2.** Juggling result 18.10.2021

Task 2 – Illinois.

Illinois is an exercise included in the control standards for training groups in vocational sports education institutions. The Latvian Football Federation has developed them.

Figure 3. The structure of test Ilinoisa

For 15–16-year-old students (SMP-2 group) in the Illinois exercise determines the following evaluation criteria:
- 5 points 16.00 sec
- 4 points 17.00 sec
- 3 points in 17.80 sec

Control regulations provide for evaluating the exercise by performing it only without the ball, which is incorrect because these results partly allow us to judge the student's physical fitness, but they are not providing information about students' technical preparation. The authors believe that

after this exercise, by comparing the results without and with the ball, it is possible to judge the technical skills of the students' preparation – ball management skills. The greater the score difference, the more the ball's significant burden and the relevant movement skills required to guide the ball between the cones. The smaller the score difference, the more technique is learned and the movement skills required to perform the exercise.

Analyzing the obtained results on 13.09.2021, it is concluded that the accelerators show better results in the Illinois exercise without a ball, which can be explained by his degree of maturity. Retardants have slightly worse results.

In the Illinois ball exercise, the retardants show better results, which shows that they have better technical skills in handling the ball.

An essential factor to consider when analyzing these results is the difference between exercise without the ball and exercise with the ball.
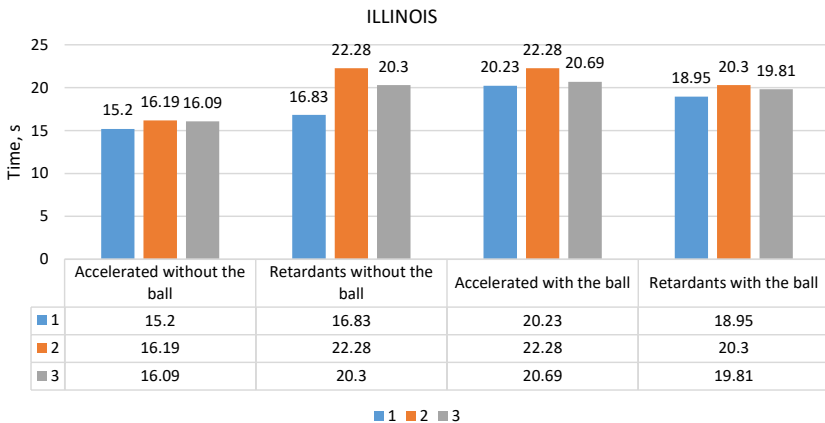
ILLINOIS

	Accelerated without the ball	Retardants without the ball	Accelerated with the ball	Retardants with the ball
1	15.2	16.83	20.23	18.95
2	16.19	22.28	22.28	20.3
3	16.09	20.3	20.69	19.81

■ 1   ■ 2   ■ 3

Figure 4. Illinois results 15.09.2021

Similar to the first ball dribbling exercise of the study, two measurements were taken in the Illinois test. The authors wanted to analyze the results presented and their possible progress, regression, or stagnation.

For the best accelerator, the result without the ball is 15.20 sec, but with the ball, 19.15 sec. The difference is 3.95 sec. This is the time that describes how much the ball makes it difficult to perform the exercise. The best retardant with serial no. 16 time difference is only 1.78 sec. Assuming that the student develops a maximum speed of 20–25 km/h during the exercise, which is 5.55–6.94 m/s, then we can imagine the approximate distance to the technically better-prepared student in front of the ball. The most significant time difference is for the accelerator with sequence no. 10–4.94 seconds. This figure describes the relatively poor development of the movement skills required to perform the exercise.
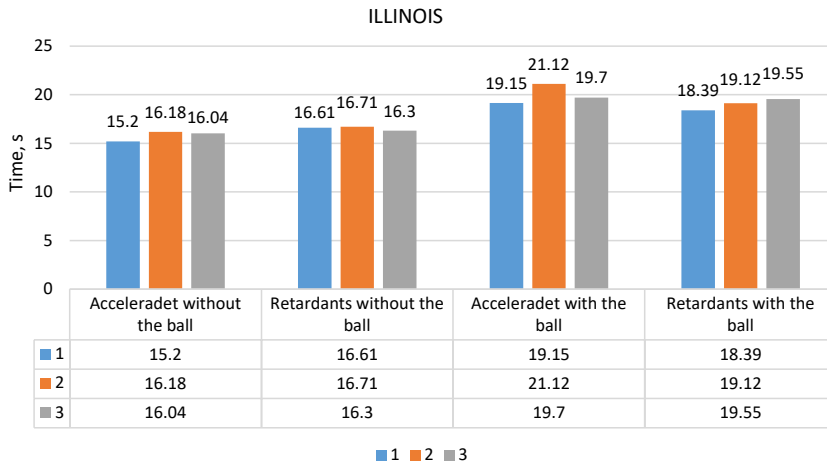
Figure 5. Illinois results 18.10.2021

Analyzing the obtained results on 18.10.2021, which were obtained after a high-quality and accentuated training process for improving ball driving skills, the results improved for all students, which means that growth and improvement of movement skills are also possible at the age of 15–16, if emphasized and paying attention to the details of the exercise.

Conclusion

- Technical training is better for retarders than for team leader accelerators.
- Qualitative and accentuated work can also improve some movement skills growth at the age of 15-16.
- It is essential to pay attention to the details and nuances of technical performance.
- Coaches need to pay more attention to improving technical training.
- Student acceleration does not mean student "talent." Performance is directly related to a degree of maturity rather than individual mastery. Young retardants have a "golden age" to develop new movement skills, and team leaders are primarily students.
- Analyzing task 1 – juggling the ball, the authors concluded that the "feeling of the ball" is better for students with retardants. Analyzing the 2nd task, the authors concluded that the ball-handling technique is a better retardant.
- The football system in Latvia is designed so that teams primarily strive to achieve results, which in turn facilitates the selection of team coaches in the starting line-up of teams students accelerate.

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SUSTAINABILITY OF EQUESTRIAN PHYSICAL ACTIVITIES DURING COVID-19 PANDEMIC

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ABSTRACT

Covid-19 and restrictions intended to curb the pandemic have affected all areas of human life, but in particular physical activities and exercise habits. Reduction in the time devoted to physical activities have been reported in all demographic groups in various countries, leading to both physical (excessive weight, deterioration of posture, decreased eyesight, increased blood pressure, etc.) and psychological problems (depressive mood). Equestrians were less susceptible to certain restrictions because they could exercise outdoors and individually. Also, horse owners are more likely to regularly spend time with their equine sporting partners. It remains to be determined if and to what extent the pandemic has affected the physical activities of equestrians and whether equestrian physical activities provide a sustainable source of exercise during Covid-19 pandemic. In order to determine this, empirical evidence was collected using a questionnaire that was distributed among the multinational base population of equestrians. The working hypothesis is that patterns of physical activity while working with horses and taking care of the animals had to be adjusted due to restrictions, but overall equestrian activities were sustained and, in some cases, might have even increased. At the same time, the nature of activities is more likely to have been changed: for instance, privileging individual outdoor trainings over group indoor ones and non-competitive recreational riding over competitive activities.

Keywords: *competitive; Covid-19; equestrian; physical activity; recreational; sport activities; sustainability*

Introduction

Covid-19 has affected all areas of human activity, including physical activity and exercise. Various studies have reported reduction in sport participation and physical exercise among different age groups, a tendency occasionally associated with the increase in occurrence of depressive moods, deterioration of emotional well-being, as well as some indulgence in unhealthy habits, such as overeating, augmented use of alcohol and smoking (Kravalis et al., 2021b; Baranauskas et al., 2022). Indeed, the excessive use of social media and lack of physical activity, coupled with social isolation

have long been known as a risk factor for alcoholism (Boyle et al., 2016; Peltiera et al., 2019), and this is especially the case during Covid-19 (Cerezo et al., 2021; Vogel et al., 2022). Additionally, Peyer et al. (2022) found that females and people with low levels of physical activity are more likely to need psychological intervention than those with higher levels of physical activity. No study to date has looked at the changes in the exercise patterns of people involved in equestrian sports, yet this group of people may show a different pattern than other for a variety of reasons, including the fact that equestrian trainings are often conducted outdoors and are either individual or in small groups of people, and thus less likely to be subject to restrictions designed to curb the spread of the disease. This development can be compared to the situation in other outdoor recreational activities, where the period of 2020-2021 saw an increase of attendance (Kravalis et al., 2021a). Moreover, they would be already committed to this sport and would also possibly be horse owners and thus more likely to do physical exercise not only for themselves but also in order to take care of their equines. Also, horses and horse riding are reputed to have a therapeutic effect and to facilitate mental, psychological and social well-being, as seen from a variety of initiatives that are grouped under the umbrella terms "horse therapy" and "riding therapy" (Ropa & Malahova, 2021).

This study looks at the physical activities among one cross-section of society, the equestrians, worldwide, considering changes in their physical exercise and their reported emotional well-being. The aim of the study is to determine if the amount of physical exercise among equestrians has changed. The study also looks at other aspects of the equestrians' lifestyle, including the varieties of physical exercise they undertake, changes in their reported emotional well-being and the equestrian activities that they do. The working hypothesis proposed by this study is that there would have been little or no reduction in the amount of physical activities among experienced equestrians. It remains to see if there is any correlation between the amount and stability of physical exercise and the equestrians' emotional well-being, which can be manifested in the frequency of depressive moods as compared to the period before Covid-19 pandemic.

Methodology

The study combines quantitative and qualitative methods of research. The quantitative study was conducted using an anonymous survey disseminated among equestrians. This survey was distributed using dedicated social media, namely Facebook groups dedicated to equine and equestrian history and animal studies. The survey included multiple choice questions and three questions with Likert scale 1–7 to determine the change in the

amount of physical activity and reported well-being, with 1 being "considerably less," 4 – "as much as before," and 7 – "considerably more". The data gained in the survey was analyzed using inbuilt Google Forms software and Excel 2016.The qualitative research was conducted by analyzing the comments made by the respondents to the survey and the comments made on social media where the survey was distributed.

Results

The survey was distributed in February 2022 among an international population of equestrians, and 44 answers were received in the course of the survey. The survey was disseminated using social media, namely English-language Facebook groups for the discussion of equestrian sport science and the history of equestrian sports, with international membership of scientists, students and equestrians interested in sports theory and history (Horse History in the Middle Ages and Beyond, https://www.facebook.com/groups/1890027421082745; Equine History Collective, https://www.facebook.com/groups/1656974127953630; Groupe Cheval et Sciences Humaines, https://www.facebook.com/groups/2107954459420660). The group members were invited to share the survey outside the groups. The survey was anonymous, and the respondents were informed about the rationale of the survey.

Further on, the survey shared on the social media generated some discussion, as equestrians shared their observations among equestrian activities in their geographic area and changes in their own equestrian lifestyles using the comment function. The comments were copied and saved for analysis, and were used with the authors' consent.

The majority of the respondents (39 out of 44) were female, and only 5 of the respondents were male, reflecting the fact that women participate in amateur and lower level professional equestrian sports more often than men (Ropa, 2019; Ropa & Shmakova, 2018). As to the ages, most of the respondents were senior riders aged over 50 (24), an outcome which may be due to the media through which the survey was distributed. 11 were in the age bracket of 40–49 years old, 7 in the previous age bracket 30–39 years old, and the 2 remaining respondents were aged 20–29. There were no respondents under 20 (see Fig. 1).

The next question targeted the length of the respondents' equestrian experience, i. e., how long they have been involved in equestrianism, riding or working with horses. It was found that all of the respondents were experienced equestrians with more than 5 years of experience in the sport. In order to determine the respondents' level of investment in the sport, it was also asked if they owned a horse or another equid.
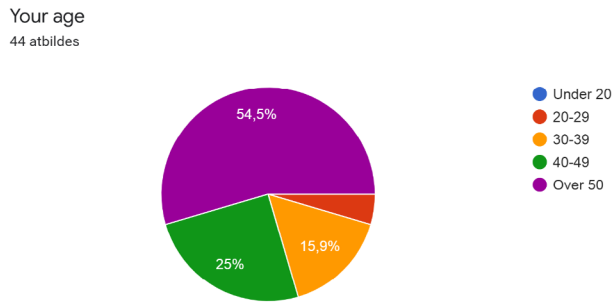
Your age
44 atbildes

Figure 1. Age of the respondents

Only 7 respondents owned no equids, while one quarter (11 respondents) owned a single equid, 6 owned two equids, and 20 respondents had 3 or more equids, which would entail serious investment in this activity, such as owning a stable, being involved in the operations of a stable or at least a considerable financial investment in keeping the animals (see Fig. 2).
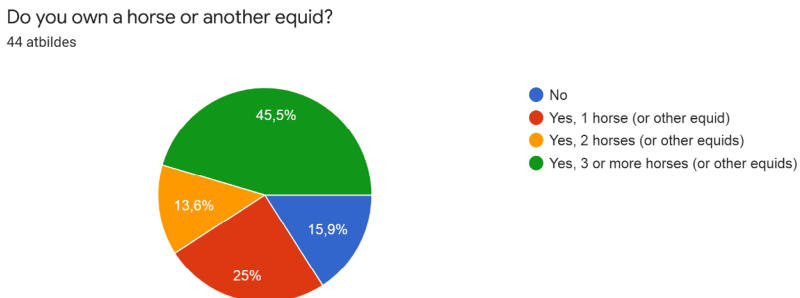
Do you own a horse or another equid?
44 atbildes

Figure 2. Ownership of equids

The following questions were designed to determine the physical activities of the equestrians, changes in the amount of physical activity since the beginning of the pandemic, and changes in reported emotional well-being. Two questions concerned changes in the level of physical activity, both related to working with horses and not related to training with horses (e. g. , taking care of horses), during the pandemic, using a Likert scale of 1–7 (1 being "considerably less," and 7 being "considerably more"), with 4 indicating no change in the level of activity. In both questions designed to measure changes in physical activity 4 scored the highest number of responses (chosen by 20 respondents for training and by 27 respondents for other physical activities) (see Figs 3 and 4). Also, answering the question about riding and training, 3 respondents chose 1 (considerably less time devoted to the activity), 2 respondents chose 2 (less time) and

5 respondents chose 3 (slightly less time), whereas 7 respondents chose 5 (slightly more time), 3 respondents chose 6 (more time) and 4 respondents chose 7 (considerably more time). Thus, the percentage of people who could spend more time training was large than the percentage of equestrians spending less time training, whereas nearly half (20 respondents) spent as much time on training as before the pandemic. For other horse-related physical activities, one respondent chose 1 (much less time devoted to the activity), three respondents chose 2 (less time), and also one respondent chose 3 (slightly less time), whereas six respondents chose 5 (slightly more time), two respondents chose 6 (more time) and four respondents chose 7 (much more time). Thus, again, the number of equestrians spending more time on horse-related physical activities exceeded the number of equestrians that did less physical activities related to horses, albeit the majority (27 respondents) did not register any change in the time they spent on horse related physical activities.

How much time do you spend riding or doing non-riding work with horses as compared to the time before the pandemic? (4 - as much as before)
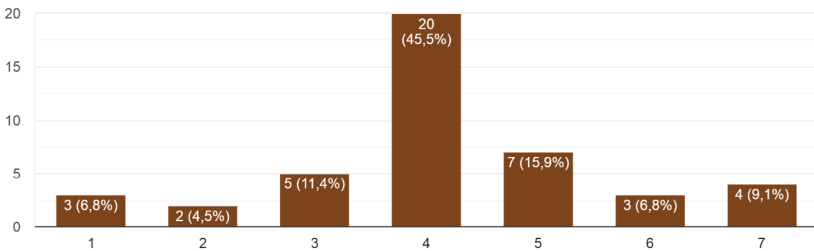44 atbildes

Figure 3. Changes in working with horses before and during the pandemic

How much time do you spend doing horse related physical activities that are not part of training (e.g., feeding, mucking out, etc.) as compared to ... time before the pandemic? (4 - as much as before)
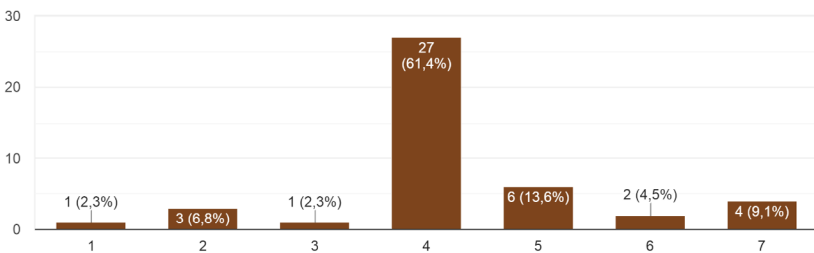44 atbildes

Figure 4. Changes in doing other physical activities before and during the pandemic

Concerning reported emotional well-being, the Likert scale of 1–7 was used again, where 1 represented feeling depressed or experiencing other negative emotions as compared to the time before the pandemic "much more often," 4 – "as often as before" and 7 – "much less often". Albeit 15 respondents selected 4, meaning no change, 9 and 8 respondents, respectively, selected 2 and 3 (feeling depressed more often and slightly more often, respectively), whereas 3, 6 and 2 respondents selected 5, 6 and 7, respectively, signaling increased emotional well-being. Only one respondent signaled feeling depressed considerably more often (see Fig. 5).

How often did you feel depressed or experience other negative emotions as compared to the time before the pandemic? (4 - as often as before)
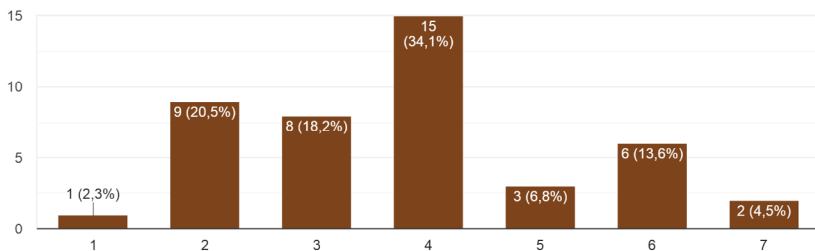44 atbildes

Figure 5. Changes in reported emotional well-being

Additionally, it was found that other sports and physical activities were regularly exercised by many, though not all of the equestrians completing the survey. Approximately one third, that is, 16 respondents, did not do other physical activities, whereas a compatible number of equestrians, 15, worked out both indoors and outdoors. Working out only outdoors was an option for 9 respondents, but the option of working out only indoors was the least popular, as it was selected by only 4 of the respondents (see Fig. 6).

Do you do sports or physical activities other than those related to horses? If yes, where?
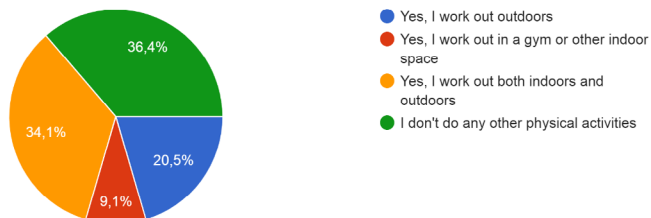44 atbildes

- Yes, I work out outdoors
- Yes, I work out in a gym or other indoor space
- Yes, I work out both indoors and outdoors
- I don't do any other physical activities

Figure 6. Presence of other physical activities

Further two questions targeted the disciplines and types of training done by the respondents as well as the reasons that prevented them from training more often.

It was possible to choose multiple options in answering the question about the equestrian work they did, as well as contribute their own answer, writing in "other" field. It was found that over half of the respondents (27 respondents) exercised for pleasure, non-competitively and/or worked from the ground (25 respondents), whereas half of the respondents (22) did dressage. Work from the ground is essential for all equestrian sports and can be done in combination with another event or on its own. Other popular responses included trail riding (15 respondents), mounted fighting (8 respondents), show jumping (7 respondents), eventing (4 respondents) and western riding (4 respondents), showing the heterogeneity in the equestrian population who completed the survey. Individual respondents also noted that they practiced endurance riding, mounted games, foxhunting, riding sidesaddle, etc. (see Fig. 7).

How would you describe the work you do with your horse? (check all that apply; please only write in the "other" field if none of the options can be approximated to your equestrian discipline)
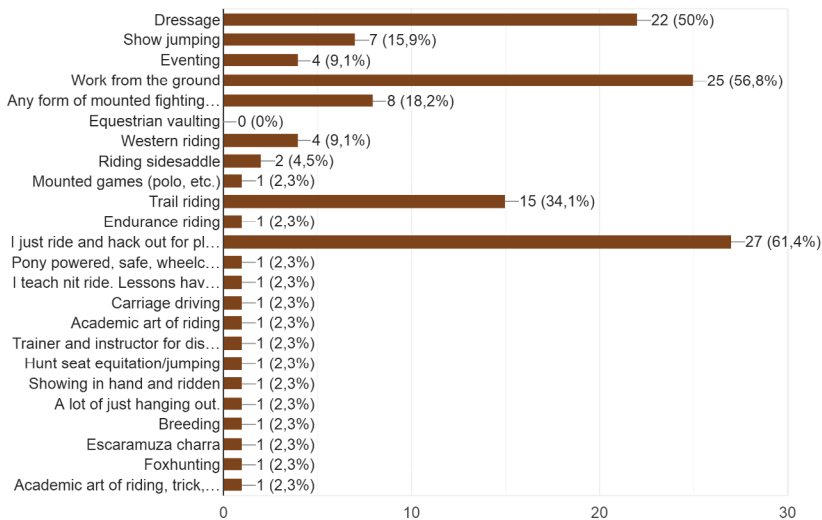44 atbildes

Dressage	22 (50%)
Show jumping	7 (15,9%)
Eventing	4 (9,1%)
Work from the ground	25 (56,8%)
Any form of mounted fighting…	8 (18,2%)
Equestrian vaulting	0 (0%)
Western riding	4 (9,1%)
Riding sidesaddle	2 (4,5%)
Mounted games (polo, etc.)	1 (2,3%)
Trail riding	15 (34,1%)
Endurance riding	1 (2,3%)
I just ride and hack out for pl…	27 (61,4%)
Pony powered, safe, wheelc…	1 (2,3%)
I teach nit ride. Lessons hav…	1 (2,3%)
Carriage driving	1 (2,3%)
Academic art of riding	1 (2,3%)
Trainer and instructor for dis…	1 (2,3%)
Hunt seat equitation/jumping	1 (2,3%)
Showing in hand and ridden	1 (2,3%)
A lot of just hanging out.	1 (2,3%)
Breeding	1 (2,3%)
Escaramuza charra	1 (2,3%)
Foxhunting	1 (2,3%)
Academic art of riding, trick,…	1 (2,3%)

Figure 7. The equestrian disciplines and activities exercised by the respondents

The final question was about the factors that prevented the respondents from training more often, and, again, it was possible to choose from multiple options. Over half of the respondents (24) indicated "lack of time" as the reason, but adverse weather was the second most popular option,

selected by 17 respondents. This is an important consideration, as not all riding facilities have a covered arena, and the use of a covered arena may have been restricted during Covid-19. However, the third most popular answer, chosen by 9 respondents, was "I ride as often as I want," signaling that the respondents saw no factors that prevented them from riding and were content with their training schedule, which may have contributed to their reported well-being. Further popular options included financial considerations (selected by 8 respondents), a problem which may have been intensified by Covid-19, as many people lost work or experienced reductions in salary. The options "Covid-related restrictions" and "Lack of access to the horse" scored an equal number of votes (selected by 5 respondents): both could influence the equestrians' exercise habits, but were not decisive factors (see Fig. 8).
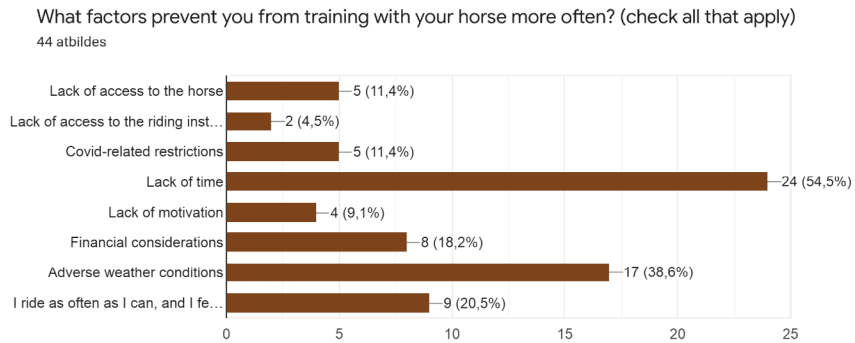
What factors prevent you from training with your horse more often? (check all that apply)
44 atbildes

Lack of access to the horse	5 (11,4%)
Lack of access to the riding inst…	2 (4,5%)
Covid-related restrictions	5 (11,4%)
Lack of time	24 (54,5%)
Lack of motivation	4 (9,1%)
Financial considerations	8 (18,2%)
Adverse weather conditions	17 (38,6%)
I ride as often as I can, and I fe…	9 (20,5%)

Figure 8. Factors preventing respondents from training more often

The results of the survey were complimented by the qualitative analysis of comments made to the penultimate answer about the equestrian events and comments on the survey made on social media using the "Comment" function in the groups where the questionnaire was shared. The mini interviews were conducted at the same time when the survey was effected, in February 2022. The qualitative study reported no pronounced effects of restrictions on the equestrians' ability to train. Certain equestrians were able to spend more time with their horses because they did not have to travel to work and could do certain activities, e. g. , participating in meetings, from the stable. Thus, one of the respondents wrote "I teach nit riding. Lessons have increased a lot." Another equestrians commenting on the survey noted: "Covid-19 has not affected me at all. I live on a farm. It's been great." This shows that Covid-19 related changes to lifestyle have not been always perceived as something negative; on the contrary, they enabled some equestrians to spend more time with their horses doing the physical work and training that they enjoy. Others, however, were

less lucky, due to changes in their financial situation, as one commenter indicated: "Canada had a pretty hard lockdown. Several of her clients [the clients of the commenter's relative, who ran a riding facility] had to sell their horses because they couldn't work and thus couldn't afford to keep them. And my sister was only allowed to have one client in the barn at a time." However, the respondent also noted that the change was positive for the riding instructor, who closed the facility but could concentrate on her own riding and became happier as a result.

Discussion

There was no clear correlation between stability in the amount of exercise and reported emotional well-being expressed in the frequency with which depressive moods occurred in respondents based on the survey. The results of the mini-interviews show some correlation, e. g. , when a respondent was not affected and reported things as "being great" or when a decrease in professional activity resulted in increased training time for a respondent's relative ("I think she'd glad that she has retired and downsized! Now she actually gets to ride her own horses more!"). Thus, Baranauskas et al. note that increased physical activity can reduce the risk of depression by up to 45% (2022).

Still, the causes of depressive mood can have no relation to the amount of exercise: as one study shows, isolation, financial pressures and insecurities and other factors can cause depressive moods and other negative emotions, and physical exercise may not be enough to help (Baranauskas, 2022). Moreover, literature on the subject does not show clear and consistent correlation between self-reported physical activity and the occurrence of depressive symptoms in adult population (Demaray et al., 2022; Mushquash & Grassia, 2021). Similarly, the mini-interviews suggest that while some equestrians benefitted from flexible working hours, the possibility to work from home and avoid commuting to work and even an occasional opportunity to attend a virtual work meeting from the barn, others have suffered from the loss of work or a reduction in salary. Thus, it was reported that "several … clients had to sell their horses because they couldn't work and thus couldn't afford to keep them." Inability to keep one's horse would have been a serious stress factor and could even lead to depression. Moreover, the same interviewee mentioned that her sister "was only allowed to have one client in the barn at a time," which would have caused stress to all parties, including the horse owners and riders, who would have to schedule the hours when they could train and see their horses. It would also make the experience of training a lonely one, not to mention the anxiety over overrunning one's allotted time or not being able

to make it. This is one example of how Covid-related restrictions could have affected equestrians, including those who owned horses themselves.

Overall, the outcome of Covid-19 on the equestrian population worldwide are heterogenous and need further, more nuanced research. The general pattern, however, is that of a relatively sustainable and resilient community continuing and even increasing their physical activity and participation in sport. Their participation in sports and pattern of training and performing physical activities during Covid-19 is more sustained as compared to other populations studied in previous research, such as youths (Kravalis et al., 2021), students (Baranauskas et al., 2022; Mushquash & Grassia, 2021) and general population (Vogel et al., 2022).

Conclusions

The research conducted as part of the study shows that equestrian and horse-related physical activities, which can be and often are conducted outdoors, remained relatively sustained among adult equestrians targeted by the study. The equestrians remained overall more resilient to changes in the circumstances and to Covid-19 related restrictions, as compared to other studies targeting different populations, referenced above. However, no clear correlation was detected between the occurrence of depressive moods and amount of physical activities. It is likely that other factors apart from physical exercise influenced the emotional reported well-being of the equestrians targeted by the study.

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INTERNAL COMMUNICATION AND MANAGEMENT BY OBIECTIVES IN SPORTS PROFILE INSTITUTIONS

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ABSTRACT

Effective communication is required not only in interpersonal/human relationships but also in a successful management. In the real world, there is no organization without good communication.

Since the acceptance of "management" as a separate body of knowledge over a half century ago, no management tool has had such a pervasive impact on organizations as the management by objectives.

In this article, a cross-sectional study was conducted using the survey method based on a questionnaire with 24 items (10 items for the variable internal communication; 10 items for the variable management by obiectives and 4 items for demographic data: gender, age, city and work institutions).

The main objective of this study is to show what kind of connection there is between the variable internal communication and the variable management by objectives among teachers from high schools with sports program and the teachers from faculties of physical education and sports in the Eastern side of Romania (Moldova Region). We also wanted to see if there is a difference between internal communication among high school teachers compared to university teachers. The same aspect of the difference was analyzed in the case of the management by obiectives variable.

The study has 127 validated questionnaires that were completed by 80 teachers working in eight high schools with sports program and 47 teachers working in four faculties of physical education and sports in the Eastern side of Romania.

Keywords: communication, educational institutions, management, physical education, sports.

Introduction

The aim of this study is to show what kind of connection there is between the variable internal communication (IC) and the variable management by objectives (MBO) among teachers of high schools with sports programs and teachers of faculties of physical education and sports in the Eastern side of Romania (Region Moldova).

Defining the variable Internal Communication (IC)

It is not possible to have good interpersonal/human relationships without communication. On the other hand effective communication is required not only for interpersonal/human relationships but for a good and successful business (Spaho, 2011).

Managers have long recognized the importance of IC. However, it is seen from the perspective of management rather than the employee. As Welch and Jackson (2007) argue, "research into employee preferences for channel and content of internal corporate communication is required to ensure it meets employees' needs". This is echoed by Uusi-Rauva and Nurkka (2010) who assert that "little research has focused on finding out what employees consider important in the internal *expert communication process*".

IC, often perceived as a synonym for intra-organizational communication, is quite often equated with the employee communication inside of an organization (Putnam & Poole, 2008).

The main objective of IC is to inform the employees about the objectives and policies of the institution and to help them understand their tasks, obligations, and merits within the institution. IC (managers – employees) when open – thus incorporating listening and feedback and facilitating decision-making – constructs and maintains relationships (Mazzei, 2014).

Defining the variable Management by Objectives (MBO)

Public service institutions particularly need objectives and concentration of efforts on goals and results – that is management. These are, of course, precisely the needs management by objectives and self-control (MBO) promises to satisfy. But the same reasons which make MBO potentially so productive for the public service institution also make it only too easy for the institution to mistake MBO procedures for the substance of both management and objectives. Indeed, they may encourage the fatal error of mis using MBO as a substitute for thinking and decision making. Therefore, the administrator in the public service institution needs a "users'guide" (Drucker, 1976).

A management program may be ineffective because it is not fully implemented and not necessarily because the organizational process behind

the program is faulty. The key point in the program implementation is the extent of top-management involvement in the MBO program (Rodgers & Hunter, 1992).

The key aspects of management activities are the motivation and the development of the employees, and the effective managerial behaviour includes interaction and communication with subordinates. The management by objectives (MBO) emphasizes that both superiors and subordinates jointly define performance goals, and coordinate their efforts towards the goal attainment (Konradt, Hertel & Schmook, 2003).

MBO can be summarized as a group of management techniques with an emphasis on three components: setting of goals, participation, and feedback on task fulfilment (McConkie, 1979). These three basic components account for high motivation, performance, and employees job satisfaction.

Methodology

Participants and design

127 respondents participated in this study (54 females and 73 males), with a mean age of 44.82 years ($SD = \pm 7.15$ years; see Table 1). They are teachers and come from twelve sports institutions (four faculties of physical education and sports and eight high schools with sports program) in the Eastern side of Romania, Region of Moldova (cities: Suceava, Botosani, Piatra Neamt, Iasi, Bacau, Vaslui, Focsani, Galati; see Table 2).

Table 1. The gender and age of the people introduced in the study

		Frequency	Percent	Mean Age	Std. Dev. Age	Std. Error Mean Age	Median Age	Mode Age	Min Age	Max Age	Range Age
Valid	Female	54	42.5%	45.33	7.516	1.023	45.50	45	29	63	34
	Male	73	57.5%	44.44	6.902	0.808	45.00	44	28	64	36
	Total	127	100.0%	44.82	7.154	0.635	45.00	45	28	64	36

Of the 127 respondents, 80 (63%) have employment contracts in high schools with a sports program, and 47 (37%) have employment contracts with physical education and sports faculties. The research subjects have a minimum of five years of experience and they are employed for an indefinite period (see Table 2).

The research method used to conduct this study was the questionnaire survey method. The questionnaires were sent to the sports institutions employees by email with the consent of their managers (directors, deans).

Table 2. Cities and environment (high school or university)from which the respondents come

Town/City	High School	University	High School + University	Percent
Suceava	10	11	21	16.5
Botosani	10	0	10	7.9
Piatra Neamt	10	0	10	7.9
Iasi	10	12	22	17.3
Bacau	10	12	22	17.3
Vaslui	10	0	10	7.9
Focsani	10	0	10	7.9
Galati	10	12	22	17.3
Total	80	47	127	100%

Measurement of variables

To measure the MBO variable we used a questionnaire as a data collection tool (Latham & Locke, 1979; Locke & Latham, 1984; 1990; Konradt, et al., 2003). The original questionnaires contained over thirty items. In this research we used ten items for the variable MBO, these are presented in the table below (see Table 3). In this research MBO is used as a dependent variable.

Table 3. Items used to measure the MBO variable

1) I have specific, clear goals that I pursue at work.

2) My Director / Dean allows me to have something to say in deciding how I will proceed to implement the objectives.

3) If I reach my goals, my chances of promotion are higher.

4) During the performance evaluation period, my director / dean focuses on problem solving rather than criticism.

5) I feel proud when I receive feedback indicating that I have achieved my goals

6) My director / dean clearly explains the reasons behind the achievement of the objectives.

7) The work teams in the institution where I am employed work together to achieve the objectives.

8) My goals are too difficult.

9) The goals in my institution are used more to punish me than to help me do my job well.

10) The goals I have at work make me ignore certain important aspects of my job.

The study participants responded to the items in this variable using a our-point scale (1-never; 2-almost never; 3-almost always, 4-always). In the specialized literature (Locke & Latham, 1990; Konradt, et al., 2003) the scale has five points (1-almost never to 5-almost always, where point 3 is neutral). The Roamnian respondents tend to tick point 3 to be in the neutral situation, which is why this value 3 was removed from this research. The internal consistency of the items in this MBO variable is very good, Cronbach's Alpha = 0.92 (see Table 5).

To measure the variable IC we used the same tool – the questionnaire. In the current research we used ten items for the IC variable, these are presented in the table below and they have been adapted from the specialized literature (Locke & Latham, 1990; Van den Bosch, Elving & De Jong, 2006; Konradt, et al., 2003; Grandien & Johansson, 2012; Ruck & Welch, 2012). In this research IC is used as an independent variable.

Table 4. Items used to measure the IC variable

1) I know the way of internal communication and the accepted channels as good for an effective and efficient communication within the institution.
2) My Director/Dean allows me to have something to say in adapting internal communication to my personal needs.
3) If my mode of communication is as formal / official as possible my chances of promotion are higher.
4) During the performance evaluation period, my director / dean focuses more on formal communication than on informal communication.
5) I feel proud when I receive feedback indicating that I have had a good level of communication.
6) My director / dean clearly explains to me why internal communication has an important role in institutional management.
7) In general there is a good communication between the employees of the institution which leads to the achievement of the organizational objectives.
8) The content of the internal communication and the channels through which the communication is made cause me a state of discomfort.
9) Internal communication in the institution where I am employed is used more to punish me than to help me do my job well.
10) The internal communication within the institution causes me to ignore certain important aspects of my work.

Study participants responded to the items in this variable using the same four-point scale (1-never; 2-almost never; 3-almost always, 4-always). The internal consistency of the items within this IC variable has a very good level, Cronbach's Alpha = 0.93 (see Table 5).

Research hypotheses

There is a difference of IC in high schools with sports program compared to the faculties of physical education and sports.

There is a difference of MBO in high schools with sports program compared to the faculties of physical education and sports.

There is a positive relationship between IC and MBO in schools with a sports profile in the Eastern side of Romania.

Results

The quantitative analysis of the data obtained in the research was performed through the SPSS 20 software. The statistical indicators calculated in this research are: the internal consistency of the variables – *Cronbach's Alpha Coefficient*; the difference of the averages between two independent samples – *Independent-Samples T Test*; the correlation between two variables – *Correlate Bivariate (Pearson and Spearman Coefficient)*; the regression between two variables – *Regression linear*.

The Cronbach's Alpha Coefficient was used to evaluate the internal consistency of the items in each variable, meaning how these items tend to measure the same thing (internal construct analysis). In the specialized literature (Cohen, 1988; Malhotra, 1996; George & Mallery, 2003; Schumacker & Lomax, 2004) it is recommended that each item have a Cronbach's Alpha value over 0.6 and the variable (construct) as a whole should have the value this coefficient over 0.7. In our research the above specifications have been applied/followed, the variables in this study have a Cronbach's Alpha Coefficient over 0.9 (see Table 5).

Table 5.　Internal consistency of variables

Variable	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	*N* of Items
MBO	.924	.928	10
IC	.937	.940	10

Hypothesis testing

The first two research hypotheses were tested using *the t-Test for independent samples*. This test is used when the two sets of variables come from two different samples of people (high school employees and university employees).

Testing Hypothesis 1: *There is a difference of IC in high schools with sports program compared to the faculties of physical education and sports.*

The average for the values of the IC variable of the teachers coming from the high schools with sports program (M = 2.54; SD = ±0.85) is not significantly higher (t = 0.19; DF = 125; two-tailed p = 0.84 – the significance threshold is higher than 0.05) than the average of teachers from the faculties of physical education and sports (M = 2.51; SD = ±0.79; see Table 6).

Table 6. Independent Samples Test – variable IC

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	$Sig.$	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Variable IC	Equal variances assumed	.702	.404	.199	125	.843	.03048	.15321	–.27274	.33369
	Equal variances not assumed			.203	102.83	.839	.03048	.15004	–.26709	.32804

These statistical calculations lead to the conclusion that hypothesis 1 of this research is invalidated and the null hypothesis is accepted: *there is no difference between the IC averages for the two samples (high school and university) in schools with a sports profile in the Eastern side of Romania.*

Testing Hypothesis 2: *There is a difference of MBO in high schools with sports program compared to the faculties of physical education and sports.*

The average for the values of the MBO variable of the teachers coming from the high schools with sports program (M = 2.49; SD = ±0.79) is not significantly higher (t = 0.10; DF = 125; two-tailed p = 0.91 – the significance threshold is higher than 0.05) than the average of teachers from the faculties of physical education and sports (M = 2.48; SD = ±0.73). The difference is statistically insignificant at the significance level of 5% (two-tailed) and the 95% confidence interval (see Table 7).

These statistical calculations lead to the conclusion that hypothesis 2 of this research is invalidated and the null hypothesis is accepted: *there is no difference between the MBO averages for the two samples (high school and university) in schools with a sports profile in Eastern side of Romania.*

Table 7. Independent Samples Test – variable MBO

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	*Sig.*	*t*	*DF*	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Variable MBO	Equal variances assumed	.719	.398	.109	125	.914	.01540	.14179	–.26522	.29602
	Equal variances not assumed			.111	103.12	.912	.01540	.13872	–.25972	.29052

Testing Hypothesis 3: *There is a positive relationship between IC and MBO in schools with a sports profile in Eastern side of Romania.*

The testing of the third hypothesis was performed through bivariate correlation (*Pearson and Spearman Coefficient*). Through bivariate correlation you can see what kind of connection there is between two variables (positive or negative) and what is its intensity (low, medium or high).

Table 8. Pearson and Spearman Coefficient

Pearson Coefficient		**Variable IC**	**Variable MBO**
Variable IC	Correlation	1	.718**
	Sig. (2-tailed)		.000
	N	127	127
Variable MBO	Correlation	.718**	1
	Sig. (2-tailed)	.000	
	N	127	127
Spearman Coefficient		**Variable IC**	**Variable MBO**
Variable IC	Correlation	1	.680**
	Sig. (2-tailed)		.000
	N	127	127
Variable MBO	Correlation	.680**	1
	Sig. (2-tailed)	.000	
	N	127	127

**. Correlation is significant at the 0.01 level (2-tailed).

From the statistical calculations (*Pearson and Spearman Coefficient* – see Table 8) we can say that there is a significant positive relationship, of high intensity, between the variable IC and MBO (*Pearson r* = 0.71; *Spearman r* = 0.68; *DF* = 125; *p* <0.01). The relationship is statistically significant at the significance level (two-tailed) of 1% and the confidence interval of 99%. In other words, there is a probability of less than 1% to obtain a *r* = 0.71 Pearson and *r* = 0.68 Spearman if there is no correlation between the two variables.

In the context in which this hypothesis is confirmed (namely, the fact that *there is a positive relationship between IC and MBO*) the following question arises: *what is the proportionality of the relationship between the two variables?* In other words, if the IC variable increases by one unit, how much will the MBO variable increase? To answer this question we will use the *Regression Coefficient Unstandardized* (see Table 9).

Table 9. Regression Coefficient Unstandardized

	Unstandardized Coefficients		Standardized Coefficients	*t*	Sig.	95,0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	.805	.154		5.240	.000	.501	1.109
Variable IC	.665	.058	.718	11.537	.000	.551	.779

Dependent Variable: MBO

The table above shows that between the variables IC and MBO there is a Regression Coefficient Unstandardized with a value of 0.66. This means that for every increase of the IC variable with 1, the value of the MBO variable will increase with 0.66.

Conclusions

Within the schools with sports profile (high schools with sports program and faculties of physical education and sports) in the Eastern side of Romania there is no significant differentiation of the IC level. The average value of the IC level in high school with a sports program is *M* = 2.54 and *SD* = ±0.85, compared to *M* = 2.51; *SD* = ±0.79 within the faculties of physical education and sports. The difference is statistically insignificant at the significance level (two-tailed) of 5% and the 95% confidence interval.

The most important role of IC is building relationships. Relationship building will provide strong basis in case of management crisis and help

in facing the institution changes. This will raise the employees' morale and will have a great contribution to the institution's strategic goals.

Regarding MBO, the difference is still insignificant. The average value of the MBO level in high schools with sports program is $M = 2.49$ and $SD = \pm 0.79$, compared to $M = 2.48$ and $SD = \pm 0.73$ in the faculties of physical education and sports. The difference is statistically insignificant at the significance level (two-tailed) of 5% and the 95% confidence interval.

Managers of institutions with a sports profile will continue to embrace new management programs that offer the promise of significant productivity gain.

In the components of properly implemented MBO programs feedback is essential, goal setting is critical, and participation in decision making is expected.

Through hypothesis 3 we put the two variables IC and MBO in a causal relationship. Statistical indicators such as Pearson and Spearman Coefficient have helped us to demonstrate that in sports institutions from the Eastern side of Romania there is a positive relationship of high intensity between IC and MBO ($r = 0.71$ Pearson and $r = 0.68$ Spearman). Also Regression Coefficient Unstandardized us shows us that for every increase of the IC variable with 1, the value of the MBO variable will increase with 0.66. A better IC level will lead to better management.

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DEVELOPMENT OF THE APPLICATION TO PROMOTE DAILY PHYSICAL ACTIVITIES IN ADOLESCENTS

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ABSTRACT

Many people, especially adolescents, use mobile applications to control their physical activities and reduce sedentary behaviors. While a large variety of sports applications are available, detection of the activity type is a new research area. There are also specific methods how to measure and collect data or control the type of sports activities. Literature research shows that analysis of the current sports application market is evolving in a fast speed. Some authors show that neuron networks can help detect and analyze specific data of sports activities using sensors or mobile phone.

The aim of this research was three-folded: 1) to develop sports application for a simple exercise to promote physical activity in adolescents, 2) to study the abilities of artificial intelligence in a sports application context, and 3) to create an application for detecting and counting everyday physical activity.

Methodology: two applications were created, (1) for data collection, and (2) for everyday usage. Many deep learning models and their parameters were tested.

Results: application prototype to detect one simple physical activity (squats) using neuron networks was created, one neuron network model to detect and count activity squats was made. Neural network models for walking and jumping rope were created.

Conclusions: it is possible to use sports application for adolescents to promote their physical activity. The neuron network model can be used in mobile phone, while the use of this model is dependent on various factors.

Keywords: mobile application, adolescents, physical activity, deep learning, neuron networks

Introduction

The aim of this research is to create an app to motivate adolescents to become physically active, our tasks are to research artificial intelligence possibilities in the sports application context and create an application to detect activities and count them.

United Nations admits insufficient physical activities are in the 4th place in the risk of death. In the time of the pandemics the risk rises even higher (Meyer et al., 2021). Physical activities are important in promoting the development of adolescents, they reduce the risk of heart diseases, cancer etc (Hallal et al., 2006; Barkleya et al., 2020). There are many methods for reducing the risk of being physically inactive: making games, using special personnel as well as creating mobile sports applications (Barkleya et al., 2020; Luo, He, 2021). There is ongoing research specifically in the neuron networks field to create sports applications, that can detect physical activities.

There are many examples of sports applications, for example, BunnyBolt, Runtastic. The effect of application usage on adolescents to promote physical activity in general is positive. Specific tasks and games have been developed to promote physical activity for adolescents. It is found that applications can create positive effects like improving motivation to do physical activities and making fun. Competition can occur between adolescents, but it is not the main factor (Barkleya et al., 2020, Keung et al., 2013; Klenk et al., 2017).

Artificial intelligence is an actively researched field when activity needs to be counted and/or detected. Birmingham university researchers have tested many artificial intelligence methods. Good results were received by methods that are not deep neuron network: k-nearest neighbor, support vector machine, shallow neuron network. The best results were achieved with the deep learning method. Researchers used mobile phones to collect data, and if it was needed, participants held phone in hand to analyze and collect data. Best accuracy was 0.974 which they got from deep neural network (DNN) (Huang et al., 2022).

Another example is from the University of Antioquia Columbia. Researchers created an application to detect 19 different everyday activities and 15 special sports falling activities and used deep neural network to create the application. Activities included for example running, sitting, jumping, get into and off the car. The used model use RCNN-LSTM (recurrent convolutional – long short term memory) neural network (Sucerquia et al., 2016).

In our project we made an approach to count and quantify physical activities using YOLO (you only look once) model. There are many ways how to calculate results from obtained data. Various optimization methods could be used. It is possible to create logical schemes to get results. There are models which allow playing games. There are developed models for calculating many different moves. It is possible to plan when and what could be done, for different obtained data. The hardest part is to make the model learn from given data and results. Learning model better reacts to known data, but for new data new model needs to be trained, then good output results could be achieved (Russell & Norvig, 2021).

Deep learning

A theoretical analysis of deep neural networks is performed in this subsection. Deep learning could be defined as when there are many layers, they are connected with each other, and they influence each other. The core element of the neural network is a neuron or base function also called perceptron. A base function is a mathematical function. Examples of base functions are sigmoid, ReLU, tanh etc. Neuron networks are connected similarly to brain, of course, connections can be in different shapes and layers and their number depends on each model's needs. There are different types of deep neural networks (Russel & Norvig, 2021; Krohn, 2020). Convolution neural network (CNN) is used to minimize data processing. Convolution result is defined as data and filter multiplication. In the convolution network, there are given input data, and after the convolution procedure, there is less information at the output (Burkov, 2019; Russel & Norvig, 2021).

Using neural networks multiplying and filtering of data are used at the beginning. Then we sum it up, and additionally, we can add an extra sum (bias). Filters can be different on different data. The filter is also called the kernel. For data borders, there can be padding as well (extra data zeroes or similar). Kernel size usually is 3x3 and it can be 2×2 or other. In our model 3x3 filter size is used. And there is also parameter speed (also called strides). It means how fast the filter is moving around data. If strides are 2 then data on the next layer is double less, if 3 then triple less. In our model 1 or 2 strides are used. Using parameter stride we make a layer smaller. Flatten layer is used to remove complexity and we get only result in data after flattening layers. There can be more than one flattened layer (Burkov, 2019; Webster, 2022; Foster, 2019).

A recurrent neuron network can remember previous data. Information about previous steps is used to generate the next steps (Coşkun et al., 2017). Long short-term memory (LSTM) is usually used in recurrent networks to remember previous data. It is also needed to avoid losing the gradient (Coşkun et al., 2017; Balouji et al., 2018).

YOLO (You only look once) model is used to create a new deep – learning network to detect and count physical activity. Our YOLO model consists of 8 convolution layers and the filter size is 3×3 and the strides value is 2, as well batch normalization and flatten layer, and dropout coefficient of 0.2 (Laizāns, 2021). The YOLO model is a deep convolution neuron network. YOLO deep learning model is usually used to detect objects in images fast. YOLO network consists of 63 convolutional layers and uses 3×3 and 1×1 filter size (Redmon & Farhadi, 2018). In our research we are using a deep convolution neuron network that is based on the YOLO model. After training model was able to detect and count

physical activities. Three different models based on the YOLO approach were created for squats walking and jumping rope.

Model is trained when positive values are given to train it. It is being done many times (epochs) so model becomes trained. We use deep neuron network to train model. Model's training result is checked, when test is made on validation data. When model is successful it is tested in life.

To make an application that can detect activities deep learning method is the most appropriate method. The deep learning model is made based on YOLO because it can detect gyroscope and accelerometer data which is changing over time. To train the model data is given to the model then the model is tested. After algorithm detect activity successfully (approximately 90%) testing result model is put on the mobile phone within the application. The application then can be used to detect and count activity and give adolescents feedback about how much activity is done. If observed results didn't meet selected parameters, algorithm training cycle performed again.

During physical activity intervence with adolescent's research team needs instruments that meet the following requirements, first allows to control over how exercises are done by participants, second team members have possibility to change exercises during the intervences time, third access recorded data from their own data storage that is independent of any commercial vendors. The main difference from other projects is that our model can count activity and show result on how much of this activity is being done. Therefor more relevant feedback could be given when specific activities are being done.

Methodology

Development of the application

To develop an application for promoting the physical activity of adolescents first we need to collect data, then data need to be used to create a deep learning model and then create an application using a trained model. There are two parts to application creation. One application is needed to collect data, the second application is necessary to use the trained model in practice. HARCollect application is used to collect data. HARCollect application is used to get data and label them. It shows arrows and timeline, where user can label data on video recording. When labeling is done, data is saved on Firebase server. Two mobile phones are needed to collect and then label collected data. Data collection with one phone is not possible. 2 phones simultaneously are needed. HARCollect (see Figure 1) application is used in the following steps.

1. Installing of application.
2. Registration of users.

3. Connecting 2 phones.
4. Collecting of data.
5. Labeling of data.
6. Uploading of data.
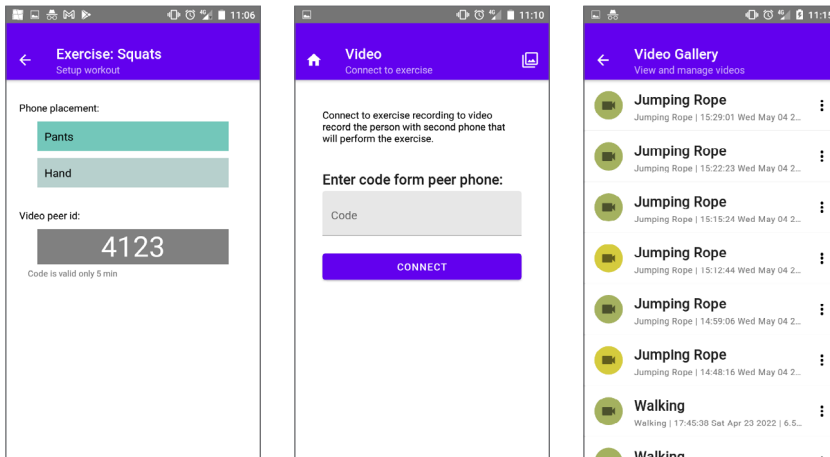7. Training of data in Colab with Tensorflow etc.

Figure 1. HARCollect application in use, left exercise and phone placement, middle code synchronization dialog and right video list screen

The second application is Time to move (Laiks kustēties). It was used to test squat detection in a controlled environment. The application showed a count of squats activity e. g. 1, 2, 3. for squat activity. If further developed It could be used to give users feedback about specific activity for a user. Application is made to detect and count activity. It is integrated with Google fitness and Firebase server. The application in the time of writing is in debugging prototype stage.

Google Colab and Firebase usage

Google Firebase is used to get data from users, register users as well as to host application. Accelerometer and gyroscope data are collected in Firebase as well as labels when squats are started and ended. Users can send data remotely to server. They can choose what data are sent. Google Colab is needed to create csv data files from accelerometer and gyroscope data for model training. Then deep learning model is created in Colab. Colab can read data from Firebase.

Process steps:
1. Data collection in the application HARCollect, user registration.
2. Data uploading in Firebase.

3. Data labeling in Colab.
4. Data csv file creation in Colab.
5. Csv files reading in Colab.
6. Model creation.
7. Model parameter testing.
8. Model export.
9. Model usage in life by application Time to move.

Data quality needs to be checked before data are used in model creation.

Used data and data collection

Data for application training was collected from 8 adolescents 10–14 years old and 12 adults 23–50 years old. The application's main purpose is to use it with adolescents during physical intervention. Therefor used model and algorithms must be adapted for daily use by adolescents and during application testing they provide feedback about usability of the developed application. Following physical exercises were used for application squats, jumping rope and walking. For algorithm training at least half an hour of squats data was created and 15 minutes of jumping rope and walking data were used.

Data collection takes place when 2 phones are connected, then data need to be labeled and send to the Firebase server. The application is paired with Firebase server and automatically gets data that is sent. Every user is registered, so it is possible to omit data which are not usable. For data collection Android phones are used. During data labeling both phones are synchronized, otherwise, data labeling cannot happen.

Data labeling is happening by manually using time frames with positive data e. g. when there is squat action it is positive value and is labeled. When person stands or doing something else it is negative value and is not labeled. Then labeled data is used to train model.

Created models

Different models were created but did not give results good enough. Convolution networks are the most popular method for a given problem and were used to create models. The technologies used to create neuron networks are Google Tensorflow, Keras, and Colab.

The first created model was a neuron network with 3 convolution layers. Data were collected at the speed of 20 points per second in 6 axis gyroscope and accelerometer. 2.5 seconds long windows were used for data analysis. The input data layer size was 50x6. The model consisted of 3 convolution layers and the max pooling parameter between convolution layers was used. At the end of the layers were ReLU activation, softmax activation, and 2 fully dense layers were used. 75% of the data was used

for training and 25% data for validation when the model was trained. When the model was trained after 30 epochs it could not learn more. This model was not able to count activities. To detect and count activities simultaneously different network was needed.

Convolution layers were used to try to detect and count activities simultaneously. Idea was that different length windows could be used. The time for every activity (squats) was detected to be 4 seconds long, but working with different data sizes was not possible. This kind of network was not created at all, because of different data and TensorFlow abilities.

The next model was repetition counting the 3K network. All data was fixed in 4 second long fragments. If needed padding of zeroes is used. The network contained 2 convolution layers, a dropout layer with a coefficient of 0.2. In application this kind of network was with very low precision and was not used. After these tests with negative results, the YOLO approach was used to create the next models as shown in sections trained models and results.

For walking and jumping rope activities different models were created before good results were got. The main problems were data fragment length and data labeling. When labeling was not precise enough, models showed low accuracy.

Trained models

Our deep learning model is created using the YOLO model, then it is adjusted to create a new model for physical activity detection and counting. It is important that this adjusted model can count and detect activities simultaneously (see Figure 2).
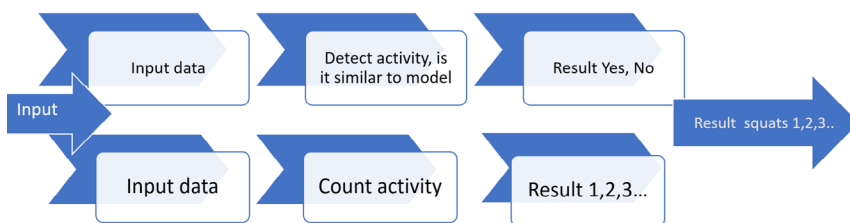

Figure 2. Adjusted model's data flow

A new model is created based on squat data for squat detection. Participants make labels when the squat is started and ended. Input data is gathered from the HARCollect application (see Figure 1). When the model is trained the model can give results to the Time to move application. It is very important to do this labeling right. The best results will be when the activity is supervised because labeling is not an easy task. Data is labeled

and then sent to train the model. To get the model maximum precision, model parameters are changed with Adam optimizer for deep learning model optimization. Adam is a built – in optimizer in Keras for easier use for developers. In Figure 3 you can see a squat data from the gyroscope and accelerometer. The arrow shows the squat middle point. That is where squat is happening in 4 seconds long windows. Also, 8 second long window was tested, but it gave a less accurate result. Computational model optimal results were observed in 4 seconds long data window for squat and walking and 1 second for jumping rope.
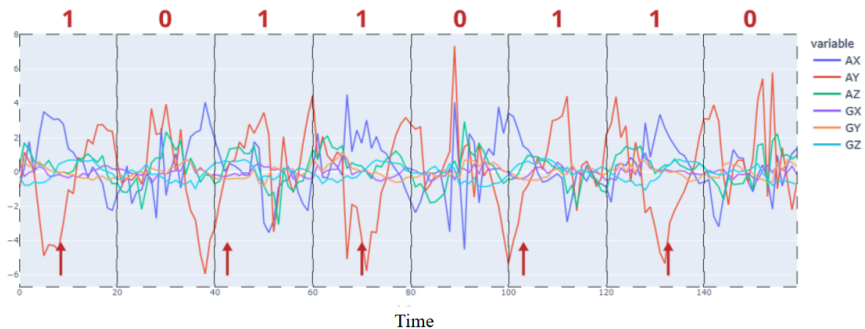

Figure 3. Labeled mobile phone accelerometers in 3-d coordinate (AX, AY, AZ) and gyroscope (GX, GY, GZ) sensors data

Data analysis is started with input data. Data is divided into 4 second fragments. Before that, there are labels on squats. After that 4 second fragments are labeled with 1 or 0. 1 means there is a squat middle point, zero means there is no squat middle point. To adjust the model there is needed hyperparameter optimization. For squat detection 4 seconds best fit for squat activity because it is the approximate length of squat activity as well when the model is learned it shows the best result.

Table 1. Different tested parameters when model is evaluated

Parameters	Tested values and parameters	Value and parameter information
Convolution filter 1	16, 32, 48, 64, 72	Convolution blocks are in pairs
Convolution filter 2	16, 32, 48, 64, 72	Convolution blocks are in pairs
Convolution pairs	1, 2, 3, 4, 5, 6	How many pairs are optimal
Fully connected layer	No, 10, 25, 50, 100	Tested if fully connected layer more than two is needed
Dropout layer	0.2, 0.3, 0.4	Tested optimal dropout percentage
ReLU	0, 0.05, 0.1, 0.15	Leaky ReLu coefficient. 0 means no Leaky.

To do that TensorFlow plugin HParams is used. Optimization is made by Adam optimizer. In Table 1 there are different parameters, which were tested in different combinations.

To do parameter checking faster some parameters were taken as good as possible and then tested another parameter. After checking extra dense layer is not needed. If one parameter showed the best results, then it was used to check the next parameters, to find the optimal combination at the end, see Table 1. Figure 5 shows parameters that were tested additionally. Figure 4 shows parameters from table 1.
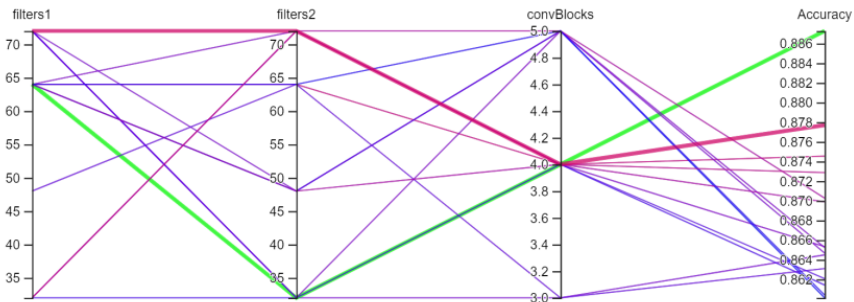

Figure 4. Different convolutions blocks and filters parameters changes and observed accuracy when tested

The best loss function was a mean square error. Convolution layer window size is fixed – 3. Training data versus trained data is 75/25%. If the parameter was found as good enough, then it was used in the next training as optimal. To train the network 60 epochs are enough for model training. The network changes every time when it is tested, even if data don't change. There is also no necessity for an extra dense flattened layer. When tested 64 filter1 counts gave the best results, 72 filters2 gave the best results, 5 convolution blocks gave the best result and the resulting accuracy was 90%. When a model is trained by different parameters it creates result weights, which are needed to detect and count activity (see Figure 2, Table 1, Figure 4).

Results

For the walking activity, best created model got 92% precision when trained 100 epochs.

The deep learning model consists of 2 convolution blocks divided into 1 pair. The first convolution block has 64 filters and strides size 1, and the second block has 72 filters and strides size 2. All convolution filter (kernel) size is 3. In every pair second layer adds extra zero padding. After

convolution, there is a batch normalization layer. In activation layer is used Leaky ReLU function and the dropout layer with a coefficient of 0.2. In Figure 5 you can see how the model is trained.
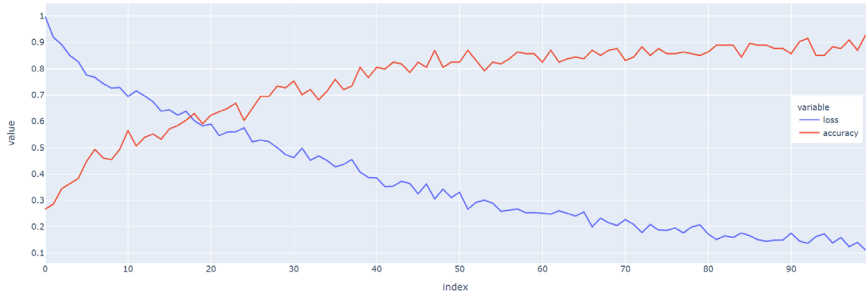

Figure 5. Deep learning model training for walking activity with function loss and observed accuracy

For the jumping rope activity, best created model got 93% precision when trained 100 epochs. The deep learning model consists of 10 convolution blocks divided into 5 pairs. The first convolution block has 64 filters and stride size 1, the second block has 72 filters and stride size 2. All convolution filter (kernel) size is 3. Padding for both pairs is the same. After convolution there is a batch normalization layer. In activation layer is used Leaky ReLU function and the dropout layer with a coefficient 0.2. In Figure 6 you can see how the model is trained.
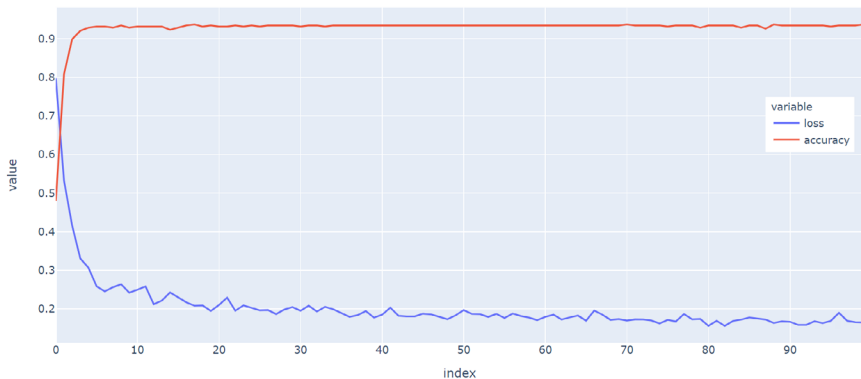

Figure 6. Deep learning model training for jumping rope with function loss and observed accuracy

The deep learning model for squats detection consists of 8 convolution blocks divided into 4 pairs. The first convolution block has 64 filters and stride size 1, the second block has 32 filters and stride size 2. All convolution

filter (kernel) size is 3. In every pair second layer adds extra zero padding. After convolution there is a batch normalization layer. In activation layer is used Leaky ReLU function and dropout layer with a coefficient 0.2. In Figure 7 you can see the model structure.
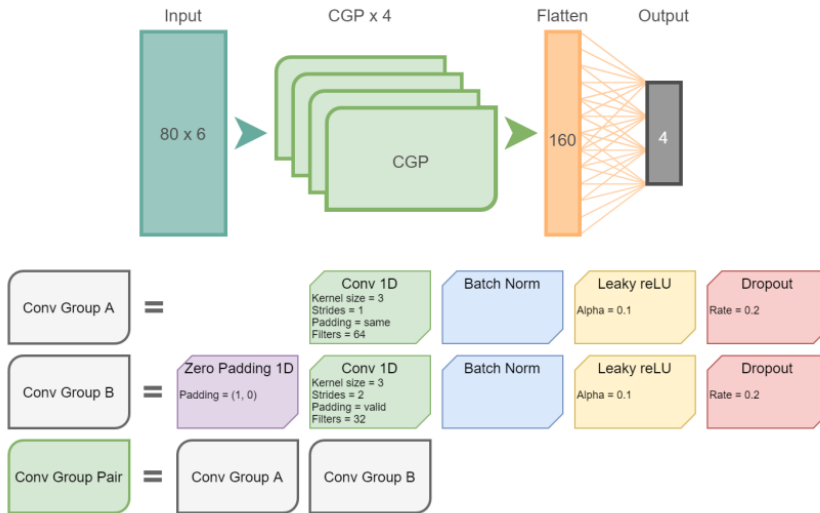

Figure 7. Created model structure for squats detection with used parameters

Trained deep learning model accuracy for squats detection counting is 90%.

The following results were got using squats model: true positive: 98 (76.6%), true negative: 21 (7.4%), false negative: 30 (23.4%), true negative 263 (92.6%)

Trained deep learning model accuracy for squats detection is 94%.

Application when tested in life could count 6 of 10 squats precisely. Two persons were tested. Every person made 10 squat series 10 times. An error was not larger than two in 10 squats.

Created applications when upgraded can be used for adolescents as well as for other interested groups.

The TensorFlow lite model was tested on Qualcomm Snapdragon 845 processor (2017 model) Android 10 operating system. The, model is 213 KB large and 6.8 ms fast.

The model is very dependent on the user and any other factors e. g. right or left pocket.

HAR Collect application is created and the Laiks kustēties (Time to move) application has been tested and is in the development stage.

During creating applications there are the following problems, which must be solved:
1. Long model data training period.
2. Many dependencies when creating an application.
3. Long data collection period.
4. Developers need to know different programming languages and tools: Tensorflow, Keras, Python, Javascript etc.
5. Developers need to know how to use deep learning methods to create a new model.

Discussion

There were a couple of models tested before we got the best results. The main problem with why models did not work was data quality and data labeling quality. At the start of the model creation, there was a challenging phase when there was no working model. After the first model is created later next model creation is easier.

We created 3 models: squat activity – 90%, jumping rope 93%, and walking activity with 92% accuracy.

Charissa Ann Ronao used a convolution network to count activities from mobile phone data. Activities were running, walking up and down the stairs, sitting and sleeping. They got 95% performance accuracy (Ronao & Cho, 2016). Our result was little less than their.

Francisco Javier Ordóñez used Deep convolutional LSTM neuron networks, but the sensors used were through the body. With Deep convolutional LSTM they got 91%, but with baseline CNN 88% (Ordóñez & Roggen, 2016). Our deep convolutional models showed same accuracy rate than their network, and seems this method is better than their baseline model. We got similar results with different convolution layer parameters.

Andrea Soro used one neuron network to detect and different network to count activities. Smart watches on the hand and knee were used. Detection precision was 99% and counting precision was 91% (Soro et al., 2019). Better result of their study could be achieved because of hand watch usage. In our case our results is from phone in a pocket. Sensors movement amplitude is higher in case of hand watch and then better results could be got. Both methods can precisely detect given activity.

Ghanashyama Prabhu used data from the bracelet. In this approach, 10 different activities were tested. Classification precision was 94%, and counting precision was 90%. Two convolution neuron networks were used to gain results (Prabhu et al., 2021). Their result was gained with advanced set of sensors. They used specific local muscular endurance exercises for rehabilitation purpose. They used supervised machine learning models

and deep neuron networks. They found that deep neuron network showed better result than supervised machine learning models. Our result was similar to them, but they used specific devices with extended accelerometer, magnetometer and gyroscope sensor set.

All models compared above and our models have different algorithmical and technical setup but results are more or less similar and got at least 90% precision.

Conclusions

Different methods for physical activity detection are actively worked out in both commercial for using with different trackers applications and academical for new device and applications prototypes. Very promising is physical activity detection and detection of activity peculiarities by deep learning methods. These methods allow to detect small differences between physical exercises for example squats amplitude and count correctly performed activities via deep learning model.

Created application for adolescents could help promote physical activity. Application prototype is used to detect squats, but it needs further development on different activities and testing of adolescents. Our results could be used to further develop application that could give feedback on specific activities to people who is using it in that way promoting activity.

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QUALITY AS A TOOL FOR MANAGING EDUCATION

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ABSTRACT

Quality is linked to the need by management to optimise the conflicting requirements of minimum time and resources and maximum quality. This study analyses the relationship between four main quality definition groups and a behavioural model and education management tasks. Cognitive neurobiology capabilities and the use of the archetype of quaternality are shown. Given the unity of education as knowledge, skills, and attitudes, the importance of art and philosophy is assessed and the need to include attitudes, values, and morality as an essential part of quality culture is demonstrated. Successful quality culture development can be achieved through a harmonised use of all quality definition groups and by respecting values. The need to focus on the future is studied in relation to the challenges of digitalisation and globalisation. There are opportunities to modify the quality standards system based on the integration of context, input, processes, results, and feedback into the quality management system. This investigation aims to start the revision of quality definitions and concepts and show ways for the future development of an educational system and its quality evaluation. The study question is: what are the necessary improvements to the concept of quality for its successful use in management?

Keywords: *higher education, pedagogy, philosophy, quality assurance, society*

Introduction

The key solution to several emerging challenges in society lies in the provision of quality higher education. This is because the driving force for change in society is now concentrated in universities. A recent review of the problems of society has been done (Bičevskis, 2021; Līsmans, 2022; Podnieks, 2021; Saskinds, 2021). A workless world (Saskinds, 2021) reveals changes in social structure.

A society without the world, described in an extensive review with several references (Bičevskis, 2021), shows the victory of 'society' (technologies) over the 'world' (nature). Biophilosophy (Bičevskis, 2021) marks the way to the artificial, technical world but also points to the

possibilities for the transformation of society to a human-friendly direction using education.

The description of education as a provocation (Līsmans, 2022) shows the need to change the fundamentals of education, including the abandonment of 'competence education'. It is necessary to review the education system, starting with its goals and its evaluation system – including the concept, definition and use of quality. The key objectives of education should be changed and the quality culture should be reviewed. Changes in ideologies (Bičevskis, 2021) and the increased use of artificial intelligence (AI) require serious reforms to avoid crises and revolutions (European Commission, 2020; Saskinds, 2021). Reforms in society should start with the transformation of education.

The development of science until now has been characterized by a gradual process of changes of principles, models, and paradigms (Andersen et al., 2006; Prigogine & Stengers, 1997; Siliņš, 1999; Popper, 1971). This process is finished (Bičevskis, 2021; Līsmans, 2022; Saskinds, 2021). The coming workless society and the fundamental change of the social structure, including education and ideology, are linked to singularity in the development of AI (Barrat, 2013; Bostrom, 2014). The friendliness of AI to human society, based on appropriate scientific developments, should solve the main problems of the future for society, but the creation of such an AI is a highly dangerous and complicated task for science.

The combination of physics and psychology can expand the limits of human possibilities and allow mankind to overcome crises in science and solve social problems. A comprehensive crisis in science is related to difficulties in absorbing previously accumulated knowledge (Wigner, 1970). Physics and psychology together with philosophy allow us to understand such fundamental concepts as time and will as the result of *spontaneous loss of symmetry* (SLS) (Smolin, 2013) and to meet the challenges. The revision of education and of the theory of cognition (Kants, 1988) is possible using modelling (Podnieks, 2021; Dzelme, 2020). Modelling allows us to understand consciousness by the complex use of psychology, including cognitive neurobiology (an understanding of the will and the sense of life), physics (an understanding of time and of the structure of the world) and other related sciences.

An assessment of the various systems of views needed for society and its education system are summarised in a review about the task of how to be conservative (Rusanovs & Skutele, 2021; Skrūtons, 2021). Moreover, solutions for development are proposed for higher education (Dzelme, 2007).

The education system is responsible for the maintenance and use of existing knowledge, skills and attitudes and for their development. Motivation of people and creation of relevant attitudes has become increasingly

important for sustainable development (Dzelme, 2018b; Kantane et al., 2015; Tisenkopfs, 2010). The use of art and philosophy is the leading means of solving the challenges of inclusion and motivation.

The main problems of education, including its aims and the assessment of its quality, are linked with human needs, behaviour and the structure of the psyche. The fundamental human need for social contact was developed during the creation of humanity, but digitalisation has increased the role of virtual contact and forced a significant change in the psychosocial mechanisms built into traditions and intergenerational experiences. Changes create tension, especially for youth. According to the World Health Organization, 20% of young people face mental health problems (Multinclude, 2021).

All human needs (Maslow, 1986) should be met, with a focus on the highest, namely ideological and creative, levels (belonging, recognition, self-fulfilment and transcendence) since ensuring the lowest levels (physiological needs and security) is relatively easy. The education system must provide an understanding of beliefs, rules of behaviour, morality and the sense of life. Humanities together with cognitive neurobiology (Graziano, 2019) and social and natural sciences should provide methodologies for education to ensure morality and to exclude deviant behaviour (Bičevskis, 2021; Vilks, 2001).

Value education and art create social stability (Klein et al., 2021; Līsmans, 2022). The right balance between chaos and order (Prigogine & Stengers, 1997) must be supported by ideology, using myths (Dzelme, 2018b; Veinbergs, 1988) and scientific ethics. Appropriate education and ideology, created by philosophy and supported by art, must stop the destructive atomization of society (Bičevskis, 2021; Tumans, 2014).

The present gives us the last chance to start the implementation of the transformation of education. It is necessary to revise all education and research systems so as to analyse major principles and concepts, such as quality, and to establish a new, comprehensive approach to education which must include the use of humanities, natural and social sciences and art and philosophy.

The aim of this investigation is to start a revision of the main concepts of education and to show ways for the future development of the system of education and its quality evaluation. The question of this study is whether it is possible to transform the current concept of the quality of education in line with the needs of future education management.

Methodology

The challenge to methodology is how to make it possible to transform the current concept of quality of education in line with the needs of future

education management. Methodology should indicate the path by which it is possible to review educational objectives and the possibilities for achieving them, as defined by the concept of quality. High quality is often referred to as the objective of education, but the concept of quality itself remains ambiguous. Similarly, there are still many questions about the relationship between quality and decision-making. Traditional approaches will no longer fit in the future (Līsmans, 2022), so all the basics about the concept of quality and its use and the whole picture need to be reviewed to find the right solution in new circumstances. The use of modelling and philosophical generalisation methodology enables a review of the concept of quality, starting with the goal of assessing quality of cognition and its results.

The main method used is a comparison and syntheses of different approaches. The sample for investigation and analysation is various literature sources from the humanities as well as social and natural sciences (Dzelme, 2020; Haken, 1988; Podnieks, 2009; Prigogine & Stengers, 1997), with attention paid to artificial intelligence (AI).

Interrelations between different models from psychology (Graziano, 2019; Jungs, 2009) and other sciences are used to show the common features of education processes and other human activities. Modelling and a comparison of methods, including a strengths, weaknesses, opportunities, and threats (SWOT) analysis, are used to understand and implement the concept of quality and to make recommendations for the improvement of quality assurance of higher education.

The methods of philosophy, including biophilosophy (Bičevskis, 2021), allow for a gathering of the achievements of various sciences and their successful application for the performance of tasks of educational development and evaluation (Līsmans, 2022; Saskinds, 2021). Modelling serves as the main methodological principle and as a foundation for an understanding of key concepts, starting from the basis of life and cognition.

It is possible to link the concept of quality as a tool for evaluation and management with modelling, including the basic complementary models of the world. The proposed methodological approach allows us to create an integral, holistic view of society and education and to answer to the research question of this investigation.

The design of the methodology to be used is based on an application of questions, an assessment of information and an evaluation and use of the results obtained under varying circumstances. The conceptions developed by analytical psychology (Jungs, 2009) regarding the structure of the psyche – mainly the quaternity archetype – as well as the connection of these conceptions with education and cognition are used to clarify and link the concept of quality with cognition and education. Four methodological principles of design are used to study quality, education and cognition:

1) the combined principle of existence, 2) the principle of minimalism, 3) the principle of complementarity, and 4) the principle of historicity (Dzelme, 2018a).

This investigation proposes an approach to the integral, holistic model of the system of education and the concept of quality that is valid for future challenges. Our approach shows how to combine all the main parts for an evaluation of changes in education. A comparison of different models is used as the main method for investigation. The proposed modelling of the world tends to include the whole ecosystem – nature together with society and its education system (Dzelme, 2020). The principles of existence, minimalism, complementarity and, mainly, historicity (Dzelme, 2018a) allow us to create a design of methodology and to answer the research question about the new concept of quality as a tool for the management of future education.

Results

Historicity

In response to the study question and using the principle of historicity, it is necessary to review the historical development of cognition possibilities and quality as a means of evaluating cognitive results using the results of studies of consciousness as a cognitive instrument. According to the principle of historicity, a return from society to the world (Bičevskis, 2021) must start with an understanding of time, space and life. The next step is the use of modelling as a basis for understanding life (Godfrey-Smith, 2021), consciousness (Graziano, 2019; Kandel, 2009) and cognition (Kants, 1988; Podnieks, 2021).

Causality, symmetry and the existence of quantum are foundations of the world model (Smolin, 2013). Time, events, existence and the structure of space are based on SLS (Smolin, 2013). SLS created an initial deviation from the equilibrium – the Big Bang. Then quantum interactions created space and different quasi-static combinations of interacting quanta, which together form stars, planets and life. Life is the ability of randomly formed quasi-static structures to copy their structure within certain limits. The development (evolution) of life is based on the ability to create and use action models to increase the probability of surviving and spreading (breeding). Then life created the ability to build, store and use action models both in the psyche and outside the psyche as culture.

The existence of the psyche and consciousness requires the creation of a sense of life as has been pointed out in an extensive review about society without the world (Bičevskis, 2021), where the main methodological problems of cognition are described. The review justifies linking ideology,

morality and education to basic principles of physics and psychology as has been predicted by mathematics (Penrose, 1994; Podnieks, 2021; Wigner, 1970).

The natural environment with its biological feedback system will be replaced by a technologically created environment in which balance must be maintained mainly by AI. All human activities and professions will reduce to the performance of mutual services (Bičevskis, 2021). Education and art must build a new worldview and create an understanding of the goals and meaning of life in this new society without the world (Bičevskis, 2021). The basic principles for the evaluation of education and ideology are investigated using the methodology proposed by philosophy (Rusanovs & Skutele, 2021; Skrūtons, 2022).

Quality, Quaternicity, Needs, and Purposes

According to the definition used in the European standards and guidelines (ESG), quality is fitness for purpose (European Association for Quality Assurance in Higher Education [ENQA] et al., 2015). The four main purposes of higher education mentioned in ESG are preparing students for active citizenship, for their future careers (their employability), to support their personal development, to create a knowledge base and to stimulate research and innovation. It is necessary to involve other definitions of quality and to link all alternative definitions with purposes, the needs of society and the main social and psychological issues. This approach can give an understanding of all new problems and challenges emerging with digitalisation and transfer to a workless world (Saskinds, 2021).

Preparing students for active citizenship and supporting their personal development are the most unclear and complicated purposes of higher education, and they are linked to attitudes, including responsibility and autonomy. Learning should combine knowledge, skills and attitudes, which are defined as the content of education (Latvian parliament, 1998). Attitudes and morality must create stability of society for sustainable development. Previous generations are no longer able to create a stable enough basis for the moral education of the young generation because the life experiences of the two generations differ greatly. Previous generations do not have enough high authority. The society, the state and the education system must participate actively to solve the problem of attitude. An evaluation of quality and learning outcomes must be linked with all the purposes necessary for sustainable development.

Several official steps have been taken in Latvia, starting from changes in the constitution and including changes to laws and governmental regulations, to create support for attitudes and morality. An understanding of the different concepts used in education is still unclear.

SWOT Analysis

An effective model for the analysis of the main results and learning outcomes of an education system is based on the theory of emotions (Dzelme, 2018b) and is linked with quality assurance (Van Damme, 2004), SWOT analysis, issues of sustainable development (Dzelme, 2007) and democracy and social ecosystems (see Table 1). Four groups of the quality definitions (ENQA et al., 2015; Van Damme, 2004) are shown in Table 1. Table 1 and all other tables in this article were created by author.

Table 1. Quality Definitions

Approach Environment	Subjective	Objective
Inner	Fitness for purpose	Standards; zero mistakes; benchmarking
Outer	Clients (students, employers, society, authorities, professional organizations, and trade unions)	Achievements; ratings; assessments (academic, professional and artistic)

Psychology and Purposes of Higher Education

The four main parts of the personality and the quaternicity archetype used in analytical psychology (Crick, 1995; Graziano, 2019; Jungs, 2009; Kandel, 2009) could be linked with the four different relations with the inner and outer environment and subjective and objective approach to interactions represented in the psyche. The model of the quality criteria is shown (see Table 2) together with the purposes of higher education (ENQA et al., 2015).

Table 2. Purposes, Quaternicity Archetype and Quality Definitions

Approach Environment	Subjective	Objective
Inner	Supporting students' personal development *(morality)* Present (feelings) Fitness for purpose	Preparing students for future careers and the labour market *(employability)* Logic (mind, conscience) Standards
Outer	Preparing students for active citizenship *(Democracy)* Future (intuition) Clients	Creating a broad advanced knowledge base and stimulating research and innovation *(Science)* Emotion (attitudes, values) Achievements

Human Needs

All purposes are linked with universal human needs (Maslow, 1986) and purposes of education (see Table 3). Quality assurance is also linked with a SWOT analysis.

Table 3. Human Needs, SWOT, Purposes, Quaternicity Archetype and Quality Definitions

Approach	Subjective	Objective
Environment		
Inner	Belonging Strength (development reserves and possibilities) *(Morality)* Present (feelings) Fitness for purpose	Safety and physiological needs Weaknesses (obstacles for development and punishment for mistakes) *(Employability)* Logic (mind and conscience) Standards
Outer	Transcendence and self-fulfilment Opportunities (possibilities to realize development) *(Democracy)* Future (intuition) Clients	Recognition Threats (punishment for low ratings and low achievements) *(Science)* Emotion (attitudes and values) Achievements

Psyche

The foundation of the psyche is a set of hierarchically related, overlapping, interacting action models working in parallel (Jungs, 2009). Each pattern of action and the psyche can be described in general using a breakdown into four parts (Jungs, 2009): feelings, intuition, the mind and attitudes. The model of the psyche, represented schematically in Table 4, can be used to slightly reshape and link to the modelling approach:

1) present: an external perception-based image (pattern) that combines the feelings and signals collected from the external and internal environment in the image of an associated present pattern (using interpolation, symmetry (invariants in space and time) and association);

2) future: an image (a model of the future) created by internal associations designed by extrapolating the fragments of past images to the possible future using associations and looking for potential future models associated with images (invariants, 'symbols') that have been activated internally (through emotions and related needs);

3) logic: an internally guided series of operations, actions ('marked' with symbols) capable of joining and combining the images of the present and the future to connect the state of the present (mainly external) to the needs (mainly internal) of the future;

Table 4. Morality, Emotions, Needs, SWOT, Purposes, Quaternicity Archetype and Quality Definitions

Approach/ Resources Environment/ Process	Subjective/ Information	Objective/Energy (material resources)
Inner/Storage	Justice and honesty *Adoration – Dignity* Tolerance and compassion *Despisal – Shame* Moderation *Envy – Remorse* Belonging Strength *(Morality)* Present Fitness for purpose	Solidarity, kindness and composure *Liking – Complacency* *Mercifulness – Disappointment* Safety and physiological needs Weaknesses *(Employability)* Logic Standards
Outer/Acquisition	Courage and wisdom *Interest – Self-acknowledgement* *Boredom – Loneliness* Transcendence and self-fulfilment Opportunities *(Democracy)* Future Clients	Responsibility and dedication *Respect – Pride* *Indignation – Guilt* Recognition Threats *(Science)* Emotion Achievements

4) emotion: an assessment of the internal needs associated with models and images, an assessment of the significance and of the resources (energy) likely to be assigned to activities by tying to images and activities three main types of choices: desirability (pleasure) or avoidance (distress) linked with a situation (positive or negative sign of emotion); satisfaction (achievement) or continuation (persistence and stabilization) linked with action (will); activation (stress) or suspension (depression) linked with the choice of use of internal energy resources (mood) (Dzelme, 2018b).

All components are linked and overlapped and consist of several sequential and parallel strings of possible images (static and patterns to be associated with scenes) and actions (dynamic models to be associated with symbols). Most actions of the psyche take place in the subconscious without being connected simultaneously with the attention mechanism and the 'I' model.

The attention mechanism, which is associated with emotions, links some content with increasing activity (energy) and 'lifts' to consciousness (using the positive return 'resonance'). Content that gains sufficient activity in the psyche and interacts with the 'I' model becomes conscious (Metzinger, 2010). When a person pays attention to the 'I' model, consciousness with

reflection (resonance) becomes self-awareness (Graziano, 2019). Attention and consciousness-related activities (decision) become 'free will' (choice and control). The success of the self-awareness mechanism involves the interaction of all components and integration around a single centre which, according to Crick (1995) and Graziano (2019), is located in the central part of the brain – the *claustrum* – linked to the limbic (emotion) system.

The modelling approach is useful for a study of languages and different texts, including art and philology (Emerson, 1997). Text is a simplified image (a set of symbols in visual, acoustic or other form) of the original model existing in the author's psyche. The model is restored in the receiver's psyche by the means at its disposal. An understanding of texts is the basis of education and depends on the shared environment of the author and receiver, the similarity of their models and symbols (a similarity and compatibility of knowledge, skills and the attitudes of the author and receiver).

A combination of isolated action models during the process of building integral, complex models takes place in two ways: 1) linkage of individual actions in strings (chains), taking into account: (a) the possibility of connections (a continuation of the next step after the previous one, according to logic 'common sense'); (b) the desirability of transition to better options (alternatives); 2) creation of hierarchical structures and multi-level clusters of symbols combining actions, sets and strings. Signs (symbols) combine into high level structures and 'words' (with their semantics), and words combine into 'stories' (using some rules and grammar of the appropriate language). The possibilities of the creation of action models are regulated by the semantics and grammar of a respective language. This approach of action modelling is valid for all kinds of languages (not only 'natural' languages), including mathematics, language of art, et cetera and could solve many problems existing in philosophy (Bičevskis, 2021), education (Līsmans, 2022), philology (Emerson, 1997), et cetera. The development of language and art is parallel and should be studied as a single, joint process linked with the evolution of the psyche. The use of language and art in education should be investigated as one complex process for the transformation of education. The role of art in education increases in significance if attitudes must be included in new ways and combined with new tasks for evaluation and decision making.

The action of psyche occurs through two ways:

1. Pattern creation (and storage for future use) from past experience happens by finding and storing invariants (i.e. truth) and using symmetry (i.e. repetition in space and/or time).
2. Activation of invariants and patterns linked with actual needs (using emotions linked with these needs).

Invariants, truths and patterns of actions from the past are 'simplified' and separated from the old 'unique' details of the past. New details come from the actual present and differ from the past.

For actual behaviour, old details should be forgotten and old invariants should be remembered in the right balance. A new chain of old operations and new action models with new details must connect the present (situation with its current assessment) and the desired, possible future (with its positive emotions).

The project of an action model linked with intense positive emotions and minimum negative emotions is reinforced to the level of execution using positive feedback (resonance). Projects linked with the most intense emotions associate with the 'I' model and thus come to mind through self-awareness and can be transformed and/or stopped with the help of 'free will' approximately 50 ms after appearing in the subconscious (Kandel, 2009). The awareness process could be created by joining the central part of the brain – *the claustrum* – to all its parts (Crick, 1995; Graziano, 2019).

Emotions and Morality

An analysis should include the 12 kinds of morality principles mentioned in official regulations (responsibility, dedication, courage, honesty, wisdom, kindness, compassion, moderation, composure, solidarity, justice and tolerance) (Dzelme, 2018b). A model with its respective morality and emotions (*in italics*) is represented in Table 4. Each principle of morality is linked with positive and negative emotions. The most important links are shown (see Table 4), where, after moral principles, in the next line are indicated (in italics) the main emotions linked with these principles – direct emotions which are used by a subject to evaluate the object of assessment and the reciprocal emotions – directed from a subject to himself as well as self-assessment from the point of view of a potential observer (object interacting with subject).

European Standards for Quality Assurance

The 10 European standards accepted for internal quality assurance of higher education are described in ESG (ENQA et al., 2015) and could be divided into 4 groups linked with quality purposes, human needs, SWOT analysis, emotions and principles of morality shown in Table 5, where the numbers in brackets indicate the number of the standard in ESG (see Table 5).

Table 5. ESG, Morality, Needs, SWOT, Purposes, Quaternicity Archetype and Quality Definitions

Approach/ Resources Environment/ Process	Subjective/Information	Objective/Energy (material resources)
Inner/Storage	Aims (1.1) and content (1.2) • Justice and honesty Tolerance and compassion Moderation • Belonging • Strength *Morality* Present (feelings) • Fitness for purpose	Means and participants (1.3, 1.4 and 1.5) and resources (1.6 and 1.7) Solidarity, kindness and composure • Safety and physiological needs • Weaknesses *Employability* • Logic (mind and conscience) • Standards
Outer/Acquisition	• Creativity (1.8) • Courage and wisdom • Transcendence and self-fulfilment • Opportunities *Democracy* • Future (intuition) • Clients	• Management (1.9, 1.10) • Responsibility and dedication • Recognition • Threats *Science* • Emotion (attitudes and values) • Achievements

Discussion

Modelling

The proposed models are one possible approach to an integrated, holistic investigation of the quality and aims of education. Complementary models should establish other angles and borders of education (Dzelme, 2020). Non-local interactions (quantum entanglement) do not change the main principle of limited knowledge because the possible quantum effects (Hameroff & Penrose, 2014) are also based on limited physical interactions of neurons.

Any hypothesis is based on a limited model and is useful within certain limits. Falsification and verification help to establish right limits for models, but to claim that any model has limited possibilities for use with scientific information as proposed by Popper (1971), is incorrect.

The aim of education could be described as creation of motivation and possibility and capacity to find, store and use models (Podnieks, 2021). Models could be divided into static and dynamic, symbolic and iconic, simple and complex categories, et cetera; but in a psyche, a joint network of interactions between neurons really exists. Division is possible for the purposes of investigation.

The Role of Art

A creation of models happens in different ways, but mainly by using special experimental toy models for education in the framework of artistic activities. Art, language and religions developed simultaneously during human evolution. The modelling approach allows us combine problems of education and art so as to understand and use quality concepts in education.

Art helps the psyche to carry out tasks of model building and implementation. The tasks of art are twofold, according to the two types of tasks of a psyche:

a) training – building truths and invariants (knowledge and skills) from training behaviour (specially designed 'experience': games, rituals, songs, dance, prayers, etc.);

b) action – building behaviour, actions from truths and invariants (obtained by learning and training experience) using appropriate emotions (attitudes) for assessments and decision-making (involving 'free will').

Objectively, the psyche, models of action and 'free will' comply with the laws of nature and are knowledgeable, taking into account uncertainty, SLS and non-local interactions. Subjectively, the 'I' model binds only a part of action models to reflections and introspection and 'free will' through consciousness and self-awareness (Graziano, 2019).

The main operations for processing information in a psyche could be divided into three overlapping groups, each related to two types of elements that are linked in a bottom–up, ascending, top–down and cutting manner:

1) interpolation (synthesis and analysis);
2) extrapolation (induction and deduction);
3) search for and use of symmetry (invariants, 'truth', generalisation and specification).

The criteria of an artwork (beauty) is the ability to promote all the three mentioned tasks. The main part of art must be linked with an education system and together with the main part of philosophy must create and support a worldview and morality based on an ideology. Possible deviations must be acceptable for the sustainable development of society. The part linked with education could be called applied art (design) and philosophy and is similar to applied science (engineering and crafts). Fundamental art and philosophy (the other part) aims to find new ways and new forms of ideology that are acceptable for future changes and development of education and ideology. Both parts are important and must be supported just as fundamental and applied science are supported.

It is necessary to compare existing invariants (virtues) with new ones appearing and to gradually change the existing set by replacing it with new findings. Such a comparison and evaluation could be organised through

special traditions (festivities/carnivals). In a successful sustainable society, possibilities should exist for comparisons, competition and changes. There must be ready ways to make replacements without revolutions using modest evolutionary changes. In order to escape revolutions and mitigate the disruptive effects of reforms, changes must be made in a timely manner, step by step, without creating contradictions or great challenges and using appropriate criteria for quality.

Conclusions

The necessary improvements to the concept of quality for its successful use in the management of education should include a complex use of all the main parts of the concept. The archetype of quaternality could serve as a basic model for the revision of the main principles of quality assurance. Quality as fitness for purpose must include the main aims of education, but all other aspects of quality should also be used. Quality management in higher education should use all the achievements of pedagogy, psychology and all other humanities as well as social and natural sciences. The definition and use of the concept of quality of education must be revised and linked with ESG, morality, emotions, human needs, SWOT analysis, purposes of higher education and the quaternicity archetype for psyche. A modelling approach, action models and the quaternicity archetype for psyche should be used.

The safety and stability of society could exist if principal concepts and principles would be investigated deeply enough. We need (a) an under-standing and modelling of the necessary conditions of stability of any kind of intelligence activity (psyche and AI), (b) an evaluation of the safety of any action and (c) an understanding of the nature of a meaningful existence and sense of life. The current system (competence education, Bologna system, etc.) is no longer valid. An appropriate ideology and an understanding and right use of different languages, including mathematics, modelling and art, should be the basis for education. The whole education assessment and planning system, which uses the concept of quality, needs to be reviewed in terms of quality objectives and their relationship to resources (human, knowledge and material resources) and time (plans).

Art and philosophy should be divided into applied and fundamental parts with different tasks for the sustainable development of society. Applied art and philosophy must be used mainly in the framework of the education system and should serve in stabilisation, but fundamental art and philosophy should search for and implement appropriate evolutionary changes of ideology and worldview while avoiding crises and revolutions. Ideology should be based on local history and traditions, including Christian values, but without Christianity.

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