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Impact of Entrepreneurial Learning on Entrepreneurial Self-Efficacy and Intention: Role of a Design-Based Entrepreneurship Education

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Abstract

The cursory views of several practitioners and academicians have suggested that design-based approaches have inherent features that increase their chances of impacting entrepreneurial intention (EI) and entrepreneurial self-efficacy (ESE). However, minimal empirical enquiries exist to affirm this viewpoint. The current study's overarching objective is to assess the influence of entrepreneurial learning (EL) acquired via a design-based entrepreneurial education (EE) on EI and ESE. We conducted a quantitative cross-sectional analysis of 207 participants' responses. Using stepwise multiple regression analysis, we assessed the relationship and impact of EL indicators on EI and ESE. Though both personal and social emergence learning and contextual learning have a significant positive relationship with ESE, the latter was the most important on the individual level. This relationship further affirms that collaborations, interactive learning, and experiences drawn from team projects are the most critical influencers of a student's ESE. The result of the stepwise multiple regression also affirmed that personal and social EL and ESE work better to influence EI. While the current study presently has implications for EE and entrepreneurship promotion, future studies may assess the impact of design-based EE on entrepreneurial actions rather than mere intentions.

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1. Introduction

A plethora of academic and industry research has emphasised the importance of entrepreneurship to economic development (Owusu-Ansah, Poku, 2012). Notably, several developing economies have specified (entrepreneurship) as the engine of growth and are contemplating strategies to promote the sector (Robb et al., 2014). In most of these countries, entrepreneurial education (EE) has been proffered as one of the suitable tools necessary for developing the requisite entrepreneurial competencies needed to increase venture development post-graduation amidst the burgeoning graduate unemployment (Owusu-Mintah, 2014). Extant literature affirms the impact of EE on intentions to start a business in the future (Entrepreneurial intention-EI) (Piperopoulos, Dimov, 2015; Nowiński et al., 2019). However, the fact that remains inconclusive is whether this is true for every type and model of EE.

Maresch et al. (2016) explain that recent EE studies have only shown general trends and failed to consider specific pedagogical approaches' effectiveness. Scholars like Martin et al. (2013) noted the need for scholars to consider assessing the "reciprocal relationship" between the quality of the entrepreneurial learning (EL) experience, EI, and entrepreneurial self-efficacy (ESE; competencies) in different educational settings. The reciprocal relationship between the quality of EL experience and EI in educational settings suggests a direct or circuitous two-way relationship between EL and EI. Also, the antecedent for such a relationship is often dependent on the nature of the educational system. Thus, different EE models may yield varied results. According to Lynch et al. (2019), EE models focusing on experiential learning methodologies have a higher chance of guaranteeing transformational learning, thereby increasing intention and action. Models that focus on experiential learning methodologies have this result because the practicality of the content allows the participants to experience a situation similar to the real world before they experience it and improves their chances of succeeding in similar circumstances (Von Kortzfleisch, 2013).

The current study investigates the above assertion as it assesses the relationship between a design-based EE (via EL), EI and ES. The design-based EE focuses on design thinking (Mueller, Thoring, 2012), the lean startup approach (Harms, 2015; Harms et al., 2015) and Customer Development Model (CDM) as its conceptual foundation to impact entrepreneurial knowledge. Though the cursory views of several practitioners and academicians have suggested that design-based approaches have inherent features in themselves that increase their chances of affecting EI and ES, minimal empirical enquiries exist to affirm this viewpoint. Furthermore, we sought to address the research gaps, emphasising its relevance by handling three distinct calls for further studies: firstly, we addressed Martin et al.'s (2013) call for studies to investigate the "reciprocal relationship" between the quality of EL, EI, and ES (competences) in educational settings (EE). Secondly, our study addressed the call by Rauch and Hulsink (2015) and Maresch et al. (2016), who explain that further studies should focus on assessing the impact of specific models of EE on EI. Last but not least, our paper speaks to Maresch et al.'s (2016) call for scholars to consider assessing the relationship between EE models that are design and lean startup-based and EI.

Hence, the study seeks to answer the research question, "what is the relationship between EL acquired via a design-based EE, EI and ES?" Four distinct hypotheses were drawn from this research question, which are discussed in the subsequent paragraphs. Reviews of the topical subjects (EE, EL, EI and ES) are provided, followed by a discussion of the methodological approach adopted for the study. The study results are presented with relevant discussions and implications for further studies.

Entrepreneurial Education

The subject of entrepreneurship remains a topical issue in recent times, though its earliest mention is believed to have been around the fifteenth century (Schumpeter, 1982). Since Schumpeter, different and prominent scholars have discussed several pertinent issues within the entrepreneurial field of study, including and not limited to EI, EE, orientation, growth, SME promotion etc. In recent times, scholars have emphasised EE as a critical subject in the entrepreneurial field of study because of its potential to impact EI and behaviour (Kuehn, 2008).

While scholars like Maresch et al. (2016) suggest the relationship between EE and intention depends on the type of education, and the context, very little empirical evidence exist to explain

how specific EE styles affect EI and how individual-level factors like ESE impact such a relationship. In the current study, the researchers seek to assess the impact of a simulation-based EE that fosters EL through its practical and "Do-Learn-Do" pedagogical approach on entrepreneurial efficacy and intention. Thus, to assess how a simulation-based EE impacts one's ESE and intentions to undertake an entrepreneurial action.

Entrepreneurial Intention

The subject of EI has increasingly gained immense interest among scholars (Fayolle, Linan, 2014; Maresch et al., 2016). A Plethora of definitions have been postulated for the term and has popularly linked it to psychological theories and concepts like the theory of Planned Behaviour (Yang, 2013). Despite its popularity and progress as a field of study, the subject matter has been circuitously criticised by some scholars as not representing entrepreneurship (Frese, 2009; Engle et al., 2010). For example, Frese (2009) argues that entrepreneurship outcomes result from actions and not mere intentions, hence postulating that entrepreneurial action should be the starting point for theorising in entrepreneurship. In response to these critiques, EI scholars have also explained that intention is the best predictor of planned behaviour (action) (Krueger et al., 2000). In support of the latter, the current study also argues that entrepreneurial actions do not stand in a vacuum and are often the results of a series of cognitive processes (Wood et al., 2012), which includes intention. Similarly, Kautonen et al. (2015) highlight the relationship between EI and Entrepreneurial actions. Hence, the current study argues that the subject of EI is germane to the theorisation of entrepreneurship.

Entrepreneurial Learning

Globally, EL is beginning to attract attention among scholars, practitioners and policymakers (Minniti, Bygrave, 2001). Additionally, the popularity of the subject in recent literature has sparked its importance in EE (Rae, 2004). Learning theories have been at the fulcrum of EL and offer an understanding of the probable role learning as a consequence or antecedent may play in entrepreneurship. According to Kolb (1984), learning is an experiential process through which principles and ideas are derived and modified by experience. From the cognitive perspective, effective EL is defined as a problem-solving process focusing on acquiring, storing and using EL knowledge in the long-term memory (Young, Sexton, 1997). The present study suggests an aggregated learning theory that captures both cognitive and experiential views. From the tip of the Iceberg analogy, the current study alludes to a cognitive process of acquiring, storing and structuring knowledge as the base process beneath the tip of the iceberg. In contrast, the 'tip' reveals the modified experiences.

Additionally, an aggregated view of learning should be considered in light of the recent paradigm shift to a socially constructed sense of meaning and identity, which is currently shaping how people learn (Gergen, 1994; Rae, 2004). Thus, such a consideration allows researchers to understand how people learn, act, experiment, and redefine their sense of work in a dynamic development process. Furthermore, a review for social constructivism suggests that such learning is considered in the context of perceived, simulated, or actual environments.

Simulating the entrepreneurial environment is at the heart of the current study. We argue that a design-focused EE offers a platform for practising or testing the business startup processes through the aggregated perspective (cognitive and experiential), where the modified experience will be socially constructed and drawn from contextualised learning. This is because such a program offers a practical simulation-based approach that allows the participant to have first-hand entrepreneurial experiences, work with business teams and engage with the support environment.

2. Method

The current study focuses on three main factors: EI, ESE, and EL. We considered EL from the point of view of a design thinking-based EE at the tertiary level. The study population was first-year university students in Ghana taking a design-focused entrepreneurship course. The study was a cross-sectional analysis of participants' responses (Saunders et al., 2003). The study seeks to address the following hypotheses:

1. There is a positive relationship between personal and social emergence learning and ESE.
2. There is a positive relationship between negotiated enterprise learning and ESE.
3. There is a positive relationship between contextual learning and ESE.
4. ESE moderates the relationship between EL and EI.

Participants

With a study population of 280 students, the current research had responses from 207 participants, suggesting a response rate of 75 %. Table 1 shows the participants' demographic features. According to the result of the study, 106 (51.2 %) participants were male, while 101 (48.8 %) were female. Concerning the age distribution, 170 (82.1 %) respondents, representing the majority, were between 18 and 20 years. This group was followed by those between the ages of 21 and 23, numbering 27 (13 %). Respondents aged between 15 and 17 and 24 and above were in the minority. They numbered 8 (3.9 %) and 2 (1 %).

Additionally, 83 (40.1 %) of the respondents were also enrolled in business administration, while computer science was the least populated major, with only 25 students (12.1 %). Engineering and MIS recorded 61 (29.5 %) and 38 (18.4 %) respondents respectively. To contextualise the study's results for the variance in the demographic features of the respondents, an analysis of variance was conducted to assess how the differences may affect the dependent variables.

Table 1. Demographic characteristics of Interview participants (N = 207)

Category	No. of respondents	Percentage %
Gender		
Male	106	51.2
Female	101	48.8
Age		
15-17	8	3.9
18-20	170	82.1
21-23	27	13.0
24 and above	2	1.0
Major		
MIS	38	18.4
Engineering	61	29.5
Business Administration	83	40.1
Computer Science	25	12.1

Measures

The study questionnaire initially had 33 items adopted from extant literature (Deakins, Freel, 1998; Rae, Carswell, 2000). These instruments were pretested on 10 students to assess reliability and validity. The questions in the study were mainly close-ended questions grouped under specific sub-scales. The questions were administered with a five-point Likert-type rating scale. The endpoints of the scale were labelled "completely unsure" to "completely sure". The scale rating points were: completely unsure = 1; relatively unsure = 2; neither unsure nor sure = 3; relatively sure = 4; completely sure = 5. The survey questionnaire was used to collect primary data on five subscales, namely, personal and social emergence, contextual learning, negotiated enterprise learning, EI and ESE.

Data Analysis

Owing to the study's goal to develop a model, the variables and constructs considered in the study were put through rigorous structural analysis to assess their reliability. In this respect, the study adopted a one-sample t-test, KMO and Bartlett's Test. Furthermore, the reliability of the constructs was further examined using exploratory factor analysis and Cronbach's alpha of the sub-scales (Gliem, Gliem, 2003). Variables and constructs with Cronbach's alpha values below the accepted standards were excluded from the study. In addition, the Pearson correlation matrix was done to identify the relationship between and among the predictors and dependent variables (Sherry, Henson, 2005) and possible signs of probable multicollinearity (Abor, 2008).

T-Test and Reliability Analysis

Table 2 shows the result of the t-test analysis, which displays the means and standard deviations of the variables used in the study. The mean scores suggest the extent to which the respondents are sure or unsure about the statements in the questionnaire. Thus, these scores show how each item performed from the respondents' viewpoint.

As shown in Table 2, the highest means were 4.31 (Develop new ideas), 4.23 (My future aspirations affect my entrepreneurial attitude), and 4.14 (Develop new products and services). These means suggest that the respondents were completely sure the design-focused EE had influenced EL and their ability to develop new ideas, products and services. They show that they agree that their future aspirations affect their entrepreneurial attitude. On the other hand, the lowest mean were 3.06 (How society sees me influences my entrepreneurial attitude); 3.23 (I am willing to start a business in the midst of several constraints and difficulties) and 3.30 (My entrepreneurial attitude has been affected by others perception of setting up a business). The two extreme sides (which are the highest and lowest mean) go to show that though the students completely agree their EL has influenced their ability to develop new ideas, products and services, they also opined that they are not clear if their entrepreneurial attitude is influenced by how society sees them.

Table 2. T-test of the statements in the questionnaires

Items	Mean	Std	t	df	ρ
My family plays a major role in my entrepreneurial attitude	3.45	1.205	41.228	207	000***
My previous experience influences my entrepreneurial attitude	3.41	1.174	41.739	207	000***
My future aspirations influence my entrepreneurial attitude	4.23	.941	64.644	207	000***
How society sees me influences my entrepreneurial attitude	3.06	1.276	34.485	207	000***
My entrepreneurial attitude has been affected by others' perceptions of setting up a business	3.30	1.169	40.615	207	000***
I believe the experience I've gained with my team will influence my entrepreneurial attitude	3.99	1.005	57.137	207	000***
I will be able to recognise opportunities in line with my team's simulation experience	3.95	.951	59.694	207	000***
I can say I have practical experience that can help me to know what to do in a future entrepreneurial endeavour	4.06	.964	60.585	207	000***
I am likely to start a business before I complete school	3.61	1.160	44.750	207	000***
I am likely to start a business immediately	3.60	1.148	45.164	207	000***

after school (at most one year				
I am willing to start a business in the midst of several constraints and difficulty	3.25	1.212	38.548	207	000***
Develop new ideas	4.31	.690	89.505	207	000***
Perform financial analysis	3.91	.888	63.401	207	000***
Set and meet sales goals	4.05	.813	71.469	207	000***
Conduct market analysis	4.07	.818	71.409	207	000***
Develop new markets	3.94	.844	66.868	207	000***
Develop new products and services	4.14	.756	78.911	207	000***
Reduce risk and uncertainty	3.89	.781	41.228	207	000***
Conduct strategic planning	4.13	.809	41.739	207	000***

Notes. ***$p < 0.001$, **$p < 0.01$, *$p < 0.05$.

Table 3 shows the Bartlett test of Sphericity (Approx: Chi-square = 2651.102, df = 325, $p < 0.000$) and the KMO measure of sampling adequacy (Value of .888). This confirms a significant correlation among the variables, warranting the exploratory factor analysis (EFA) application. The table illustrates the results of the KMO test run for the data collected. The KMO statistic of .888 for the variables considered in the study suggests a higher possibility of inter-correlation between the variables, thereby affirming their validity for further analysis.

Table 3. KMO and Bartlett's Test of the questionnaire

Test	Score
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.888
Bartlett's Test of Sphericity Approx. Chi-Square	2651.102
df	325
ρ	.000***

Source: Field research (2017). ***$p < 0.001$

According to scholars like Velicer and Fava (1998), a factor loading for EFA is considered "high" if it is 0.8 or greater – however, this rarely is the case in real data. Hair et al. (2010) explain variables with factor loadings of 0.5 and above are ideal and should be considered for further analysis. They also explain that a commonly-held rule of thumb in the social sciences is that low to moderate variable loadings above 0.40 is often acceptable. Some social science researchers explain that rather than deleting and exempting scores because they have factor loading below 0.4, scholars may join such factors to other related factors or explore other additional factors that may strengthen the factor loading of the original factor (Henson, 2001). For example, Costello and Osborne (2005) explain that researchers may consider the item's purpose in the data and decide whether to drop it or add similar items for future research.

Furthermore, 14 of the 33 constructs were deleted because of their extremely low factor loading (items with factor loading below 0.3). Some constructs with factor loadings between 0.3 and 0.4 were maintained for further analysis because of their unique relevance in the study (e.g. the construct for negotiated enterprise). In contrast, others were kept in the study because other related constructs complemented them with high factor loadings. Notably, Cronbach alpha loading is primarily correlation coefficients; hence, a high loading only suggests variables are related to each other and further affirms the variables' validity. Table 4 reveals high loading, as well as strong Cronbach's alphas for the independent variables, which strongly affirms the reliability of the variables and the relevance and validity of the extracted constructs used to measure them.

The Cronbach's alpha coefficient results reveal clearly that all the scales for the predictor variables (EL) exceeded the minimum acceptable value of 0.6 (Kuss et al., 2012; Moss et al., 1998; Ogden, Flanagan, 2008). This goes to prove that the variables are reliable for multiple regression analysis.

Table 4. Reliability of Outcome Variables

Variables	Communalities	Item total Correlation	Loading	Cron. alpha
Personal and Social Emergence	-	-	-	**0.630**
My family plays a major role in my entrepreneurial attitude	.711	.369	.819	
My previous experience influences my entrepreneurial attitude	.675	.391	.744	
My future aspirations influence my entrepreneurial attitude	.655	.435	.340	
How society sees me influences my entrepreneurial attitude	.481	.309	.367	
Negotiated Enterprise	-	-	-	**0.722**
My entrepreneurial attitude has been affected by others' perception of setting up a business	.562	.315	.319	
Contextual Learning	-	-	-	**0.606**
I believe the experience I've gained with my team will influence my entrepreneurial attitude	.834	.575	.858	
I will be able to recognise opportunities in line with my team's simulation experience	.697	.608	.727	
I can say I have practical experience that can help me to know what to do in a future entrepreneurial endeavour	.792	.525	.845	

Additionally, Table 5 shows the reliability of the scales (EI and ESE) used for the dependent variables. The reliability scores were high, with Cronbach's alphas of 0.663 and 0.661 for EI and ESE, respectively. The reliability scores show that the constructs used to measure the outcome variables were able to describe EI and ESE. See Table 5 for more information on the reliability and validity test.

Table 5. Reliability of Outcome Variables

Variables	Communalities	Item total Correlation	Loading	Cronbach's alpha
Entrepreneurial Intention	-	-	-	0.663
I am likely to start a business before I complete school	.687	.458	.797	

I am likely to start a business immediately after school (at most one year	.744	.490	.829	
I am willing to start a business in the midst of several constraints and difficulty	.544	.445	.665	
Entrepreneurial Self Efficacy	-	-	-	**0.661**
Develop new ideas	.613	.442	.459	
Perform financial analysis	.625	.503	.731	
Set and meet sales goals	.681	.596	.793	
Conduct market analysis	.645	.566	.771	
Develop new markets	.590	.617	.643	
Develop new products and services	.574	.580	.594	
Reduce risk and uncertainty	.566	.628	.633	
Conduct strategic planning	.582	.633	.618	

3. Results

A multiple regression analysis was employed to assess the impact of the independent variables on the outcome variables. Thus, to ascertain the independent variables that best explain the dependent variables. The EI and ESE were used as the dependent variables, while ESE served as an independent variable to correlate with EIs. The overall independent variable was EL, which was sectioned into three subscales (personal and social emergence, negotiated and contextual learning). Table 6 illustrates a summary of the multiple regression least squares results for the variables.

Table 6. Multiple regression analysis of student EL and EI and ESE

Variables	OV1	oV2
Constant	0.276*** (11.802)	0.275*** (12.502)
Personal and Social emergence	0.368*** (5.354)	0.195*** (2.870)
Negotiated learning	-0.026 (-0.376)	-0.097 (-1.411)
Contextuallearning	0.096 (1.244)	0.443*** (6.254)
Entrepreneurial Self-efficacy	0.212*** (2.981)	-
Std. Error of the Estimate	0.81310	0.84903
R Square	0.280	0.263
F-stats	19.648	23.243
Prob.(F-stats)	.000	.000
Adjusted R Square	0.265	0.252
N	207	

Notes.
1. ov1: outcome variables 1 (EI)

2. ov2: outcome variables 2 (ESE)
3. Figures in Parenthesis: T-values
4. *** p = 0.000
5. Contextual learning: this variable is significant (β = 0.184, p < 0.05, t-value = 0.2605) only when ESE is excluded.
6. ESE: Was added stepwise – it increased the R Square from 0.225 to 0.280. However, the step makes contextual learning insignificant and reduces the significant beta coefficient of Personal and Social emergence learning to 0.368.

The predictor variables were assessed on two outcome variables (ov1 and ov2). In the first instance, the regression analysis was between the EL variables and EI. Here, ESE was also considered as one of the independent variables (stepwise regression) to assess its impact on EI. Prior to the addition of ESE, two of the predictor variables were found to have significant association with the dependent variable (EI) namely, contextual learning (β = 0.184, p < 0.05, t-value = 0.2605) and personal and social emergence learning (β = 0.368, p < 0.05, t-value = 5.354). Nonetheless, contextual learning ceased to significantly impact EI after the stepwise addition of ESE. The addition of the aforementioned stepwise variable increased the R Square value from 0.225 to 0.280. Thus, with the addition of the ESE variable, the model explains approximately 28 % of the changes in the dependent variable.

In addition, the study also examined the impact of the predictor variables on ESE. The results showed that personal and social emergence learning (β = 0.195, p<0.05, t-value = 0.2870) and contextual learning (β = 0.443, p <0.05, t-value = 6.254) had a significant positive impact on the ESE of the respondents. On the individual level, contextual learning was found to be the most important predictor of ESE because it had the highest beta coefficient (β = 0.443, p < 0.05, t-value = 6.254). This result shows that peer-to-peer collaborations, interactive learning and experiences drawn from teamwork are the most important influencers of a student's ESE. This was followed by Personal and social emergence learning. The R-square value for the model was 0.263, suggesting that the predictors explain 26.3 % of the changes in the dependent variable.

The F-ratio, illustrating the goodness of fit of the model, was found to be significant for both models; OV1 (F = 19.648, p < 0.01) and OV2 (F = 23.243, p < 0.01). Hence, affirming that the model was reliable and valid.

4. Discussion

The current study sought the relationship between EL acquired via a design-based EE, EI and ESE. The issue of graduate unemployment remains a canker in most developing countries, with Ghana, not an exception (Baah-Boateng, 2013). The situation is particularly typical in Sub-Saharan Africa and raises concerns over the future of the youth in these areas. While governments have employed several policy actions like promoting EE, the rising unemployment seems to suggest the policies are failing drastically. In terms of methodology, five distinct hypotheses were tested using a stepwise regression approach. This included three and four independent variables on outcome variables 1 (EI) and 2 (ESE), respectively. We discussed the relevant outcomes as follows:

H₁. There is a positive relationship between personal and social emergence learning and ESE

The results show that personal and social emergence learning (β = 0.195, p < 0.05, t-value = 0.2870) significantly impacted the ESE of the respondents. This supports the view that family entrepreneurial background, previous experience, future aspirations and society's perception of a person positively impact one's belief in their ability to accomplish important entrepreneurial actions. Our finding supports Donnellon et al.'s (2014) study on forming an entrepreneurial identity. Their findings explain that personal and social emergence contributes immensely to the development and testing of entrepreneurial identity, which in effect goes to affect their belief in ESE.

H₂. There is a positive relationship between negotiated enterprise learning and ESE.

The findings show that negotiated enterprise learning (β = 0.195, p<0.05, t-value = 0.2870) had a negative impact on ESE. However, we observed this relationship not to be significant. Nonetheless, Martin et al. (2013) also indicated a possible "reciprocal relationship" between the

quality of the EL experience, EI, and ESE. Barakat et al. (2014) noted that ESE tools help appreciate creative activities' influence on learning innovation.

H₃. There is a positive relationship between contextual learning and ESE.

The results show that contextual learning (β = 0.443, $p < 0.05$, t-value = 6.254) had a significant positive impact on the ESE of the respondents. On the individual level, contextual learning was the most important predictor of ESE because it had the highest beta coefficient (β = 0.443, $p < 0.05$, t-value = 6.254) compared with other predictor variables. This shows that the collaborations, interactive learning and experiences drawn from the project teams are the most critical influencers of a student's ESE. This view is accentuated by Rae (2004), who explains that people develop skills and expert knowledge from their work as employees and team members. Consequently, he explains that they earn the requisite experience, understanding and know-how they require to survive in an industry, enhancing their self-belief that they can undertake such entrepreneurial actions to succeed in that industry.

H₄. ESE moderates the relationship between EL and EI

Two of the predictor variables were found to have significant association with the dependent variable (EI) namely, contextual learning (β = 0.184, $p < 0.05$, t-value = 0.2605) and personal and social emergence learning (β = 0.368, $p < 0.05$, t-value = 5.354). After the stepwise addition of the ESE variable as a moderating factor, contextual learning ceased to impact EI significantly. However, adding the moderating factor also improved the R Square value from 0.225 to 0.280. Thus, with the addition of the ESE variable, the model explained approximately 28 % of the changes in the dependent variable, meaning that personal and social emergence learning and ESE work better to explain the change in the outcome variable (EI). This goes to affirm the point that family entrepreneurial background, previous experience, future aspiration, and society's perception of a person (which is a component of EL) have the greatest impact on a person's EI, if one develops self-belief in their ability to accomplish important entrepreneurial actions (ESE).

5. Conclusion and Recommendations

Using stepwise multiple regression analysis, we assessed the relationship and impact of EL indicators on EI and ESE first-year university students in Ghana (See Figure 1). Though both personal and social emergence learning and contextual learning have a significant positive relationship with ESE, the latter was the most important on the individual level. Design-focused EE is important to develop this attribute (ESE), as it encourages collaborations, interactive learning and experiences drawn from the project teams. The result of the study has implications for EE and entrepreneurship promotion in Ghanaian tertiary education. It affirms that factors such as family background and society's perception of a person aid the intention to establish a business in future. However, an EE that promotes collaborations, interactive learning and experiential learning are crucial for developing the competencies needed to believe one can accomplish entrepreneurial action. Future studies may further assess the impact of design-based EE on ESE and entrepreneurial activities rather than mere intentions.

7. Declaration of Competing Interest

The manuscript's authors declare that there is no interest in conflict, and all reference materials were dully acknowledged.

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Adolescents of Generation Z: the Development of Personal Agency in the Environment of Additional Education

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Abstract

The article reveals the theoretical and practical aspects of the development of adolescent's personal agency in the environment of additional education. A theoretical analysis of studies that determine the set of personal characteristics of adolescents of generation Z is presented.

The author substantiates the author's understanding of the personal agency of a teenager as an integrated characteristic of his personality, manifested in his ability to self-organize and self-realize, build effective social communications, social interaction and moral and value relations with others, aimed at satisfying his activity needs in world-building.

Additional education institutions are characterized as spaces that provide a high level of intensity of joint activities and communication of adolescents, opportunities for various activities, a positive psychological atmosphere of cooperation and creation with peers and adults.

The thematic content of the additional educational program "Social Testing Ground" is presented, which allows developing creative abilities and leadership potential, as well as improving those qualities of adolescents that made it possible to increase their level of personal agency. The program involved the development of four modules: social-individual, social-communicative, social-interactive, social-moral. The methods for studying the development of personal agency of adolescents are described.

The results of a longitudinal pre-experimental research design are presented, during which a complex impact on the personality of an adolescent was realized, which allowed him to more productively realize his self, readiness to express and defend his own opinion, accomplish goals both independently and in creative interaction with other people. The high efficiency of the socially

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enriched environment of additional education for the formation of the personal agency of the younger generation Z has been confirmed.

Keywords: generation Z, personal agency, adolescent, socially enriched environment, additional education.

1. Introduction

The theory of generations, which is now widely used in science and practice, developed in the 1990s and is associated with the names of American scientists N. Howe and W. Strauss (Malykhina, 2014). Describing the cyclicity and change of four human archetypes based on the analysis of the history of the development of American society, the researchers noted that there is a certain periodicity (about 20 years) with which a new generation, significantly different from the previous one, appears. The change of generations is closely related to the alternation of the stages of the socio-economic development of society, among which are awakening, flourishing, destruction and crisis.

Each stage is characterized by a specific set of conditions and events that influence the formation of the younger generation, determining the content of its values. Within the framework of this theory, dominant and recessive generations are distinguished by social orientation. At the same time, based on the type of socio-economic relations during the formation of this generation, they are classified by analogy with the seasons (Gurova, Evdokimova, 2017).

In various sources, the time limits of generations differ somewhat, but their names and basic characteristics, as a rule, coincide. The following generations are distinguished: "silent" (1924–1943), the "Baby Boomer" generation (1944–1963), generation X (1964–1984), generation Y (1985–2002), generation Z (2003–2023). Such factors as economic, political, technological, social, cultural and other processes of social life have a significant impact on the formation of the way of thinking, values and behaviors of each generation.

Researchers use the theory of generations by N. Howe and W. Strauss both in the framework of scientific works and projects of popular science (Ozhiganova, 2015; Skoblik, 2019), while their special attention is directed to young representatives of generation Z, adolescents in particular. This age period is sensitive for changes in relationships with others and changes in oneself. Therefore, the question of their psychological characteristics is natural.

So, U.A. Kogteva and E.V. Kogteva write that the life values of the representatives of generation Z are still in the process of formation. That is why situations of gaining experience and impressions, the desire for self-realization, the priority of leadership over management, partnership, collective decision-making, and lack of attachment to the workplace are important for them (Kogteva, 2019).

J. Twenge highlights the desire of adolescents for greater physical security, a tendency to depression, suicide, psychological immaturity, infantilism, and a lower level of involvement in relationships with peers (Twenge, 2017).

M. Prensky focuses on the features of their cognitive sphere such as a high speed of information processing, multitasking instead of sequence, development of spatial thinking with a decrease in critical thinking, and a high level of digital skills (Prensky, 2015).

C. Similler and M. Grace distinguish less propensity to take risks, being influenced by parents and peers, openness to new things, entrepreneurship, some political apathy, social liberality, readiness for individual study, digitalization of social binds and other characteristics (Seemiller, 2015).

T.H. Davydova and D.A. Zykova in a joint article note that modern adolescents, representing generation Z, are more fluent in technology, therefore they flexibly adapt to existing conditions. They have the following generalized characteristics: a decrease in the spread of bad habits (alcohol consumption, smoking, etc.), a fairly high degree of empathy, and awareness of the value of human life. According to the authors, the presence of communication skills is of particular importance in modern conditions (Davydova, Zykova, 2020).

Comparing the life course of the representatives of generations X and Z, an increase in the importance of material well-being, an expansion of the comfort zone and the transformation of traditional stereotypes regarding the family have been established. The representatives of generation Z are also distinguished by their unwillingness to take risks if there are no reliable guarantees of success, insufficient involvement in various areas of life, a willingness to give up

accomplishing a goal in case of obstacles to achieving it, and a growing level of infantility (Belova et al., 2020).

By integrating various characteristics of adolescents, scientists propose to study the characteristics of this generation through the phenomenon of "personal agency", which focuses on the most important characteristics of human personality such as activity, responsibility, self-organization (Panov, 2018). In foreign literature, the most accurate English analogue of the capacity of an actor to act in a given environment is "agency", which is seen as the ability not to become dependent on the external environment, to act independently, to take on certain functions (Mdivani, Lidskaya, 2014).

From our point of view, personal agency of an adolescent is an integrated characteristic of his personality, manifested in his ability for self-organization and self-realization, building effective social skills, social interaction and moral and value relations with others, aimed at satisfying his activity needs in peacemaking.

The process of making personal agency of modern adolescents is recognized by researchers as uneven and socially conditioned. But it is precisely within the boundaries of this age that decisive changes occur, setting an individual, characteristic of personal agency for each personality, which determines the prospects for a further course of life (Shchukina, 2004).

The development of individual components of personal agency in adolescents can be combined with the lag of others (Volkova, 2020), and the personal agency of an adolescent in digital activity can be combined with the lack of it in other types of activity such as politics, for instance. Being in different environmental conditions, adolescents, as they are especially sensitive to changes and the requirements of the society, can choose those types of activities that guarantee them success, rarely falling into the group of those who are ready for risk and change (Guseltseva, 2019).

To ensure the effective development of personal agency, teachers create social environments such as a "social oasis" (E. Fromm), "socially enriched" environments (Antopolskaya et al., 2020) in institutions of additional education. The life activity of adolescents in these organizations (centers of development, children's art houses, and summer educational centers) is distinguished by the fact that it has a high level of intensity of joint activities and communication, opportunities for various types of activities, and is characterized by a positive psychological atmosphere of cooperation and creativity with peers and with adults. For an adolescent, in the field of additional education it is important that he can make not only a voluntary choice of the direction and types of activity, but also the time, pace of mastering educational programs, as well as the teacher as their main initiator.

2. Materials and methods

The experiment on the development of personal agency of adolescents in the environment of additional education, which has been going on for the third year (Antopolskaya et al., 2020), made it possible to assess the dynamics of a number of personality characteristics of schoolchildren participating in it from the very beginning. All the participants of the experiment are the adolescents, who study in the development center of additional education "Dialog", Kursk. The participation in the educational programme "Social Testing Ground" allowed them to develop their creative abilities and leadership potential, to improve those qualities that made it possible to increase the level of personal agency. The content of the program implied the development of four modules: social-individual, social-communicative, social-interactive and social-moral.

As a part of the social-individual module, the adolescents mastered the following thematic blocks: "Personality and its formation. Character. Temperament. Skills". "Time management. Proactive approach to problem solving. Wheel of life balance. Pyramid of personal effectiveness. Formulation of SMART goals. "Introduction to Reframing Techniques".

As part of the socio-communicative module, the adolescents participated in learning of such topics as: "Communication. Verbal and non-verbal means of communication. Rules of contact establishment. Listening Techniques. Communication barriers"; "Perception. Mechanisms of interpersonal perception: identification, empathy, reflection. Mechanisms of intergroup perception. Effects of Perception"; "Cybersecurity. Information Security. Methods of working with information"; "Mastering the techniques of effective communication, familiarity with the technology of preparing for public speaking" and the "Presentation in an Elevator" technique.

The social-interactive module included the following topics: "Interaction strategies. Cooperation. Rivalry. Avoidance. Compromise. Adaptation"; "Team. Distribution of roles in a team. Methods for solving team problems"; "Collective. Stages of collective development"; "Conflict. Conflict situation. Dynamics of the conflict"; "Leader. Leadership. Leader types. Leader qualities.

The socio-moral module involved the study of the following topics: "Health and Its components"; "Risk behavior. Agents of influence"; "Techniques for resisting influence. Development of skills to resist manipulative influence during the exercise"; "I am changing the world for the better", etc.

The diagnostic results obtained at the beginning of 2020 at the ascertaining stage of the experiment, are compared by us with the data of the beginning of 2022, when the control stage of the experiment passed. Although a total of over 300 people participated in the implementation of this study, 50 adolescents were included in the current sample. The criteria for their selection were, firstly, the fact that they have been participating in the work of the Center for Creative Development "Dialog" for two years without any noticeable pauses. Secondly, during this period they were not included in the activities of any other institutions of additional education or creative associations. This allows us to fix the results of the implementation of our impact with higher reliability. At the beginning of the experiment, the students were 13-14 years old, today they are 15-16 years old.

Based on our above definition of personal agency, as an indicator of the personal agency development of adolescents of generation Z, such personal qualities as activity, self-control, responsibility, independence, own position, ability to interact with people, creative nature of interaction with people, self-organization, persistence, interest, and general level of personal agency have been singled out.

The following psychodiagnostic methods were used to assess them:

- "Self-assessment of the qualities of personal agency of adolescents, manifested in interaction with the social environment" (N.M. Saraeva, modification by T.A. Antopolskaya) allows you identifying the development of ten personal characteristics that ensure the implementation of personal agency;

- "Definition of the social creativity of an individual" (Batarshev A.V.) assesses the readiness for unusual solutions to various problems, for non-standard options for the implementation of interpersonal and group interaction, for subject-subject forms of communication with people;

- "Determining the level of leadership potential" (N.P. Fetiskin and others) diagnoses the degree of readiness of a teenager to realize the leadership qualities. The authors identify three normal levels of leadership manifestation: weak, medium and strong, as well as a destructive level, defined as a tendency to dictate.

The degree of reliability of differences in the indicators obtained in the ascertaining and control phases of the experiment was assessed with the Wilcoxon T-test.

3. Results

The peculiarities of the manifestation of individual qualities of adolescent personal agency were diagnosed using the technique "Self-assessment of the qualities of adolescent personal agency, showed in interaction with the social environment". Table 1 presents both these results and the average values of individual qualities of personal agency and its general level.

Table 1. Manifestation of the qualities of adolescent personal agency in the dynamics

Quality of personal agency	Arithmetic mean (M)		Value according to Wilcoxon t-test
	Ascertaining stage	Control stage	
Activity	4,34	4,74	146**
Self-control	3,73	3,79	482

Responsibility	4,17	4,21	512
Independence	4,02	4,33	402*
Own position	4,1	4,75	184**
Ability to interact with people	4,13	4,34	456*
Creative nature of interaction with people	4,18	4,62	234**
Self-organization	3,76	3,94	443*
Perseverance	4,16	4,35	424*
Interest	4,17	4,59	213**
General level of personal agency	4,09	4,32	399*

Notes:
* Statistically significant differences ($p \leq 0.05$);
** Statistically significant differences ($p \leq 0.01$)

From the data obtained, it can be seen that over 2 years of participation in the experiment, there is a positive trend in the growth of the degree of manifestation of all the studied qualities of personal agency. However, the intensity of this growth differs markedly in individual parameters: minimal differences were found in the positions of "self-control" and "responsibility". Their averages have risen by less than 0.1 points. From 0.18 to 0.21 points, the average values for such qualities as "self-organization", "perseverance" and "ability to interact with people" have increased. The quality indicator "independence" has increased by 0.31 points. What is even more noticeable is that the arithmetic mean value of the qualities "activity", "interest" and "creative nature of interaction with people" has increased from 0.4 to 0.44. And the maximum dynamics were noted for such a parameter as "own position" - 0.65 points.

It is obvious that the high stability of the development level of such a quality as "self-control" over the period of the study is associated both with the complexity of its implementation in adolescence and with the rather self-critical attitude of most adolescents towards themselves. In the interviews conducted after the survey, the adolescents indicated that they had not always been able to control themselves well even in those cases when it had been necessary and explained that by their sensibility and lack of life experience.

The quality of "one's own position", which stands out for its highest growth over a given period, is, according to many authors, along with "activity", the most striking characteristic of individual personal agency. At the ascertaining stage of the experiment, it took only the seventh place out of ten, but at the control stage it becomes the most highly developed. This can be explained by the fact that the targeted impact that adolescents were exposed to in the developing environment of additional education was largely aimed at helping them learn to be aware of their opinion and defend it if necessary. "Activity" is now in the second place, although in absolute terms their arithmetic mean values differ by only one hundredth. In the third place there is "the creative nature of interaction with people." This quality steadily occupies a leading position in this hierarchy, which is associated with the creative atmosphere of interpersonal interaction during the implementation of our educational programme.

Comparing the individual indicators of adolescents according to this method, at the ascertaining and control stages of the experiment, we have found out that there are significant differences between eight out of ten studied qualities. At the 1 % level of significance, they are characteristic of such qualities as "activity", "one's own position", "the creative nature of interaction with people" and "interest". At the 5 % significance level, the indicators "independence", "ability to interact with people" and "self-organization" vary. Significant differences are absent only between the indicators of the qualities "self-control" and "responsibility". We believe that this fact confirms the effectiveness of the work on the development of the adolescent personal agency, which is provided by a socially enriched environment in the system of additional education.

The overall level of an individual personal agency, calculated on the basis of a set of assessments of 10 individual qualities, has also increased markedly over the period under study. Its average scores have increased from 4.09 to 4.32 points, and the individual results of adolescents at

different stages of the experiment have statistically significant differences at the 5 % level. This once again allows us to speak about the effectiveness of the program being implemented and the possibilities of the social environment of the additional education center for the comprehensive self-realization of adolescents.

In order to assess the dynamics of social creativity of adolescents, we used the method "Determining the social creativity of an individual." It allows us to distinguish nine levels of development of the diagnosed quality. However, the first three levels such as "very low", "low" and "below average", were absent in our sample. Therefore, Table 2 presents data on the six detected levels.

At the ascertaining stage of the experiment, it turned out that "high" and "very high" levels of creativity are the least common. The level "slightly below average" is found somewhat more often (in 10 %), and the vast majority of adolescents have levels of "average" (24 %), "slightly above average" (30 %) and "above average" (30 %) (see Table 2). Accordingly, in general, the creative potential of most adolescents has a sufficient level of development for the implementation of tasks, the solution of which requires a certain novelty. But it is hardly possible to talk about a stable ability to find one's own, original ways of achieving the goal.

At the control stage of the experiment, the number of adolescents with an "average" level of social creativity decreased most noticeably – from 24 % to 6 %. The proportion of adolescents with the levels "slightly above average" and "above average" practically did not change, and the proportion of schoolchildren with "high" and "very high" levels of social creativity increased. At the ascertaining stage, their total number was only 6 %, and on the control it was 32 %. Consequently, during the period under review, it was possible to significantly increase the ability of adolescents to be creatively active, including in the social sphere.

Table 2. The development level of adolescent social creativity in the dynamics (%)

Level of development	Stages of the experiment	
	Ascertaining	Control
Slightly below average	10 %	4 %
Average	24 %	6 %
Slightly above average	30 %	30 %
Above average	30 %	28 %
High level	4 %	20 %
Very high level	2 %	12 %

Comparing the number of individual scores got by adolescents at the ascertaining and control stages of the study with the Wilcoxon T-test, Temp = 268 was obtained, which corresponds to statistically significant differences at a 1 % significance level ($p \leq 0.01$). This confirms the developmental effect of the experimental impact on this personality characteristic.

The method "Determining the level of leadership potential" was used to assess the dynamics of the leadership potential of adolescents at the ascertaining and control stages of the experiment (see Table 3).

Table 3. Leadership potential of adolescents in the dynamics (%)

Level of expression	Stages of the experiment	
	Ascertaining	Control
Weak	50 %	26 %
Medium	46 %	56 %
Strong	4 %	18 %
Tendency to dictate	0 %	0 %

If at the beginning of the study half of all adolescents rated their leadership abilities as weak, then two years later, only 26 % of the respondents adhered to this point of view. The average level of leadership potential has grown from 46 % to 56 %, and the percentage of teenagers with a high level has noticeably increased: from 4 % to 18 %. An excessive level of leadership, defined by the authors of the method, as a "tendency to dictate" has not been found in anyone.

Although, at first glance, there were no dramatic changes, but comparing the individual results got by the respondents at the ascertaining and control stages of the study using the Wilcoxon T-test, the value Temp = 65 was obtained, which corresponds to statistically significant differences at the 1 % significance level (p ≤ 0.01). That is, there has been an objective shift in adolescents' self-assessment of their leadership qualities, which allows them to evaluate themselves more highly in the system of interpersonal and intragroup interaction.

Assessing the overall results of the study, it can be argued that we observe a stable, statistically significant positive trend in all the selected parameters of adolescent personal agency. As a result of the experiment, a complex impact on the personality of a teenager was implemented, which allows him to more productively realize his self, readiness to express and defend his own opinion, accomplish goals both independently and in creative interaction with other people. The high efficiency of the socially enriched environment of additional education for the formation of personal agency of the younger generation Z has been confirmed.

4. Discussion

As the literature data show, the discussions of scientists related to the search for the basic characteristics of the "generation Z", with the development of important subjective qualities in modern adolescents and with the definition of effective environmental conditions for this development, continue.

A fairly large study in this area was carried out by N.V. Bogacheva and E.V. Sivak (National Research University Higher School of Economics). The authors point to the internal heterogeneity of generation Z adolescents and to the need to take into account age specifics, described in the classic works of D.B. Elkonin, E. Erikson and others (intimate-personal communication as a leading activity, search for identity, etc.). The researchers also emphasize that it would be methodologically incorrect to compare generation Z and older generations, since the former is still in the process of developing moral guidelines and cognitive capabilities. And therefore, at the moment it is impossible to state categorically what they will be like for representatives of generation Z in their adulthood. At the same time, fragmentation and, in some aspects, inconsistency of existing ideas about the psychological characteristics of adolescents of generation Z are revealed. There is a fairly large number of "myths" in this area, many of which are not confirmed in practice.

For example, the ability to multitask distinguishes not only modern adolescents, but also the older generation due to the high pace of life in general and the active use of digital technologies, the instability of attention characteristic of adolescents can be largely explained by age characteristics, since the attention of adults is better developed in general. The lower level of development of critical thinking in adolescents and their greater pragmatism in matters of education do not have a sufficient scientific basis that could confirm this. It is also not entirely correct to say that modern teenagers communicate less with their peers, because they use other communication channels (e.g. social networks, instant messengers, etc.) (Bogacheva, Spivak, 2019).

A new factor "wedging" into the development of modern adolescents is the digitalization of social interactions, digital technologies with elements of artificial intelligence and online learning. A discourse is unfolding about the possibilities of the information environment for the development of the adolescent personal agency. The information environment facilitates access to information, implements the freedom of an adolescent's choice, provides a demonstration of the educational results of the subjects of the educational process, communication, and the possibility of comparing actively the obtained results. In the study of N.S. Kramarenko it is shown that the likelihood of positive dynamics in the development of an adolescent's personal agency in the Internet environment is mediated by the goals of its use: for entertainment or for self-development. It is not about their opposition, but about the relationship. Adolescents, focused primarily on receiving positive emotions through online communication or games, have lower rates of self-actualization and self-confidence than those of their peers who, in addition, are interested in

creative activity and self-presentation through the creation of various online communities. (Kramarenko, 2013). E.A. Nikitina argues that the socialization of modern adolescents is turning into technical socialization. Today information and communication technologies are the basis for the formation of intelligence, which, from her point of view, is equal to the formation of personal agency (Nikitina, 2016).

Although there is evidence of inconsistency and uneven development of individual qualities of personal agency of modern adolescents, it is possible to talk about the need for their participation in special additional educational programs in order to harmonize their personal agency and achieve a balance between the qualities that are formed in response to the challenges of the time and the key components of personal agency associated with the ability "change yourself without betraying yourself" (L. Antsyferova). All this requires not only studying the characteristics of personal agency of generation Z adolescents but also organizing special assistance to teachers in designing socially enriched environments for "live" communication and interaction between adults and adolescents as a prerequisite for the full development of adolescent personal agency.

5. Limitations

The limited sample volume does not allow extrapolating the research data to all the students in institutions of additional education. In this case, they characterize only adolescent schoolchildren studying in the system of additional education in Kursk. Moreover, the reliability of the results obtained is somewhat reduced due to the absence of a control group in this study, which is associated with the chosen design longitudinal pre-experimental research design.

6. Conclusion

1. From the literature data, it follows that the development of personal and subjective qualities in adolescents of generation Z is the focus of many authors, whose studies present diverse and sometimes conflicting data. However, for the most part, they agree that, due to a sharp change in the social situation of the development of modern children, the problem of studying and developing the personal agency of adolescents of generation Z continues to be relevant.

2. In order to test the hypothesis about the positive impact of the socially enriched environment in the institution of additional education on the development of the personal agency of adolescents of generation Z, a complex of pedagogical influence was formed within the framework of the additional educational program "Social Testing Ground", intended to develop the main characteristics of personal agency of adolescents, their social creativity and leadership potential.

3. The experimental data obtained at the same time showed the effectiveness of using a socially enriched environment in additional education as a condition and factor for personal development and subjective qualities of adolescents of generation Z. The abilities of adolescents to productively realize their self, their readiness to express and defend their own opinion, to solve their goals both independently and in creative interaction with other people were most obviously developed. At the same time, the dynamics of the development of subjective qualities is characterized by unevenness, which is explained by the influence of a number of both age and social factors on adolescents.

4. In general, the data obtained confirm the need to design socially enriched environments of "live" communication and interaction between adults and adolescents as a prerequisite for the full development of the adolescent's personal agency, in order to help to identify those who are at risk of the consequences of adverse development of personal agency.

7. Acknowledgments

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Educating a Student's Legal Culture: A New Approach to Developing A Learning Model

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Abstract
The pertinence of the issue beneath think about is determined on the one hand, by the objective need of society for a person who has a legal culture, respects and complies with the law, on the other – by the unrealized educational conceivable outcomes of utilizing the discourse instructive circumstance within the instructive prepare of the college. The purpose of the article is to substantiate the auxiliary and utilitarian show of instruction of the lawful culture of the understudy by implies of the discourse instructive circumstance. Research methods: a theoretical and comparative analysis of scientific literature; study of advanced pedagogical experience, retrospective analysis of their own experience; purposeful pedagogical observation, conversation, survey, analysis of the results; hypothesis building, forecasting. The article substantiates the activity and cultural approaches as a methodological strategy for studying the method of teaching a student's lawful culture by means of a discourse instructive circumstance, aimed at forming the student's subjective position, self-determination, self-affirmation in the cultural and legal environment of the college, personal formation, which contributes to the enrichment of the educational hypothesis of activity and the theory of cultural education. Practical significance: The methodological system is aimed at criterion-diagnostic support of the instruction of the student's lawful culture, including criteria, indicators, and level characteristics of the arrangement of the student's lawful culture (high, sufficient, low), which allows to improve the educational process and diagnose the investigated personality quality.

Keywords: speech educational situation, personal culture, legal culture, professional training, students.

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1. Introduction

In science, it is argued that within the instructive handle, a discourse educational situation acquires quite large opportunities, as a situation of educational tension that occurs spontaneously or is organized by a teacher. In the education of legal culture, it allows you to strengthen professional orientation, positive motives, subjectivity, self-determination, personal development. As our question arose, the discourse instructive circumstance within the handle of instruction is constantly used, but if it is not reflected, the expected pedagogical result is not achieved.

Legitimate culture is a necessary portion of human civilization (Ansolabehere, 2011; Nelken, 2016). It actualizes the values. It actualizes the values of the law developed by humanity in the course of its social development. Currently, a comprehensive review of the scientific concept of "legal culture" is needed, based on the joint work of lawyers, educators, psychologists, sociologists, and other researchers (Garrido Gómez, 2016).

Legal culture is a system of legal knowledge, attitude to law, and legal behavior of citizens in all spheres of life (Kurylo et al., 2020; Díaz, Navarro, 2020). It defines the framework for the functioning of all public and State bodies and institutions. The legal culture, through its functions, affects all aspects of public life, and in turn is affected by it (Kachur et al., 2020).

Additionally, it is quite obvious that modern society is at the very beginning of a complex and long path to a high level of legal culture. The present and future of our country, undoubtedly, depending on the youth, in particular, on students.

In general, the problem of the study is expressed in the content, technologies, and forms of utilizing discourse as an indicator of learning the student's legal culture. In science, several studies have been accumulated (Absattarov, 2019; Nabievna, Manafovna, 2019; Sergeeva et al., 2019) on the problems of educating the legal culture of the individual: the historical and theoretical aspect of legal education of young people was studied, the management of the process of legal education was analyzed. At the same time, no specific studies were conducted to identify the pedagogical conditions for the effective instruction of the student's legitimate culture, and the possibilities of speech activity and speech educational situations in this process were not considered.

This allowed us to reveal several contradictions between:

- the objective need of society for a person who has a legal culture, respects and complies with the law, and a low level of legal education of graduates of higher professional educational institutions;

- the possibilities of the discourse instructive circumstance within the education of the legal culture of the student and their insufficient use by teachers in this process.

The solidarity of law and culture, taking into consideration their uniqueness and nonidentity, is communicated within the concept of "legitimate culture". Within the logical writing, there is no single point of see on the definition of the concept of "lawful culture". In its comprehensive analysis, it is necessary to distinguish three significant positions.

First, an examination of the specialized writing on this issue has appeared that the first definitions of legitimate culture are given within the writing of 60-80 a long time (Kotler, 1967; Rakowska-Harmstone, 1975). They are presented mainly through the category of "communist legitimate culture". In the afterward period, researchers essentially did not address this issue, even though social relations have experienced critical changes, the previously developed concept of the socialist legal culture has ceased to correspond to Russian realities. Definitions of legitimate culture were proposed, as the run the show, by legitimate researchers, since within the past it was considered accessible to legal advisers to look at legal issues.

Secondly, the development of this concept was carried out primarily from connected positions without taking into consideration the socio-philosophical perspective of this issue. Thus, advanced science needs a comprehensive definition that compares the fundamental substance of this concept and considers legitimate culture as a philosophical, lawful, and social marvel of state-legal reality, without barring the need for the lawful substance of this category (Sovhira et al., 2019).

Third, at the show, the method of examining the issues of legal culture has heightened within the world of the statute, but these thoughts are progressively barely connected (Piszcz, Sierocka, 2020), primarily related to the proficient angles of this lawful category.

The monograph "Political and Legitimate Culture (methodological perspectives)" (Keizerov, 1983), continuing from a barely regulating translation of the law, deciphers the wonder of lawful

culture as takes after: "Anything down to earth substantial shapes political and legitimate culture may take, in anything complex interlacing, in anything unified solidarity with fabric, essential relations they may show up, their primary characterizing include is their having a place to the superstructure, to ideological relations. The beginning of the methodological position permits us to uncover the social essence of legitimate culture within the framework of social wonders and relations." Based on the common definition of culture as a social marvel related to the superstructure and ideological relations, the creator characterizes legitimate culture as an instruction of a superstructure, and ideological nature. At the same time, the creator to gets a steady state of social practice through legal culture

The foremost known definition of lawful culture was proposed by V.I. Kaminsky and A.R. Fatinovy. "Under the legal culture," they compose, "it is proposed to understand a system of materialized and ideal elements that belong to the scope of the law and their reflection in the consciousness and behavior of people" (Kaminsky, 1974). The definition given within the Philosophical Dictionary edited by M.M. Rosenthal is additionally enlightening: "The totality of legal knowledge, beliefs, and attitudes of the individual, realized in the process of work, communication, behavior, as well as attitudes to material and spiritual values" (Rosenthal, 1975).

The analysis of psychological, pedagogical, and special literature provides the basis for the conclusion that the method of arrangement and improvement of the lawful culture of the person is of a characteristic nature, usually due to changes within the socio-economic and political spheres of society, associated with the reorientation of modern education to humanistic values. This is done with the strengthening of the cultural role of discourse instructive circumstances within the education of the legal culture of the student.

When determining the leading approach in the study, we rely on the opinion of A.N. Leontiev, who considered the speech situation in the aspect of activity. He believed that any activity is motivated, action is purposeful, and operations serve as a means or condition for purposeful action. According to the scientist, the prerequisite for any activity is a need. The need to engage in communication, in turn, is initiated by the situation, which is understood as a set of discourse and non-speech conditions necessary and sufficient for performing speech activity (Leontiev, 2005).

The advancement of the concept of "discourse circumstance" is reflected within the practical research of philologists (Zolotova, 2004).

To use speech situations for educational purposes, they need to be organized, classified by content, by speech intentions, and only then used in the lesson as a means of teaching.

The analysis of various points of view allowed us to give a definition of the legal culture of the individual, which we will adhere to in the study. Legal culture, as an integrative personal quality, is characterized by a value-based demeanor to law, lawful information, and dynamic lawful movement pointed at actualizing viable involvement of legal behavior.

In this way, in our think about, the discourse instructive circumstance is considered as a circumstance of instructive pressure that emerges suddenly or organized by the educator, the reason of which is to extend the subjectivity of an individual, his self-determination and self-affirmation within the social and lawful environment of the college and individual improvement. The speech educational situation has the following pedagogical possibilities in the education of the lawful culture of the understudy:

- impact on the arrangement of the subject position of the understudy within the course of acing the discourse aptitudes of recognition, expression and interaction; execution of the dialogic nature of the instruction handle (exchange with the educator, writing, individual understudy, with himself);

- actualization of the utilize of helpful advances (discourse, self-presentation, case study, discussion, critical thinking development techniques);

- formation of value-based legal orientations and motivation of active legal activity of the student.

2. Materials and methods

The methodological premise of the inquire about is philosophical, legal, psychological, pedagogical theories that reveal the categories of "lawful culture", "discourse instructive circumstance"; the provisions of psychology and pedagogy about the person as the highest value of

society, about the social essence of the individual, the laws of its formation and development; the provisions of activity and cultural approaches in pedagogy.

To identify differences within the dissemination of the trait, we used a nonparametric X^2 test with a probability of 0.01 acceptable error. Tables, diagrams, and graphs were used to visualize the experimental data.

The consideration of the issue was carried out in three stages:

At the primary, preliminary arrange (2018–2019), the work was pointed at deciding the beginning positions of the think about. For this reason, the works of residential and remote creators on logic, brain research, instructional method, law, and sociology were examined, uncovering the most hypothetical issues. As a result, a range of philosophical, psychological, pedagogical and legal literature was identified, which served as a theoretical basis for determining the essence, structure and functions of the student's legitimate culture, as well as the possibilities of its education by means of the discourse instructive circumstance.

The second phase of the study (2019–2020) consisted of two stages: the first was the development of methods of ascertaining experiment, the mass of statement of the research problem; on the second – settled methods of conducting formative experiment, tested pedagogical conditions of instruction of legitimate culture of a understudy implies a speech-educational circumstance within the instructive handle of the College.

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The third phase (2020–2021) was committed to the investigation, systematization, and translation of the results of the test, the definition of conclusions and the plan of the investigation materials.

To obtain representative material, 80 students of the International Kazakh-Turkish University and the South Kazakhstan State University in the Turkestan region were surveyed. Of these, 40 understudies were within the exploratory bunch and the remaining 40 understudies were within the control gather. The members of the survey were students of 1-2 courses who have relatively equal knowledge of the basics of the law, since the state educational standards of higher professional education in this period of study involve the study of the basics of law by students of different specialties and directions.

Knowledge of aspects of legal culture was monitored by observation, directly included in the instructive handle, agreeing to the following parameters:

1) Legal awareness;
2) Legal values;
3) The legal activity;
4) Legal creativity;
5) Legal self-control.

At the starting phase of the experiment, we developed a questionnaire for students containing 16 questions of closed and open types, and a questionnaire for teachers, according to the results of which certain judgments were obtained.

The set of diagnostic materials included the following methods: a modified method for measuring the effectiveness of legal education V.V. Golovnenko, an adapted diagnosis of the arrangement of legitimate culture of students S.I. Nefedova, a modified questionnaire " Self-assessment of the realization of personal life goals "(N.R. Molochnikov); an adapted method of M. Rokich" Value orientations"; a method" Unfinished sentences"; questionnaires" My rights", "Speech quality".

3. Results

As a result of the examination of different focuses of see on the structure of the lawful culture of the individual, we present it as a unity of three components: motivational-value, cognitive, and activity.

The substance of the components of the legal culture of the individual is presented in Table 1.

Table 1. Content of the components of the legal culture of the individual

Legal culture		
Motivational-value component	**Cognitive Component**	**Activity component**
motivation for the study of law	legal awareness	experience in the practical application of legal norms
the value of freedom, the confidence that only the freedom of all people in society is one of the reliable guarantees of freedom for everyone	knowledge of legal norms, procedures, and institutions implementing the law	skills and abilities to use the law, subordination of their behavior to the requirements of legal norms
respect for the dignity of other persons acting as equal participants in legal communication; legal views and beliefs		active creative legal activity aimed at the realization of the interests of individuals within the limits of legal norms
personal responsibility for their actions and an inner belief in the importance of the fulfillment of the duties that lie on them		discipline, demanding in the implementation of legal norms; self-control over compliance with legal norms

In the study, we focused on the functions of the student's lawful culture, which correlate with the functions of the discourse instructive circumstance and with the functions of the process of educating the legal culture (Table 2).

Table 2. Correlation of the functions of legal culture, the method of instruction of lawful culture and the speech educational situation

Functions of the student's lawful culture	**Functions of the process of teaching the student's lawful culture**	**Functions of the discourse instructive circumstance**
Value-normative	Value-regulatory system	Programming system
Cognitive transformative	Gnostic	Educational program
Legal education	Legalmodeling	Educational program
Communication system	Communication system	Fascination

The value-normative function of the student's lawful culture is associated with the process of assigning legal values, or mating legal orientations that are necessary for him to successfully adapt to society. Lawful values are pointed at the formation of individual responsibility for their activities. The higher the value of the law is realized, the greater the degree of subordination of one's actions to the norms of law. Among the main values are the rights and opportunities of each individual in unity with his responsibility to society.

The cognitive-transformative function of the student's legal culture is connected with the task of acquiring legal knowledge, applying it in the cultural and legal environment of the college (which is provided by the use of the framework of discourse educational situations), the subsequent translation of legal knowledge to various categories of citizens and, ultimately, with the construction of the rule of law.

The legal-educational function reflects the development of the legal qualities of the student, and the formation of his skills of lawful, socially active behavior, due to the developed value-legal orientations first in the cultural and legal environment of the college, and then in everyday life. Compliance with the norms of law should become a habit, become an internal conviction, and a guarantee of lawful behavior in various legal situations.

The communicative function of a student's legal culture is realized within the handle of communication based on the utilization of a framework of discourse instructive circumstances between a teacher and a student, a student and other students, and later – between a professional specialist and various categories of citizens. The communicative function provides the practical implementation of the process of teaching the student's lawful culture.

In the course of our research, it became necessary to develop a model of teaching the student's lawful culture employing a speech educational situation that can holistically reflect the process under study, its specifics, and patterns.

When designing the model, we were guided by several necessary and sufficient requirements, based on which the model should:

- serve as a means of developing the theory;

- to be a means of interpreting a theory or hypothesis about a phenomenon or process; to develop a particular theory, to confirm or refute the theory put forward;

- be a means of predicting the development of observable or difficult-to-observe processes;

- be experimentally controlled, universal enough to describe, and explain the variety of connections of the modeling object;

- being visual and visible.

The model developed by us is based on a systematic approach, and modeling principles, taking into consideration the specifics of the protest and subject of investigation. The use of modeling made it possible to identify and explore the natural connections that reflect specific pedagogical realities, to determine the means to achieve the goal in an idealized object, and to justify and develop a project. The theoretical model includes a theoretical and methodological concept, regularities, principles, and scientific tools (Figure 1).
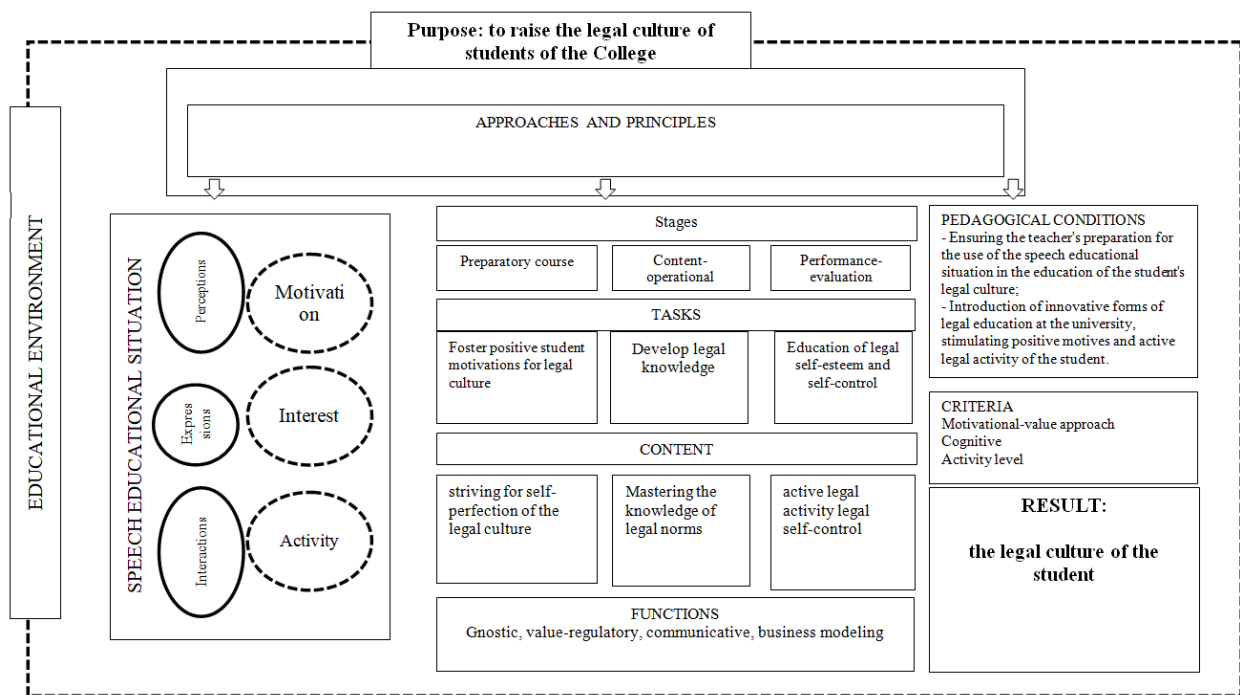
Fig. 1. Auxiliary and utilitarian demonstrate of instruction of the lawful culture of the understudy by implies of the discourse instructive circumstance

Based on the specifics of the question and subject of our think about, the taking after conditions for the instruction of the lawful culture of the understudy by implies of the discourse instructive circumstance were:

- Ensuring the teacher's preparation for the use of the speech educational situation in the education of the student's legitimate culture, which allows organizing the process under study;

- Presentation of inventive shapes of legitimate instruction at the college, fortifying positive thought processes and dynamic legitimate action of the understudy.

Confirmation of the adequacy of educational conditions of instruction of lawful culture of the understudies was carried out amid the test inquire about work carried out in a few stages:

- To the organizational-preparatory stage was carried out mass conclusion, distinguish the highlights of arrangement of legitimate culture of understudies;

- At the organizational and down to earth stage-testing of academic conditions for the instruction of legal culture by implies of the discourse instructive circumstance.

The formative experiment consisted of 3 stages: indicative, process-activity, and performance-evaluation. Within the exploratory bunch, the emphasis was placed on the utilize of speech instructive circumstances within the execution of the selected pedagogical conditions for the instruction of lawful culture. At the indicative stage, work was carried out with the teaching staff on this problem.

To determine the changes in the indicators of the legal culture of the student by means of the discourse instructive circumstance, the emerging perception in recent times and after the trial was compared. At the middle stages of the exploratory look work, we conducted a number of cross-sections to decide the flow of individual markers in each of the criteria (motivational-value, cognitive, activity).

Before analyzing the test information, we are going to center on the factual criteria and pointers that we utilized within the course of the test work.

The quantitative evaluation of the results of educational exploration carried out by the proportion strategy, that's, by the rate of understudies who are at a certain level of lawful culture arrangement at the starting and the end of the experiment. To trace the dynamics of the exploratory look work, we utilized the taking after pointers of the energetic arrangement:

- the normal marker (Av), reflecting the quantitative appraisal of the growth of the level of instruction of the legitimate culture of the understudy, which was calculated using the equation (1):

$$Av = \frac{a+2b+3c}{100}, \qquad (1)$$

where a, b, c is the rate of understudies who are, separately, at a low, sufficient and tall level of instruction of the lawful culture.

- The pointer of outright development (G), reflecting the distinction between the initial and last values of the level (or a partitioned model) of the legitimate culture of students, which is calculated by the equation (2):

$$G = V_f - V_i, \, (2)$$

where V_i — the initial value of the indicator; V_f — the final value of the indicator;

The efficiency factor of the experimental method is determined by the formula (3):

$$K_{ef} = Av(e)/Av(c) \, (3)$$

where $Av(e)$ — the esteem of the normal marker of the test bunch;

$Av(c)$ — the esteem of the normal pointer of the control gather.

Assessment of the subjective development of the level of instruction of legitimate culture of understudies of the test gather at the final stage of the experiment relative to baseline and relative the level of instruction of legitimate culture of understudies in the control bunch can be carried out utilizing strategies of numerical insights.

To analyze the results about of the think about, the strategy of the "chi-square" criterion was utilized. Since there are levels at which there were less than five understudies, we combined the levels, and the model X^2 was calculated utilizing the equation (4):

$$X^2 = \frac{1}{N_1 N_2} \sum \frac{(N_2 O_{1i} - N_1 O_{2i})^2}{(O_{1i} + O_{2i})} \, (4)$$

Where N_1 – number of understudies within the test group; N_2 – number of understudies within the control group; O_{1i}, O_{2i} – the number of understudies of the exploratory and control bunches, individually, who are at the 1st level of instruction of the legitimate culture.

The results of the cross-section at the beginning of the experiment, displayed in Table 3, show that there were no critical contrasts within the test and control bunches for the chosen

markers sometime recently in the academic test. This is evidenced, in specific, by the values of the normal pointers (Av) according to the criteria (motivational-value – 1.80 % in the experimental and 1.76 % in the control; cognitive – 1.58 % and 1.6 %; activity – 1.60 % and 1.55 %).

Table 3. Comparative data at the starting of the test (in % of the whole number of students)

Criteria	Level	E group		C group	
		Number	%	Number	%
Motivational-valueapproach	high	8	20,0	8	20,0
	sufficient	27	67,5	24	60,0
	low	5	12,5	8	20,0
	Av	2,08		2,0	
Cognitive	high	3	7,5	4	10,0
	sufficient	13	32,5	11	27,5
	low	24	60,0	25	62,5
	Av	1,5		1,48	
Activitylevel	high	4	10,0	3	7,5
	sufficient	14	35,0	13	32,5
	low	22	55,0	24	60,0
	Av	1,55		1,48	

Since within the think about we were managing with a random sample of observables, we can accept that within the common populace, the proportion of the recognized levels is displayed comparably. This permitted us to consider the test of the control groups identical to the test of the experimental bunches at the comparing organize of the explore with a better degree of certainty, and within the future, when calculating the chi-square basis, to acknowledge a 5 % level of centrality.

The results of diagnostics of the levels of education of the legal culture of students according to motivational-value, cognitive, and activity criteria during the generalizing stage of the test are displayed in Table 4.

Table 4. Comparative information at the conclusion of the experiment
(in % of the overall number of students)

Criteria	Level	E group		C group	
		Number	%	Number	%
Motivational-value approach	high	15	37,5	8	20,0
	sufficient	22	55,0	28	70,0
	low	3	7,5	4	10,0
	Av	2,3		2,1	
Cognitive	high	13	32,5	7	17,5
	sufficient	21	52,5	21	52,5
	low	6	15,0	12	30,0
	Av	2,18		1,53	
Activity level	high	11	27,5	5	12,5
	sufficient	20	50,0	17	42,5
	low	9	22,5	18	45,0
	Av	2,05		1,68	

After the test look work, the normal values for each basis expanded in both the test and control bunches. Be that as it may, the changes within the exploratory bunch are much more prominent. In this way, concurring to the motivational esteem to the criterion of the normal within the exploratory bunch expanded by 1.1 times, and in control – 1.05 times, cognitive experimental – 1.45 times, in the control of 1.03 times, activity – 1.32 times the experimental eve 1.13 times the control.

During the formative experiment, the level of education of the motivational and value component of the legal culture of the students of the exploratory bunch altogether changed.

The examination of the gotten comes about appears that the number of understudies of the experimental group who are at a high level of instruction of the legal culture concurring to the motivational-value measure expanded by 17.5 %. The number of understudies who are at an adequate level of instruction and lawful culture has diminished by 12.5 %. The number of understudies who are at a moo level of instruction within the legal culture has decreased by 5 %. Within the control gather, the number of understudies with a tall level of lawful culture, concurring with the motivational esteem model, remained the same. The number of understudies who are at an adequate level, expanded by 10 %, and the moo was 10 % less.

The number of students within the test bunch appearing with a tall level of lawful culture concurring to the motivational-value measure expanded almost 2 times, whereas within the control gather this pointer remained at the same level.

These comparisons confirm the positive impact of experimental research work on the development of students ' motivation, interest in legal activities, the arrangement of the capacity to differentiate values and to consciously treat legal knowledge as a value.

During the generalizing stage of the experimental search work, the positive elements of the level of arrangement of the legal culture of understudies within the test bunch in comparison with the control bunch were uncovered, which is reflected in Table 5.

Table 5. Elements of the lawful culture of understudies within the course of test research work

Group		Levels			
		high	Sufficient	Low	Av
EG (beg.)	Number	5	18	17	1,71
	%	12,5	45,0	42,5	
EG (fin.)	Number	13	21	6	2,18
	%	32,5	52,5	15,0	
CG (beg.)	Number	5	16	19	1,65
	%	12,5	40,0	47,5	
CG (fin.)	Number	7	22	11	1,77
	%	17,5	55,0	27,5	

According to the test results, the number of understudies in the experimental group with a low level of law and order decreased by 27.5 % compared to 15.8 % in the control group. The indicator of a tall level of lawful culture within the experimental bunch by the conclusion of the test expanded by 20.0 %; within the control group-by 4.17 %.

In the test think about, we tried the theory utilizing the factual basis "chi-square" by Pearson, the utilization of which permits us to check whether there are noteworthy contrasts, changes within the levels of the control and exploratory bunches, and what are the causes of these changes. Invalid theory – the level of legitimate culture of understudies is the same within the control and test bunches. Elective speculation – level of legitimate culture shifts among understudies of control and test groups.

The contrasts between the test and control bunches at the start of the exploration were not factually noteworthy ($X^2obs < X^2crit$, X^2crit = 5.991) at a 5 % noteworthiness level. Checking the unwavering quality of the differences in the results in the experimental and control groups at the end of the test look work appears that within the experimental group $X^2obs > X^2crit$ at a 5 % level of significance (X^2obs = 6.021).

Thus, it can be argued that the alternative hypothesis H_i is valid, that is, changes in the levels of education of the legal culture of the experimental group are not caused by random reasons, and are the result of the execution of the chosen set of pedagogical conditions.

The results of the test investigation work allow us reason to accept that the complex pedagogical conditions contributes to the effective education of the legal culture of students utilizing speech educational situations.

By preparing teachers to use the opportunities of speech educational situations, presenting imaginative shapes of lawful instruction that invigorate positive thought processes and dynamic lawful action of the understudy, utilizing compassionate innovations that guarantee the arrangement of the student's subjective position within the preparation of tackling discourse educational situations, we oversaw to extend the level of instruction of the student's lawful culture.

4. Discussion

The study of psychological and pedagogical literature allows us to state the absence of special studies devoted to the problem of legitimate culture within the conditions of real practical pedagogical activity. In the published monographs of a generalizing nature, legal culture is presented as a phenomenon of a subjective order. The legal ideology includes legal culture (Tomyuk et al., 2020); as a system of views, beliefs, assessments, and attitudes that express the attitude of members of society to the law, the law, considers legal culture (Sergeeva et al., 2019a); the subjective factor, the legal manifestation of the ideological order, includes the legal culture (Kerimov et al., 2020). The impediment of such approaches and definitions, in our conclusion, is that, eventually, this leads to the distinguishing proof of legitimate culture and lawful awareness, since the previous is considered as one of the shapes of open awareness. Lawful culture is displayed in a limited frame, and both of these concepts eventually cruel the same thing. It ought to not be overlooked that legitimate awareness is as it were one of the components of legitimate culture. At the same time, the research study shows that lawful culture may be a subjectively wealthy lawful awareness, an otherworldly air, and a legitimate climate that wins in a given society. It is troublesome to concur with this supposition since it is more verse than a logical definition of the concept.

5. Conclusion

The study identifies the pedagogical possibilities of discourse instructive circumstance within the education of legal culture of the student, which is in its impact on the arrangement of a subject position of the understudy within the course of acing the discourse abilities of perception, expression and interaction; within the usage of the Dialogic nature of the method of instruction (exchange with the instructor, writing, other); in mainstreaming the utilize of compassionate advances (self-presentation, case consider, talk, and methods of developing critical thinking); in a positive impact on the arrangement of value-legal orientations and inspiration of dynamic lawful movement of the student.

The results of experimental work carried out on the basis of higher educational institutions of the Turkestan locale, permitted us to discover the expanded level of instruction of legitimate culture of understudies, affirming to their information of the law; on the lawful arrangement of esteem introductions; the advancement of abilities legitimate behavior in culture project environment of the College. The positive elements of the lawful culture of the understudies of the test bunch demonstrate the viability of the actualized academic conditions, which affirms the theory of the study.

The conducted investigation does not debilitate the issues of legitimate cultural instruction. Promising regions for assisting logical investigation can be the advancement of a viable innovation for teaching the lawful culture of schoolchildren, the definition of inventive shapes of interaction between the education of control, law, and education in arrange to decide the vital prospects for teaching the lawful culture of youthful people.

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Pupils' Mathematics Achievements: Is There a Difference When Taught By a Female Teacher or a Male Teacher?

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Abstract

Inclusive and high-quality education must provide equal opportunities for all pupils to learn leaving no child behind. Different studies show that secondary education is an area where boys are disadvantaged and also that young people, especially girls, are not enthusiastic about learning the exact sciences at school. There are many and various factors (individual personal, social, and cultural, school context) that determine pupil gender differences in mathematics achievements. Recognizing the impact of all these factors on pupil learning and achievement, this research focuses on clarifying how mathematics achievements of pupils (girls and boys) are related to the activities of teachers of different genders (female or male). The research includes data on 47581 learners and their 594 mathematics teachers, who were selected from forms 5-10 (basic school) and forms I-IV (secondary school) in 179 Lithuanian schools during the period 2012-2021. The results of the study suggest that in the surveyed sample of Lithuanian schools the majority of teachers teaching mathematics are women and the achievements of girls in mathematics are higher than those of boys in all primary and secondary school classes, except for classes 5 and 7. However, the differences in the work of female and male teachers are very small and the achievements of pupils (girls and boys) in mathematics are not related to gender-determined activity characteristics of teachers. The presented regression model of mathematics achievement of pupils (girls and boys) hardly differs from the actual results, which means that all the presented coefficients of the characteristics of the teacher's work affect the work of teachers (irrespective of their gender) and, accordingly, the pupils' mathematics achievements.

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1. Introduction

The goals of the 2030 Agenda for Sustainable Development aim to ensure the most favourable educational conditions for all schoolchildren and to ensure that no one is left behind (UN System CEB, 2017). To ensure inclusive and equitable quality education for all pupils and to promote their lifelong learning opportunities, attention is also focused on the learning outcomes of girls and boys and the factors that affect them. The Executive Summary "Leave No Child Behind: The Global Report on Boys' Disengagement from Education" announced by UNESCO in 2022 provides an overview of qualitative and quantitative data from more than 140 countries, which shows that in most countries boys are at increased risk than girls of repeating classes, failing to complete various levels of education and achieving poorer school performance (UNESCO, 2022). A tendency is observed that secondary education is where disadvantage of boys is most prevalent. On the other hand, the study ROSE ("The Relevance of Science Education") (Sjøberg, Schreiner, 2019) published in 2019 shows that young people, particularly girls, are not enthusiastic about learning the exact sciences at school. Therefore, it is important to analyse the process of girls' learning the study subjects of STEAM (science, technology, engineering, the arts, and mathematics).

Numerous research studies indicate that girls learn better at school compared to boys (Ullah, Ullah, 2019; Workman, Heyder, 2020; Alghamdi et al., 2020) and it is also obvious that women prevail in teaching profession (Fulard, 2020). According to Holmlund and Sund (Holmlund, Sund 2008), theoretically such a possible causal relationship (higher results for girls due to a higher number of female teachers) can be explained employing two hypotheses. Firstly, teachers may be more favourable to pupils who are more similar to themselves and, consequently, evaluate them better. Secondly, teachers can be role models for schoolchildren, so having a teacher of the same gender can also affect pupil effort as well as their performance. However, these researchers also acknowledge (Holmlund, Sund, 2008) that the results of the research cannot provide a clear answer to whether there is a causal relationship between the same gender teacher and pupil achievement because it may be affected by various factors (pupil age and abilities, differences in the selection of teachers for various subjects, peculiarities of dividing pupils into classes, etc.).

Nevertheless, studies reveal that the same-gender teachers may serve as better role models for their pupils (Farland-Smith, 2014). Thus, more female STEM (science, technology, engineering, and mathematics) teachers are needed (Dulce-Salcedo et al., 2022). Löwe and colleagues (Löwe et al., 2022) claim that the gender of the teacher is an important factor and girls respond more strongly than boys to the same-gender role models. Their research results show that girls, who are taught by a female teacher of mathematics in class 10, are significantly more likely to choose mathematics as an advanced course in a secondary school compared to their peers taught by a male teacher. The results obtained during the research conducted by Lim and Meer (Lim, Meer, 2020) disclose a similar tendency that a female teacher of mathematics in class 7 increases the likelihood that schoolgirls will attend a STEM-focused secondary school, take advanced mathematics courses, and pursue a degree in STEM.

Following the results of their research, Andersen and Reimer (Andersen, Reimer, 2019) state that assigning pupils to the same-gender teacher significantly improved pupil achievement. Moreover, when Korean secondary schoolchildren were randomly assigned to classes, girls performed significantly better on standardized tests when taught by female teachers, while this effect was moderate on male students (Lim, Meer, 2017). However, results from other researcher show the opposite. For example, Krämer and colleagues (Krämer et al., 2016) point out that a member of the opposite gender in education is useful for girls. Their performance and effort are significantly better when they interact with a teacher of the opposite gender who were responsive. Other researchers (Winters et al., 2013) do not identify any statistically significant correlation between assignment of the same-gender teacher and pupil achievements in mathematics and or reading at primary school but they point out such statistically significant relationships at a secondary school or higher, although their impact (the teacher's gender and pupil achievements) is moderate. Bottia, Stearns, Mickelson, Moller and Valentinoc (Bottia et al., 2015) claim that the proportion of female mathematics and science teachers at school has no impact on schoolboys but has a significant effect on girls' learning and future studies in STEM programmes.

Although, as mentioned earlier, few girls are interested in studying science, technology, engineering or mathematics (Bottia et al., 2015), researchers also conduct surveys on the study process of girls in terms of the lecturer's gender (female or male). According to Price (Price, 2010), female students are less likely to remain students when more STEM courses are taught by female lecturers. The data of other researchers (Canaan, Mouganie, 2021) reveal that if a scientific advisor in the first year of studies at college is a woman and not a man, the girls are significantly more likely to enrol in and complete STEM studies. And although the gender match between teachers and schoolchildren usually does not affect the choice of major and courses, it can be seen that students receive better marks in courses, which are taught by the same gender lecturers in the fields, which are traditionally dominated by the representatives of the opposite gender, for example, STEM (Griffith, 2014).

Another very important aspect to be mentioned when analysing the relationship between pupils' achievements in mathematics and the gender of the teacher is the age of the learner. Around the age of 11-13, schoolgirls begin to understand and apply gender stereotypes and at this developmental period, according to Ambady, Shih and Kim (Ambady et al., 2001), differences in mathematics performance between girls and boys begin to emerge, and mathematics begins to be considered the domain of the latter. The studies of other researchers (Galton et al., 2003) also disclose that schoolchildren's attitude towards mathematics becomes more negative after transition from the primary to the secondary school. A tendency emerges that girls under 11 years old like mathematics more than boys but at the age of 15 the situation changes and the girls point out that they like this study subject less (Bevan, 2001; Prendergast, O'Donoghue, 2014). The transition from elementary to secondary mathematics appears to be a potential time when schoolchildren, especially girls, develop more negative attitudes towards mathematics. Therefore, particular attention should be paid to identifying educational policies and practices that help mitigate the emergence of negative attitudes towards mathematics at this critical stage of children education.

It is clear that the factors that determine the gender differences in mathematics achievement of pupils are numerous and diverse. Following Cascella, Giberti and Bolondi (Cascella et al., 2020), they can be referred to as individual personal factors (e.g. biological differences), social and cultural, as well as school context-related factors, for example, syllabus, teaching practice in the classroom, methods of assessment (Leder, Forgasz, 2008). Finally, it appears that male and female teachers perceive and evaluate schoolboys and schoolgirls differently (Andersen, Reimer, 2019). Recognizing the influence of all these factors on the learning process of schoolchildren, in this article focuses on pupils' mathematics achievements as the object of research and aims to explain how mathematics achievements girls and boys are related to the activities of the teacher (female or male).

2. Methodology

The total sample of research data. The records of Lithuanian schools in the electronic diary information system "ManoDienynas" (translation "My Diary") and covering the academic years from 2012 to 2021 were chosen for the presented research. Such information allows for identifying the class, the study subject and schoolchildren that learn it and associating the teacher with a study subject and a certain class. The data in the electronic diary are continuously collected, so it is possible to compare the activities of teachers and the progress of pupils in learning. The data of the diary also allows identifying demographic characteristics of teachers and schoolchildren (gender and age).

The target sample of the research. The target database was formed that included schoolchildren who received marks in mathematics in the academic years from 2012 to 2021. The analysis did not include the learners, who were in the system but did not receive any marks. Thus, in total 47581 learners and 594 mathematics teachers working with them, were selected from classes 5-10 (basic school) and classes I-IV (secondary school) from 179 Lithuanian schools.

Missing data are rare but they were identified in the compiled base. The records, where the gender of the teacher was unfamiliar, were excluded from the database together with all the related information, i.e., the data on the school, class and study subject. Thus, 1.9 % of records were deleted and more than 4.1 million records remained in the filtered database. The detailed information on the analysed data is presented below (Table 1).

Table 1. The number of records analysed in the school years from 2012 to 2021

School year	Homework Create	Late ForClass	Marks	Message	Missed lessons
2012/13	9527871	81325	5882139	2666466	2351160
2013/14	9673692	80120	5800506	3329226	2364990
2014/15	12781272	75100	5681527	4016788	2310040
2015/16	20864641	77335	5464680	6414585	2096165
2016/17	20736730	74820	4859699	6727092	2341115
2017/18	23482960	78420	6362220	6613208	2494505
2018/19	26431623	84192	6439815	7307495	2410915
2019/20	32413130	64086	6432300	14316630	1646755
2020/21	34615110	84246	8098260	14876944	1003275

Notes:
LateForClass – being late for school
Marks – all the marks presented in the electronic diary
Message – a text message in the electronic diary (comments and complements)
Missed lessons – lessons missed by schoolchildren
HomeworkCreate – homework assignments presented in the electronic diary by the teacher

The research ethics. It is noteworthy that the basic principles of research ethics were followed during the research. The researchers received depersonalised data of electronic diary, which means that there was no access to specific data of schools or individual persons (teachers, pupils, parents) such as names, surnames or other indicators that refer to the identity of institutions or persons were not available. Before conducting the research, new unique numbers for each teacher, pupil or parent were randomly generated in the database to identify the data.

Methods. Following *researchers* (Winters et al., 2013; Hwang, Fitzpatrick, 2021) we used pupil fixed effects and ran separate analytic model by gender to investigate the links between pupil–teacher gender matching and pupil achievement. To analyse the effect of teacher-pupil gender interaction, estimate the following linear regression equation was estimated:

$Mean\_mark_{ptgy} = \beta 0 + \beta 1(Pupil\_Gender_{ptgy}) + \beta 2 className_{ptgy} + \beta 3$ Number of pupil's $actions_{ptgy} + Nmarks_{ptgy} + \beta 5 Mean(Simple)_{ptgy} + \beta 6 Mean(Test)_{ptgy} + \beta 7 Mean(Independ)_{ptgy} + \beta 8 N\_good\_message_{ptgy} + \beta 9 N\_bad\_message_{ptgy} + \beta 10 L\_attendance_{ptgy} + \beta 11$ Number of teacher's $actions_{ptgy} + qt(1)$

Meanings of abbreviations used in the equation:
- $Mean\_mark_{pmgt}$ is the study success (achievement) of pupil p, assigned to teacher m at school class (classes: 5,6,7,8, 9(I),10(II), III, IV) g, in year t.
- $\beta 0$—intercept in the equation.
- $Pupil\_Gender_p$ indicates the pupils' p gender (girl = 1, boy = 2). This model was calculated separately by teacher gender.
- $\beta 1$ indicates the impact to which pupils of a definite gender learn better when they are assigned to a female teacher or to a male teacher.
- $Class\_Name_{pmg(t-n)}$ –the class g of the pupil p, assigned to teacher m, in year *(t-n)*.
- $\beta 2$ indicates pupil's class effects.
- Number of pupil's $actions_{pmg(t-n)}$ – number of pupil's p actions to teacher m, at school class g, in year *(t-n)*.
- $\beta 3$ – indicates the effect of the number of actions in the e-diary on study success.
- $N\_marks_{pmg(t-n)}$ – number of marks which was received by pupil p, assigned to teacher m, at school class g, in year *(t-n)*.
- $\beta 4$ – indicates the effect of the number of marks in the e-diary on the final study success.
- Mean(class work)$_{pmg(t-n)}$ – average mark of classwork and homework of the pupil p, assigned to teacher m, at school class g, in year *(t-n)*.
- $\beta 5$ indicates the effect of the average mark of classwork and homework on the study success.
- Mean(independent work)$_{pmg(t-n)}$ – average mark of independent work of pupil p, assigned to teacher m, at school class g, in year *(t-n)*.

- β6 indicates the impact of the average mark of independent work on the study success.
- Mean(test work) $_{pmg(t-n)}$ – average test mark for pupil *p,* assigned to teacher *m,* at school class *g,* in year *(t-n).*
- β7 indicates the impact of the average mark for tests on the final study success.
- N_good_message $_{pmg(t-n)}$ – number of text message of positive character received by the pupil p or pupil's parent from the teacher m, at school class g, in year (t-n).
- β8 – Indicates the impact of the number of positive text message on the study success.
- N_bad_message $_{pmg(t-n)}$ – number of text message of negative character received by the pupil p from the teacher m, at school class g, in year (t-n).
- β9 – Indicates the impact of number of text message of negative character on the study success.
- L_attendance $_{pmg(t-n)}$ – pupil's p attendance to the class to teacher m, at school class g, in year (t-n).
- β10 – indicates the impact of pupil attendance on his/her final study success.
- Number of teacher's actions $_{pmg(t-n)}$ – the number of actions of the teacher m (neutral text messages to the pupil m and the pupil's m parents, assigned tasks, number of file downloads) to the pupil p, at school class g, in year (t-n).
- β 11 – indicates the impact of teacher's m actions on the final study success.
- qt – random error of regression model in year t.

In order to increase the accuracy of the model and reduce the error due to the different dimensionality of the indicators, all data were normalized before presentation (Min-max normalization was applied).

3. Results
Firstly, before seeking to understand how mathematics achievements of pupils (girls and boys) are related to the (female or male) teacher's activities, the general job characteristics of female teachers in Lithuanian schools were analysed. The results of the research are presented in Figure 1.
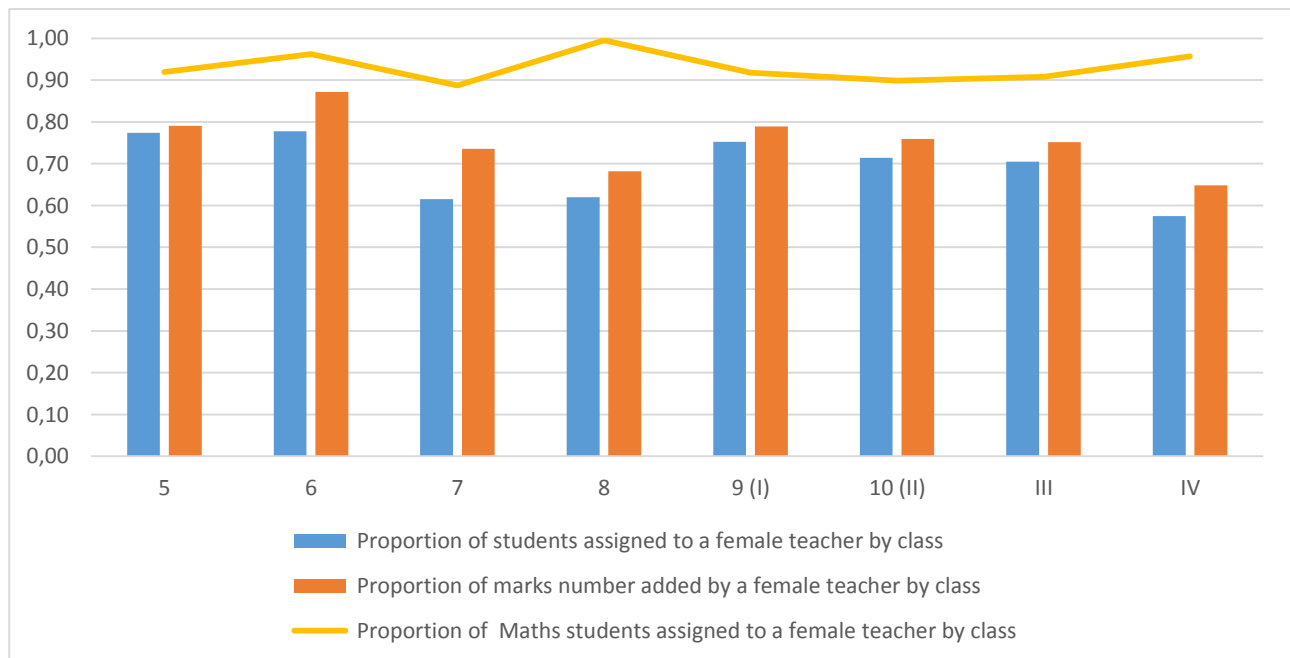
Fig. 1. General characteristics of female teacher of different subjects

The obtained research data allow stating that female teachers prevail in teaching of all study subjects in a Lithuanian school. Most of them work in junior classes (5 and 6), respectively, 77 % and the 78 %, and fewest female teachers are observed in classes 7 and 8 (respectively, 62 % in each) and in the most senior class of a secondary school (class IV) – 57 %. The same regularity can

be observed in the number of marks received by pupils. The highest number of marks is written by women teachers in the first classes of a basic school, i.e., 79 % in class 5 and 87 % in class 6, and the least number of marks is written in class IV (65 %). The analysis of data related to mathematics showed that this study subject is taught almost only by women in all classes. For example, 92 % of pupils in class 5, 96 % of pupils in class 6, 99 % in class 8 and 96 % of pupils in class IV are taught by female teachers of mathematics.

The results received after the analysis of pupils' achievements in mathematics (Figure 2) revealed that higher marks are characteristic of younger schoolchildren (classes 5-8), whereas marks in senior classes (9(I), 10(II), III and IV) are lower among both boys and girls. Girls do best in mathematics in classes 5 and 6, whereas boys receive best marks in classes 5 and 7. It should be noted that boys demonstrate the lowest marks in class 10 (II). It can also be seen that in the sample of Lithuanian pupils, mathematics achievements among girls are higher than those of boys, except in classes 5 and 7.
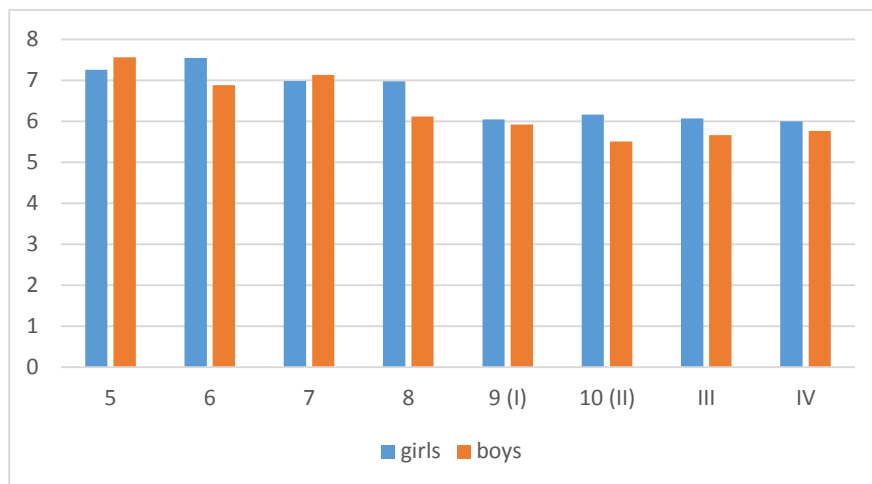
Fig. 2. Comparison of pupils' achievements in mathematics (girls and boys)

Correlation analysis was also carried out focusing on relationships between various work characteristics of mathematics teachers (woman and men) (e.g., number of marks, number of praises, number of negative remarks, mean of marks, etc.), which can have influence on the study success of pupils. The obtained research results are available in Figure 3.

The obtained research results allow stating that the more senior the class, the lower is the mean mark in mathematics received from teachers of both genders. The received correlation relationships are negative and their values are -0.308 (taught by female teachers) and -0.301 (taught by male teachers). It was also found that in senior classes, female and male teachers of both genders write more remarks to schoolchildren, but the number of marks varies. As can be seen from the results of the correlation analysis, female teachers write fewer marks in the senior classes (coefficient value -0.291), while a different tendency is observed among male teachers, as they tend to write more marks (coefficient value -0.132).

The total mean of pupils' marks correlates with the daily received mark in mathematics (the values of correlation coefficient are equal to 0.534 (female teachers) and 0.415 (male teachers), also with test marks (respectively – 0.322 (female teachers) and 0.44 (male teachers) and marks of independent work (respectively – 0.281 (female teachers) and 0.434 (male teachers). It should be noted that pupils' marks of independent work very strongly correlate with their test marks. The value of the correlation coefficient of these variables is equal to 0.654 when taught by female teachers and to 0.786 when taught by male teachers. This proves that improving marks of pupils' independent work result in better test marks. Analysing the statistically significant work characteristics of teachers of different genders, it was established that in the senior classes, teachers of both genders write fewer marks for independent work, but women write them statistically significantly less frequently than men ($p = 0.013$). There is also a significant difference in the correlations between the number of good messages written by male and female teachers and the

mean of pupils' independent work marks (p = 0.048). Weaker correlation was received between the increasing number of praises in the e-diary and higher marks for independent work was identified when taught by female teachers compared to male teachers. The same tendency was observed while searching for correlation between the test marks and negative remarks. Statistically significant difference was observed between teachers of different genders (p = 0.001). Weaker correlation relationship was received regarding the statement that the increasing number of negative remarks may lead to lower test marks when taught by female teachers compared to male teachers.

Female teachers   Male teachers
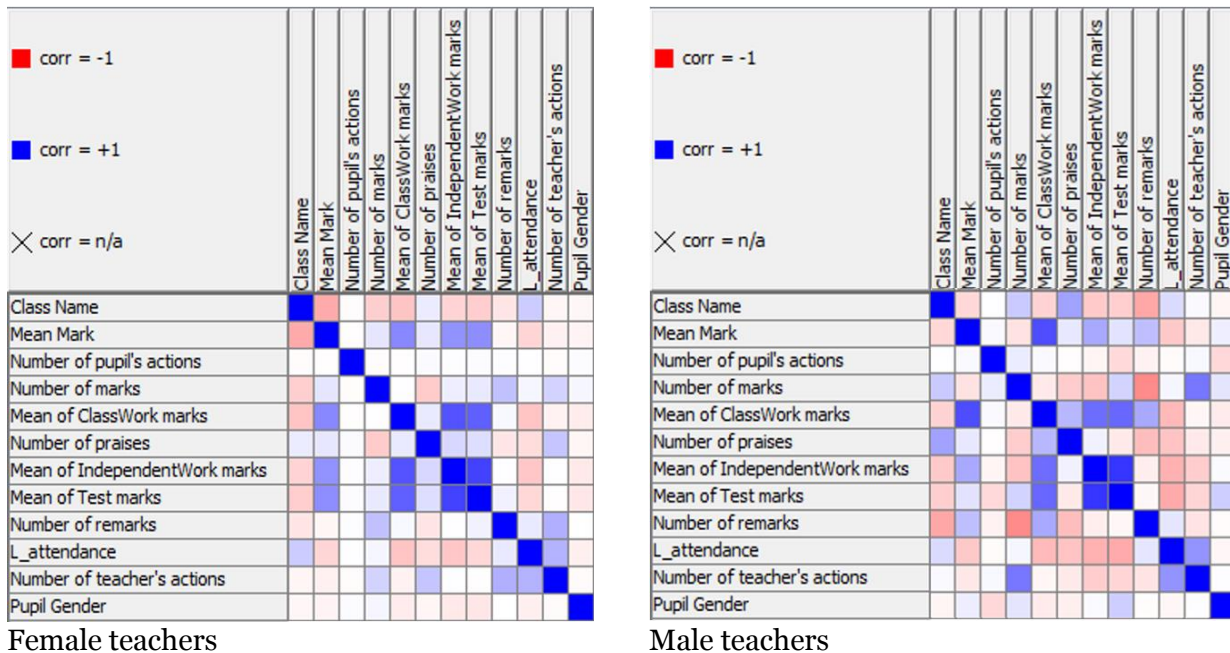
Fig. 3. Correlation relationships of various work characteristics comparing mathematics teachers (female teachers and male teachers)

Table 2. The impact of different factors of both gender teachers on pupils' learning success in the regression model

	Girls		Boys	
	Teachers (women)	Teachers (men)	Teachers (women)	Teachers (men)
Class Name	-0.213	-0.068	-0.213	-0.107
Number of pupil's actions	0.013	0.309	0.006	0.128
Nmarks	0.229	-0.2174	0	0.25
Mean(Simple)	0.679	0.69	0.02286	0.13
N_good_message	0.263	-0.114	0.068	0.14
Mean(Test)	0.474	-0.151	0.047	-0.149
Mean(Independent)	0.817	-0.261	0.082	0.01
N_bad_message	0.012	0.352	0.052	0
L_attendance	0.0054	-0.0228	0.005	0.04
Number of teacher's actions	-0.023	0.0179	0.002	-0.05
Pupil_gender	0.118	0.1804	0.037	0.179

Finally, a regression model of pupils' mathematics achievements (girls and boys) was designed. Table 2 provides the main findings of the regression model described in the equation (in the methodological part of the article).

Thus, boys tend to learn much better when taught by a male teacher. However, the extent of the impact of male teachers is not great and ranges from 0.01 to 0.019 standard deviation. Moreover, male teachers have greater influence on study success of boys and girls (although the difference is not significant). At the same time, women teachers have bigger influence on girls and almost no impact on boys taught by women is observed.

Comparison of behaviour between schoolboys and schoolgirls reveals insignificant differences. The coefficients of activity in the electronic diary of pupils of different genders taught by female teachers are as follows: 0.014 SD of girls compared to 0.018 SD of boys. Teaching pupils of both genders, the coefficient of activity in the e-diary of female teachers is 0.02 SD compared to that of 0.034 SD of male teachers.

The accuracy of the designed model was also validated. While designing the model, the database was divided into two parts: teaching (80 %) and testing (20 %). A validation sample was used to create the comparison between the predicted pupil marks and the actual marks presented in Figure 4.

Girls math_prediction   Boys math_prediction
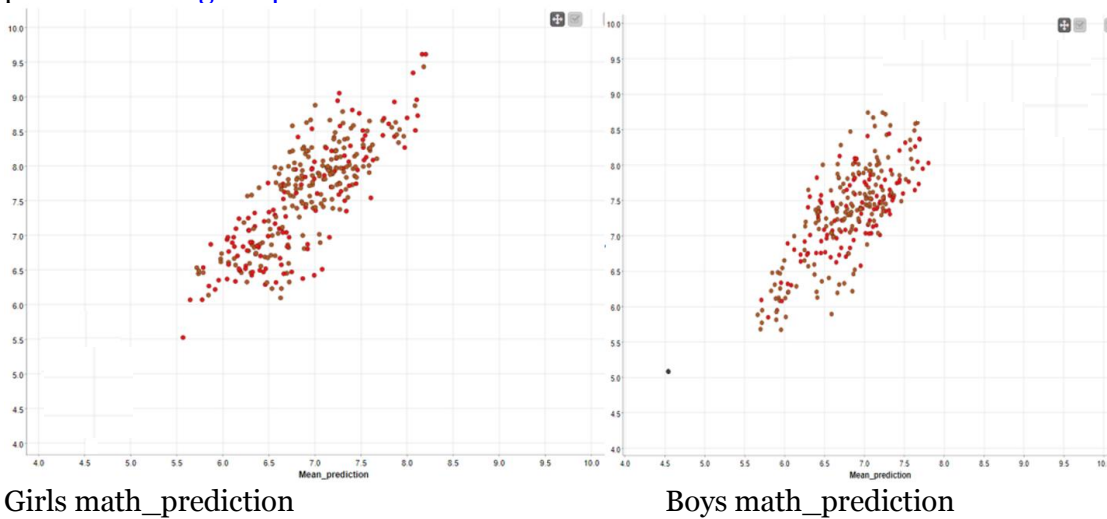
Fig. 4. Comparison between the predicted marks of pupils and their actual marks (brown colour – forecast, red – actual, real data)

It should be noted that the results presented in Figure 4 are grouped by classes. The mean value of pupil's mark was taken as a normalised value, therefore, the model output is not an accurate reflection of the mean of marks but a normalised value. Exceptional values (non-typical pupils) were also filtered out.

The prediction accuracy equals 96.2 % and the mean error is 0.398. Such research results imply high reliability. Table 3 contains the characteristics of the accuracy of the model.

Table 3. The characteristics of the model accuracy

	Girls	Boys
R^2	0.038	0.033
mean absolute error	0.398	0.383
mean squared error	0.318	0.178
root mean squared error	0.364	0.322
mean signed difference	-0.075	-0.075

4. Discussion

The results obtained from the study suggest some differences between the work of female and male teachers in mathematics. In senior classes, male teachers write more marks compared to female teachers. Moreover, there is a higher probability that when taught by male teachers, the increasing number of praises in the e-diary will lead to higher marks for independent works and the increasing

number of negative comments in the e-diary will result in a drop in test marks. However, the identified differences in the work of teachers of opposite genders are minor, and the obtained results disclose that mathematics achievements of different gender pupils (boys and girls) are not related to activities of teachers in terms of their gender (female and male). This confirms the data of other researchers that there is no single answer to the question of whether there exists a causative relationship between the gender of a teacher and pupil achievements (Holmlund, Sund, 2008).

Our findings also reject the prevailing stereotype that boys do better in mathematics than girls. In the surveyed sample of Lithuanian pupils most teachers teaching mathematics are women and the achievements of girls in mathematics are higher than those of boys in all primary and secondary school classes, except for classes 5 and 7. In fact, many studies have found no gender differences in solving various simple mathematics problems, such as addition and subtraction or quantitative comparison of numbers (Hutchison et al., 2019). According to researchers (Duckworth, Seligman, 2006; Hyde et al., 2008), girls typically get higher marks than boys in mathematics lessons and take the same or even more complex tests in line with school curricula, such as state-standard mathematics tests. Some studies show that girls get better marks in mathematics than boys because the former are more self-disciplined when it comes to completing various school tasks (Duckworth, Seligman, 2006). Perhaps this diligence on the part of the girls can help them get good marks and perform well on curriculum-based tests. Consequently, both parents and teachers can help children be more successful in mathematics lessons by encouraging both boys and girls to do mathematics problems consistently and honestly both at home and in the classroom. With the success of the tasks performed, children's engagement and interest in mathematics increases, which leads to successful learning of mathematics.

On the other hand, it should be admitted that there are also studies that show higher achievements in mathematics among boys. For example, Geary et al. (Geary et al., 2021) state that the better mathematics achievements of boys are predetermined by their visual spatial abilities. Namely, in mathematics, the superior visual-spatial skills of the boys compensate for lower levels of their classroom engagement. Spatial imagination/visualization skills are plastic and have been shown to be related to spatial games (for example, building blocks for young children, various kinds of visual-spatial games for elder children). It is observed that boys play such games more frequently than girls (Terlecki, Newcombe, 2005; Cherney, London, 2006). Therefore, encouraging all children to play spatial games or to participate in various activities that involve spatial rotation of objects could facilitate the development of better mathematical abilities of girls and boys. Bleske-Rechek, Browne (2014), Miller, Halpern (2014) also point out that boys perform better at high-level/more complex standardized tests such as SAT, ACT and GRE, which assess mathematical skills that are less closely related to what is taught in the classroom. However, it should be noted that the differences in the results of the mathematics test between girls and boys are small and appear to decrease even more (Wai et al., 2010; Miller, Halpern, 2014). The gender gap in mathematics is decreasing in countries with a culture of gender equality (Guiso et al., 2008). Obviously, certain stereotypes limit girls' choices to learn, e.g., the research conducted by Carlana (2019) showed that teachers with more implicit gender stereotypes about girls' ability to do mathematics tasks advise them to choose less math-intensive subjects and girls taught by such teachers tend to show lower level of self-confidence. Thus, abandoning stereotypes should be one of the objectives of teachers.

Finally, the regression model for mathematics achievement of pupils (girls and boys) almost coincides with the actual results, which shows that all the coefficients of teacher work characteristics included into the formula have impact on teachers' work (irrespective of gender) and on mathematics achievements of pupils. It should be noted that the impact of teacher gender is low and ranges from 0.01 to 0.019 of standard deviation. It evidences that organisation of the learning process rather than the teacher's gender contributes to pupil achievements, that is, various characteristics of teacher work show which actions of teachers have influence on the learning success of pupils.

5. Conclusion

The results of the study suggest that in the surveyed sample of Lithuanian schools the majority of teachers teaching mathematics are women and the achievements of girls in mathematics are higher than those of boys in all primary and secondary school classes, except for classes 5 and 7. However, the differences in the work of female and male teachers are very small and the achievements of pupils (girls and boys) in mathematics are not related to gender-

determined activity characteristics of teachers. The presented regression model of mathematics achievement of pupils (girls and boys) hardly differs from the actual results, which means that all the presented coefficients of the characteristics of the teacher's work affect the work of teachers (irrespective of their gender) and, accordingly, the pupils' mathematics achievements.

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Identification of the Research Potential of Students in the Process of Revealing Integrative Connections of the Subject Content of Mathematical Courses

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Abstract

The existing array of scientific publications on modern methods, innovative forms and means of forming research abilities and skills solves this problem at the primary and secondary levels of education. The issues of identifying the research potential of students considered in the field of theory and methodology of vocational education (bachelor's degree), remain poorly studied. The purpose of the study is to develop and reveal the research potential of students in the process of teaching classical sections of mathematical science by defining a holistic integrative construct (using the example of a generalized function).

The assessment of the research potential of students in the process of revealing integrative connections of the subject content of mathematical courses was carried out on a sample of students of the 1-3 years of study in Applied Mathematics and Computer Science. The diagnostics was performed using the methodology of studying the research potential – the IP51 questionnaire (by N.V. Bordovskaya et al.). The empirical results of the study were analyzed using a set of mathematical and statistical methods (methods of descriptive statistics, Student's t-test).

The mechanisms of identifying the research potential in the process of revealing integrative connections of the subject content of mathematical courses are considered. The effectiveness of the inclusion of research tasks was proved by establishing significant differences in all components of the research potential between the control and experimental groups: in the cognitive component ($t = 16.11$, $p < 0.05$ and $p < 0.01$); in the motivational component ($t = 6.16$, $p < 0.05$ and $p < 0.01$ by behavioral component ($t = 11.64$, $p < 0.05$ and $p < 0.01$).

The results of the study have practical value, as they act as an effective mechanism for unlocking the research potential of students by setting special tasks to give integrity to the subject content of mathematical courses. The proposed research tasks for establishing integrative

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connections in the content of mathematical courses have not been previously considered in the educational and methodological literature.

Keywords: research potential, integrative connections, integrative construct, mathematical disciplines, generalized functions.

1. Introduction

The identification of the research potential and further development of scientific research skills is the main goal of education at the level of secondary general and higher education in Russia, the United States, Great Britain, China and other countries (NRC, 2012; NGSS, 2013). Most Russian and foreign educational programs, as well as scientific and methodological research are aimed at helping students to form and develop their "research skills and abilities" (Askarov, 2017; Smirnova, 2018; Stadnik, 2013), "research potential" (Bordovskaia, 2017; Gruzina, 2021; Gunkov, 2014), "scientific reasoning skills" (Keys, 1994; Zimmerman, 2000), "scientific thinking" (Dunbar, 2000) or "skills of practicing scientists" (Roberts, 2002). Many scientific publications are devoted to the development of research abilities and skills at primary and secondary levels of education (Smirnova, 2018; Stadnik, 2013; Dvoryatkina, 2021), and there is an extensive methodological base at the master's and graduate levels (Safina, 2021; Dvoryatkina, Merenkova, 2021; Dunbar, 2000; Zimmerman, 2000). However, the studied on the strengthening the scientific and research component of undergraduate education are extremely limited. The available works are mainly focused on the formation of research abilities and skills of future teachers (Apazaova, 2009; Askarov, 2017; Fedoseeva, 2020), and only certain studies – in the conditions of engineering and mathematical education (Alisultanova, 2020; Bushueva, 2018; Jinhong, 2021). Indeed, according to the regulatory educational documents of Russia and Europe, the skills of educational research and project activities are mandatory requirements for the learning outcomes within the main educational program (Order, 2012; NRC, 2012; NGSS, 2013) at master's and postgraduate levels being the most important link in higher education, which recorded the status of a leading center for scientific research. It is at this stage that the interests of students are accumulated in the field of research activities, and the student himself acts as a young researcher. At the same time, the priority targets of scientific research in the field of theory and methodology of professional education (bachelor's level) are the formation of professional competencies of future specialists within the framework of leading educational activities. However, combining with research activities, the educational process is increasingly transformed into real professional activity, which currently serves the basis for the development of a competitive specialist.

Despite the fact that the problem of identifying the research potential of students in pedagogical science is not new, the issues of its regulation were updated as part of the federal projects of the Science national project. There is a need to rethink the existing methodological experience to identify effective didactic mechanisms thus enhancing the research potential of students who would effectively work in the context of the transformation of modern education.

The purpose of the study is to develop and unlock the research potential of students in the process of teaching classical sections of mathematical science by defining a holistic integrative construct (using the example of a generalized function).

2. Materials and methods

We believe that the research potential of students is their readiness for targeted, motivated research activities that ensure the success of the process of searching, acquiring and understanding new information; characterized by individual psychological characteristics of a person as a subject of this type of activity. Previously, the following characteristics were attributed to personalized parameters of the research potential: (1) tolerance to uncertainty, (1) tolerance to novelty, (2) motivation for results, (3) motivation for self-realization, (4) intellectual-cognitive activity, (5) need for intellectual activity, (6) critical and convergent thinking, (7) divergent productivity, (8) organization, perseverance and responsibility, (9) self-assessment of personal growth, (10) creative independence, (11) creative self-development, (12) scientific communication and dialogue (Dvoryatkina, Merenkova, 2021). Thus, the structural components of the research potential of students at the university are motivational (parameters 1-3), cognitive (parameters 4-7) and behavioral components (parameters 8-12).

The hypothesis of the study is that the development and disclosure of the research potential of youth in the process of teaching mathematics will be ensured if:

- integrative connections are established by identifying an integral integrative construct in the subject content of mathematical courses based on the principles of fundamentality, interdisciplinary, foundation, systemogenetics, information richness of the educational environment;

- the idea of the integrity of the subject content of mathematical courses is revealed through the corresponding organization of the student's research activities.

Research object: students of the 1-3 years of study in Applied Mathematics and Computer Science. In particular, the study was conducted from 2012 to 2021and involved 60 students of the Institute of Mathematics of Natural Science and Technology of Bunin Yelets State University from 17 to 20 years old, which is explained by the duration and variety of mathematical training courses. The pairwise selection method was used to select the respondents: from the general population the control and experimental groups were selected by the identity of neutral and control characteristics, and by the similarity of factor characteristics. As a result of selection, the experimental and control groups were equilibrated, each group consisting of 30 people. These groups were formed from students of the same area of training in Applied Mathematics, but from different training profiles. The selection included the distribution of students by faculty, i.e. the method of mechanical (systematic) selection. In the control group the mathematical disciplines were taught using traditional teaching methods, in the experimental group – the methodology for teaching higher mathematics was based on the introduction of research tasks into the educational process to establish integrative connections. When the control and experimental groups were formed the key requirements were the requirements of representativeness and homogeneity, which is important for the statistical processing of study results. An experimental design was applied with preliminary and final testing of both groups, which well controls the background effect and the effect of natural development.

Research subject: factors and conditions for identifying the research potential of students in the process of revealing the integrative connections of the subject content of mathematical courses.

A set of experimental research methods was used in the experiment: questionnaires, testing, expert methods. The empirical results of the study were analyzed using a set of mathematical and statistical methods (methods of descriptive statistics, Student's t-test). Tables, charts and graphs were used to visualize the experimental data. The parameters of the research potential were diagnosed using the method of studying the research potential – IP51 questionnaire (by N.V. Bordovskaya, S.N. Kostromina, S.I. Rozum, N.L. Moskvicheva, N.N. Iskra).

Didactic mechanisms for identifying the research potential of bachelor students

The integrative connections were found on the subject material of various mathematical courses performed by students within research tasks (projects) aimed at identifying a holistic integrative construct. If the subject material of, for example, a mathematical analysis course is structured and studied as some integrity, then hidden new empirical facts can be discovered. The integrity and internal unity of knowledge, the genesis of its structural elements ensure the development of the personality of a specialist in any professional field, forms the ability to quickly adapt to changing living conditions, reveal new problems and find their solutions, and competently work with information.

An example of such unity within the framework of mathematical training of students in the field of Applied Mathematics and Computer Science is an acquaintance with functions which properties go beyond the classical functions studied in the course of mathematical analysis. Such functions are commonly referred to as special functions.

Special functions traditionally include several classes of functions: integral functions (for example, Euler integrals of the first and second kind), orthogonal polynomials (for example, Legendre polynomials, Chebyshev polynomials, Ermit, Lagerre polynomials), cylindrical functions (Bessel functions, Hankel functions, Maclonald functions, etc.), elliptic functions, A.N. Krylov's functions, spherical functions, etc. A class of functions called the generalized functions holds a special place here. The simplest of the generalized functions is the pulsed delta function $\delta(x)$, which was introduced into mathematics in the twenties of the twentieth century due to the efforts of the prominent English theoretical physicist, founder of quantum mechanics Paul Adrien

Maurice Dirac (Dirac, 1948). In the non-strict form it was everywhere defined as a function equal to zero, except for one point at which it took a value equal to infinity. At the same time, it has an interesting feature – an integral taken from it at any symmetric interval relative to zero, or on the entire real axis, is equal to one.

We believe that the first acquaintance of students of Applied Mathematics and Computer Science with the Dirac δ function is advisable within the framework of classical mathematical analysis. Since most of the properties of this function, one way or another, are associated with the concepts of "definite integral" and "improper integral", then immediately after studying the improper integrals, one of the lectures will be devoted to this function and its properties, paying special attention to the sifting property.

There are at least two approaches to defining this function by means of classical mathematical analysis. One of them is based on the idea of considering the δ function as the limit of a functional sequence with certain properties. The second approach relies on the concept of a needle-like function. In this case, it becomes possible to gradually continue to study the δ function in the process of research. Students receive their first research task within the framework of the Operational Calculus discipline.

Example of a research task on operational calculus. Study the relationship of the Dirac δ function with the Heaviside function. Get an image of the Laplace δ function.

Let us give some fragments of solutions to research tasks.

The key role in operational calculus plays the so-called Heaviside function (or inclusion function, or unit function).

There is a close connection between it and Dirac δ function. To establish it, the integral should be considered

$$\int_{-\infty}^{t} \delta(\theta)d\theta. \tag{1}$$

If $t < 0$, then the interval $(-\infty, t)$ does not contain points $\theta = 0$, and therefore, based on formula (6), the integral (1) will equal zero.

If $t > 0$, then the point $\theta = 0$ is within the interval $(-\infty, t)$ and, therefore,

$$\int_{-\infty}^{t} \delta(\theta)d\theta = 1. \tag{2}$$

So,

$$\int_{-\infty}^{t} \delta(\theta)d\theta = \begin{cases} 1, & t>0, \\ 0, & t<0. \end{cases} \tag{3}$$

Comparing formulas (3) and (1), we can conclude the following:

$$\int_{-\infty}^{t} \delta(\theta)d\theta = 1(t). \tag{4}$$

Formula (4) can be interpreted as follows: the Heaviside function is the primitive function of the Dirac δ function (or the δ function is the derivative of the Heaviside function).

Next, the Laplace transform for the Dirac δ function should be performed.

$$L[\delta(t)] = \int_{0}^{+\infty} \delta(t) \cdot e^{-pt} dt = e^{-pt} \Big|_{t=0} = e^{0} = 1. \tag{5}$$

Formula (5) again indicates that the Dirac δ function is an unusual function, so its Laplace expression equals one, which is not typical for classical original functions, because their Laplace expression should tend to zero.

Operational calculus makes it possible to obtain another important property of the Dirac δ function – its integral expression:

$$\delta(t) = \frac{1}{2\pi} \int_{-\infty}^{+\infty} e^{i\omega t} d\omega. \tag{6}$$

Next, we recommend moving on to the study of the applied aspects of the Dirac δ function in the theory of integral equations, ordinary differential equations, as well as in equations of mathematical physics.

Example of a research task on integral equations. Study the possibility of using the δ function for certain classes of integral equations. Give an example of its use in solving a specific integral equation.

In the theory of integral equations, equations of the below form

$$\int_0^x \frac{(x-t)^{n-1}}{(n-1)!} \cdot \varphi(t)\,dt = f(x), \qquad (7)$$

related to the class of Volterra integral equations of the 1st kind, the convolutional type of equations, play a significant role.

Let us consider the integral equation of the form (7) putting $n = 2$, in the solution of which we will encounter the Dirac δ function:

$$\int_0^x (x-t)\cdot\varphi(t)\,dt = x.$$

The Laplace integral transform applies to both of its parts resulting in the following operator equation:

$$\frac{1}{p^2}\cdot\Phi(p) = \frac{1}{p^2}.$$

Obviously, it will be solved as follows

$$\Phi(p) = 1,$$

i.e. the expression of an unknown function $\varphi(x)$ is one, and as we know from formula (5) its original can only be $\delta(x)$. It turns out that $\varphi(x) = \delta(x)$, i.e. the solution of this integral equation will be the Dirac δ function.

Similar tasks can be proposed in other sections of higher mathematics, for example, in the theory of ordinary differential equations, in probability theory or equations of mathematical physics:

1. Study the relationship of the δ function with the Green's function when solving second-order linear differential equations. Give an example of using a δ function when solving a specific differential equation;

2. Study the question of the density of the discrete probability distribution based on the application of the Dirac δ function. Consider the possibility of determining the generalized density of the discrete random variable distribution.

3. Study the possibility of using the Dirac function and its derivatives in solving a problem of mathematical physics.

3. Results

The experimental verification of the hypothesis set in the study was carried out on key indicators of the research potential of bachelors in the process of studying mathematics in the control and experimental groups: the total score of the research potential, the severity of the motivational, cognitive and behavioral components. Given that these indicators were measured prior to experimental training and no differences were identified, let us provide numerical characteristics of the distribution of the student's research potential after experimental exposure (Table 1).

As the initial results of the study show, there are differences in all indicators between the control and experimental groups. Lower values were detected in the students of the control group, higher values – in bachelors of the experimental group. In particular, according to the motivational component of the research potential, there is a significant interest in the scientific search among the participants of the experimental group, however, a fairly large value of the standard deviation indicates an uneven formation of motivation for success among the participants in the experiment. This fact also confirms the positive excess in the experimental group, which indicates the intensity

of excess in comparison with the normal distribution. The desire for scientific search among the study participants can also be realized in specific research achievements if there are other components, for example, in the motivation for success or in the motivation for self-realization, therefore, this requires further study.

Table 1. Distribution of the research potential of control and experimental groups after experimental training

Numerical characteristics	RP total score		Motivational component		Cognitive component		Behavioral component	
	Control group	Experimental group	Control group	Experimental group	Control group	Experimental group	Control group	Experimental group
Average	241.5	329	65.44	78.5	84.33	122.85	98.66	125.66
Standard deviation	18.03	9.67	7.12	10.86	6.83	10.70	9.77	9.99
Asymmetry	0.576	0.393	-0.37	-3.44	-1.86	-1.44	1.12	0.09
Excess	-0.39	-0.32	-0.49	14.45	4.77	2.09	1.27	-1.12

In the assessment of the cognitive component of the research potential, lower values were also noted in the students of the control group, and quite high – in the students of the experimental group. The obtained fairly high average values indicate the formation of research skills related to the successful solution of the set research problems, as well as the ability to intellectual creativity, the search for something new in the establishment of integrative connections. However, the standard deviation is also quite high.

The analysis of the behavioral component illustrates that it is quite high: the highest average score is observed in students of the experimental group, which is also explained by the larger proportion of research tasks, the lowest values are observed in students of the experimental group. The ability for operational self-organization and self-control in research activities, for its effective planning and load distribution were the result of experimental training.

There is a need to use a more effective Student's t-test for certain samples to identify statistical differences between the groups by the level of the studied indicator. The obtained statistical results are presented in Table 2.

Table 2. Check for statistical significance of mean RP values using the Student's t-test

Components	t	$t_{0.05;29}$	$t_{0.01;29}$	p-value
Motivational	6.16	2.04	2.76	4.5^*10^{-9}
Cognitive	16.11	2.04	2.76	1.09^*10^{-15}
Behavioral	11.64	2.04	2.76	3.04^*10^{-12}
RP total score	22.59	2.04	2.76	1.62^*10^{-19}
		$p < 0.05$	$p < 0.01$	

Significant differences were established between the control and experimental groups across all components. All this made it possible to reliably confirm that the identification of a holistic integrative construct in the subject content of mathematical courses had a positive impact on the level of development of all diagnosed indicators of the research potential.

4. Discussion
The application of the methodology for organizing research activities by setting specially selected tasks for establishing interdisciplinary ties solves the problem of ensuring the quality of

mathematical education on the basis of the holistic, professionally demanded, integrative system of knowledge among students. Science states that the teaching of fundamental disciplines requires the use of the principles related to the search for the logical structure of mathematical theories, concepts that reveal the essence of mathematical knowledge, its foundations, origins, integrity. As an internal link in the study of mathematical courses, the authors recommend, for example, the use of the Dirac δ distribution. This distribution makes it possible to establish meaningful connections between various mathematical structures, to increase the level of scientific content of mathematics, generalization and systematicity of mathematical knowledge of students, understanding and assimilation of basic mathematical facts. The feasibility of introducing a new idea of the integrity of the mathematics can be justified as follows. First, the proposed approach will increase the level of fundamental mathematical training and improve the applied focus of the mathematics, which determines the main requirement currently imposed on graduates of higher educational institutions. Second, in the process of establishing and disclosing integrative connections of the subject content of mathematical courses, the research potential of students is updated. The novelty of the proposed non-standard research tasks is that they put students in a situation of active search for equally non-standard solutions, thus prompting the accumulation and integration of mathematical knowledge.

However, it should be noted that, first, the application of parametric statistics instead of non-parametric statistics, and second, the organization of experimental verification using control and experimental groups, can contribute to a decrease in the reliability of the obtained results. In the future, additional validation of the obtained results is required based on non-parametric statistics (Mann-Whitney U-test, Rosenbaum Q-test), as well as using a strategy for creating one experimental group and measuring the parameters of the research potential before and after training (Wilcoxon T-test).

5. Conclusion

Thus, the study allows making the following conclusions:

The modern concept of becoming a competitive specialist in the modern labor market is based on the actualization of such personal qualities and abilities as self-organization and expression, self-control and self-determination. The integration of elements of educational activity and scientific search, the harmonious construction of this synergy can become a mechanism not only for the intellectual, emotional-behavioral, motivational, but also for the professional development of students.

The effective development and disclosure of the research potential of students in the process of teaching mathematics is possible with the consistent organization of the educational process by including a holistic integrative construct in the subject content of mathematical courses based on the principles of fundamentality, interdisciplinary, foundation, systemogenetics, and information richness of the educational environment. The special functions studied in operational calculus, in the theory of ordinary differential integral equations, in the equations of mathematical physics and probability theory played the role of such an integrative construct.

The study proposed poorly studied research tasks in order to give integrity to the subject content of mathematical courses through the appropriate organization of the student's research activities to reveal this integrity.

In the future, it is possible to further study the applied capabilities of the Dirac function, expand the bank of research tasks (for example, when solving differential equations with a divergent argument, including with a delay in the argument). The study of some aspects may require special training, so there are opportunities to further consider this problem at the master's level.

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Creation of Conditions for Effective Functioning of Youth Communities and Associations Based on Educational Organizations

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Abstract
Currently, the youth movement is represented by a variety of forms, which provides vast opportunities for choosing the most suitable and interesting association for a young person. Although a return to the model of a united youth organization, which was the Komsomol organization in the past, is unlikely possible, since this idea will not find a response among young people and will contradict modern social values, youth public organizations at the present stage can apply their activities in a wide variety of directions: sports, works, ecology, patriotism.

The secondary employment of young people, which suppose the organization of activities of youth associations on the basis of educational institutions, has also received proper support. At the same time, the student movement has pursued the social maturation of young people, their involvement in the process of professional labor formation historically, in addition to the economic component (the development of economic relations, additional financial support to young people).

Nevertheless, the political transformations of modern Russia have established a completely new phenomenon of Russian youth, what distinction is disunity and split into various social and economic segments that are weakly or not at all connected with each other. Thus, the social component of the functioning of student organizations, which contributes to the direct formation of personality, is not fully reflected today. That is why the issue of organizing the activities of student youth associations requires detailed research, which should include an analysis of the experience of implementing youth association programs on the basis of educational organizations and the particularities of various models of this vector in social policy at the present stage.

The models of cooperation of youth representatives on the basis of educational organizations are reviewed, and also the opinion of representatives of this population group regarding the current conditions for the formation, functioning and provision of youth organizations and associations

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within the Financial University under the Government of the Russian Federation is examined in this article. As a result of that analysis, the evaluation of knowledge intensity degree of the student communities of the Financial University and Russia, as a whole, is established, and methodological recommendations for the further development of student organizations are provided, considering the individual opinions of their participants.

Keywords: youth associations, educational organizations, student societies.

1. Introduction

At the present stage one of the most important factors of functioning and development of world society is youth, which makes up about a fifth of the population of Russia and 18 % of the world's population. Youth plays an important role as a factor of social turns, renewal, initiative, energy in implementation of reforms and changes.

Currently, the terminology "youth" means an extremely broad group of people. Such ambiguity can be explained by the lack of a single conceptual comprehension, arising from a high degree of blurriness of the boundaries between the periods of childhood and adulthood in consequence with different emphasis of various sociology schools.

For instance, the United Nations Educational Scientific and Cultural Organization (UNESCO) uses several forms of the term "youth" depending on the context. Nevertheless, in order to ensure statistical consistency, the range of interpretations used is based on the concept of the United Nations (UN), which determines "youth" as persons aged 15 to 24 years. As a result, the youth statistics of the UN refers to this vision (Description..., 2022).

Within the framework of this section, the category of youth is considered as a dynamic social structure. In this regard, we will take into consideration those people, who having professional and economic dependence, what is the result of continuing education in secondary specialized or higher educational institutions, are just entering adulthood. In this case, people, who are still the subject to the processes of secondary special or higher education, socialization and the acquisition of everyday experience, already make decisions about those actions that can be considered as a determinant of their own life aspirations and social behavior.

At the same time, it is important to get acquainted with the point of view regarding the age group of young people used in the international educational environment. Thus, the European Union legally defines "youth" as people aged 13 to 30 years within the framework of the Youth in Action and Erasmus+ social programs. Of course, such a general definition weakly represents potential participants of youth associations based on educational organizations, what requires taking into account more complex concepts. One of these is certainly Karl Mannheim's point of view. This Hungarian sociologist has derived the definition according to what a particular generation should be considered not only from the point of view of biological criteria and age evaluation, but also from the influence of factors of social historical transformations (Detail..., 2022).

Mannheim's position regarding the relation of a person to a particular generation comes down to the fact that, since generations determine the appearance of the whole society, it is the youth who acts as the driver, which dynamizes the social structure and brings into it values and components being innovative, advanced and necessary for post-industrial and information societies. It should be underlined that in the XXI century, it is prosocial work within the framework of the functioning of a collective or student group that can be considered as an innovative value necessary for building an effective civil society (Pilcher, 1994).

The faster the society changes, including socio-cultural and technological environment, the more dynamic the change of generations becomes and accelerates. Mannheim also recognized youth as one of the resources, that, existing at different stages of history are able to ensure the viability of society with their capabilities to mobilize knowledge and skills. In this regard, young people who make up the youth layer of society are given special importance, determining an advanced social function, the usage of which depends on the nature and social structure, as well as the culture of society.

The social category refers to the perception of youth as a certain social group, obliged to acquire the skills of full and responsible participation in the life of society. Eisenstadt, a representative of the functional approach, underlined predispositions in young people that allow them to perform many functions. According to his point of view, "youth" is a group of people who, due to their age, are in a transitional stage between the processes of primary and secondary

socialization. Being insufficiently prepared for a completely independent lifestyle, they create peer groups in which they satisfy the needs for belonging and security, as well as arm themselves with knowledge typical for adults, thereby ensuring the balance in society (Eisenstadt, 1996).

Filipiak gives a different definition. According to him, young people should be considered not only as a social group, but also as a category uniting young people in a chronological and biological sense. That means, the term "young people" refers to the totality of individuals in a certain age group, and the term "youth" refers to the state in which they are. The cultural approach, on the other hand, considers "young people" as a group with a culture and characteristics different from that in which adults function. The theory of the transfer of cultural values, issued by M. Mead, relates to this line of thought, according to which young people adapt their behavior to the features of the prevailing culture, assimilating its values and postulates and passing them to the next generations (Caraballo, Filipiak, 2021; Erwin, 1995). The consideration of culture as the dominant factor in the perception of youth is also postulated by Khalasinsky, who believed that youth is not a natural physiological and hormonal state, but an element of culture, a kind of social institution, the form of which depends on the structure and formation of society. Youth is characterized by freedom from certain types of social responsibility, economic dependence and premarital status. In its turn, social customs determine the duration of this period, the nature and boundaries of freedom (Wlodarek, 1987).

At the same time, the society clearly identifies personal and social models, responsibilities and privileges of youth representatives. Ilyinsky emphasized that the definition of the term "youth" is closely related to historical conditions. The bottom line is that it is impossible to form a single definition of the concept, since it is valid for each individual, very long historical period, depends on the nature and level of development of society. It will not be possible to create the only correct and universal definition acceptable to young people of all generations at once (Elishev, 2017).

Speaking about youth as a factor of change, we should turn to the classical definition of Mannheim, according to which youth is a reserve that comes to the forefront at those moments when society is faced with the problem of adaption to rapidly changing or completely new circumstances and conditions. This becomes possible due to the nature of this stage of development in human life. Youth can be considered as a natural reservoir of innovation, conditioned by the specifics of the development of the appropriate life phase, which includes a special receptivity, sensitivity, the need to define "yourself" through the analysis of ideas and events around. In this context, special importance is given to the own "peripherality" in combination with criticality and reflexivity (Karácsony, 2008).

The particularity of the formation and functioning of youth communities and associations on the basis of educational organizations is to create conditions through the implementation of educational, project, career guidance activities, additional education. Youth is a natural driver of change, which, by reinforcing the need for change, expresses the requirement for behavior that creates a new reality. For this reason, every change predetermines opportunities for innovation by young people. Even the combination of these two perspectives requires close attention to the relationships that arise between youth and social systems. It is not surprising that, according to the Spanish philosopher Ortega y Gasset, the most important concept in history is the concept of generation. In his ideas the thought is traced that change of generations is akin to an endless continuation and changes history, the transmission of entrenched norms, values and patterns of behavior, on the one hand, and on the other hand – the generation of ideas attitudes in response to socio-economic and cultural changes (Lambert, 1972).

The development of the modern world with an emphasis on science and technology, the global process of economic progress and new social movements exert force against modern society, one way or another, determining the direction of its transformation. In turn, scientific progress is necessarily associated with the coverage of the education system, especially at the highest level, which creates conditions and the requirement for the creation of youth communities which are focused on the new needs of society, change in value principles and the implementation of the main goals in ensuring high quality education. The extension of formal education, the pressure associated with the completion of higher education, and not of secondary school, as it was before, creates new requirements for young people, and hence for the social institutions that educate them.

The loss of functionality of traditional social institutions and, at the same time, the acquisition of autonomy as a result of the organization of the innovative production process of modern society is a potential reason of tension between growing expectations and independence, what becomes an area of choice due to changes in the differentiation of the social structure. The problem of assimilation of new values is primarily faced by young people, who feel these changes more than other groups. Change of the meaning of moral and social principles and values leads to issues in orientation of young people and is associated with difficulties in personal adaptation of individual to social organizations.

At all times, people have speculated on the importance and necessity of including young people in public decision-making processes. Theorists from many countries note that a step aimed at attracting the voices and energy of young people can improve organizational services, provide young people with the opportunity to acquire new skills, as well as increase the sense of belonging of young people to a particular community and, as a result, society as a whole.

At the forefront of this movement are youth associations available in educational organizations that provide conditions for counseling sessions and self-expression of young people. The creation of roles in the decision-making system transfers young people from the category of recipients of prosocial services to the category of participants in the process of developing, planning and evaluating initiatives.

The involvement of young people in the work of youth associations is considered in various forms: through the creation of city councils, school and institute cells and other non-commercial organizations, in which the opinion of participants, representatives of younger generation, is of central importance when making operational decisions. Researchers refer to the participation of young people in public activities in various terms: youth engagement, youth voice, youth empowerment, youth actions, youth infusion and youth management. All these terms have a common principle: young people, as competent agents of society, are able to make decisions and deserve the right to vote in situations that affect their lives and the state of the community.

The factors reflecting the significant importance of youth associations were supported by numerous research facts, in which it was underlined that the interaction of youth with peers, especially those that complement educational programs, has a positive effect on academic success, what means, this form of extracurricular activity has an impact on the overall cognitive growth and intellectual development of the student.

Moreover, the interaction of students with their peers has a greater impact on the development of interpersonal communication skills, leadership qualities and overall personal growth than formal ties with teachers in the framework of studying academic disciplines. Finally, communication with students of different racial and ethnic groups has a positive effect on the attitude and values of students regarding racial and ethnic awareness and involvement.

Student organizations are one of the key factors in developing a sense of belonging to an educational institution, thereby they support the efforts of the educational institution to retain students. If a student does not feel engaged in the study material, then there is a high probability that he will not continue his education and will not graduate. The evolution of student organizations, along with the student union movement, has offered students a space to create a sense of belonging to the student community, as well as opportunities for engagement and learning. Before the advent of student organizations, these links between learning and engagement were not obvious.

Thus, the movement of student unions has defined the role of youth student associations as a concept of intellectual growth focused on a holistic approach to student development. Studying the evolution of student organizations made it possible to hear and evaluate the role of the student's voice. In addition, the development of student unions has sanctioned the necessary emphasis on the possibility of extracurricular activities, which actually contributes to improving the quality of education. Youth associations based on educational organizations show that to grow and develop the ability to think critically, students must be able to establish links between their own education and the current problems of society.

Theoretical prerequisites for the formation of cooperation models of youth representatives based on educational organizations

Considering the historical landscape of student organizations, the importance of their evolution as part of the student experience can be highlighted. To understand how best to meet

educational needs now and in the future, it is important to recognize why young people choose student organizations. In addition, both historical and modern perspectives can help scientists and practitioners understand how participation in student associations of young people contributes to the educational and intellectual growth of a student, further emphasizing their importance in the higher education system. As higher education continues to be developed, it is important to eliminate misunderstandings related to the goals of creating student organizations, and to establish student organizations more firmly as important elements of the learning environment.

One of the forms of participation of young people in youth associations is the initiation of a club system in the educational environment. In the foreign educational climate, clubs and member associations have already demonstrated success in voluntarily attracting young people and providing a context for positive learning and youth development. In fact, it was club work that became the reason for the existence of many national youth organizations in the XX century. Clubs and member organizations have different names – squad, patrol, league, society, team. Regardless of the term, these are usually small, flexible groups of young people formed within larger organizations, most often represented by universities and colleges.

Successful youth organizations are united by the following features:
- future orientation;
- clearly specified and formulated mission;
- a responsible management team that values young people and strives to develop their success;
- positive identification unrelated to social problems.

Effective organizations are respectful and hospitable towards young people, focused on promotion and training, but not on correcting and educating its members. In their study of public youth organizations, Heath and McLaughlin refer to youth organizations as "family organizations". Pittman in his turn believes that successful organizations are primarily those that are built and operate on the principles of looking after their members. The researcher underlines that the care of the organization is transmitted to young people through four important ways. Firstly, an environment is created in which young people feel respected and heard. Secondly, opportunities are provided for creating channels of mutual understanding between adults and young people. Thirdly, a constant information and emotional exchange is maintained. Fourthly, opportunities are identified that through training and motivation channels encourage young people to contribute to the common good through service, protection, philanthropy and active problem solving (Sanders, 2001; Pittman, 1991).

Thus, effective youth organizations provide young people with several important advantages:
- Expanding contacts with adults;
- Training and acquisition of useful, practical skills;
- The practice of taking formal leadership and organizational roles;
- The possibility of showing responsibility to society.

Marsland notes that organizations with a strong potential to satisfy the needs of young people offer programs with a variety of options for active projects, emphasize the experience of social groups and provide individual attention and counseling. Programs offering activities appropriate for development and supervised by adults that attract and support the engagement of young people, provide a variety of opportunities for activities, rhythms of work and games, opportunities to evaluate talents of members through flexible approaches to assessing existing skills (Marsland, Day, 1987).

This approach attracts young people, who are considered as a resource that needs to be developed, and not a problem that needs to be solved in some way. Often such programs are aimed at a recognizable "product": a speech, a team report, a video or a service project. Active programs attach crucial importance to the process of youth development as a whole, and not just to a specific cohort of young people. Stable relationships of mutual trust and respect expand the circle of support for a young person and offer models of success, vocation, lifestyle, career options and making reasonable decisions.

Group work unites young people around a common deal or commitment to a common goal or task. Social group work creates community and opportunities for interpersonal relationships through affiliation or membership in an association. These groups have clear goals and rules of affiliation, often those in the creation of which the youth took part. Whether its dance groups, drill

teams, music groups, football teams or theater groups, their range of development-appropriate activities are supervised by consistent and reliable adults who make it clear that each participant is responsible for following the rules and administration.

The concept of a club, membership organization or society is extremely old and is not limited to youth and educational institutions. For example, in the 19th century, the French Nabis, a group of disaffected artists, created a semi-secret brotherhood around their fervent commitment to a new way of artistic expression. Their society held weekly meetings, dinners and a set of rituals. Membership in the society was possible only by invitation, from which the members' devotion to each other and to the stylized poster and print art of urban life was very strong. In this case, the word "club" refers to an organization that is youth-oriented and run by adults; has organizational sponsorship and a stated mission or goal; exists independently of the formal structure of educational organizations. The main goal of youth clubs is to create an atmosphere in which young people can develop by studying and practicing the roles and responsibilities associated with active membership in society (Auricchio, 2004).

As part of the broader goal of youth development, most clubs have specific program accents, from sports to competencies, such as dancing, hiking, crafts, entrepreneurship, cultural inclusion, leadership and community work. Club activity, as a means of conducting a thorough developing social education related to values, character formation, leadership, the development of racial and cultural identity, intra-group solidarity and citizenship, offers a number of significant advantages.

However, it is important to acknowledge that the aspects of group work, which some people call strengths, are by their nature potential sources of discouragement, alienation, and negative experiences for others. Based on the work of Kleinfeld and Shinkwin, six important aspects can be identified that should be taken into account by youth workers, parents, leaders and young people within the framework of club activities and group work (Kleinfeld, Shinkwin, 1983).

Organizations and programs with a history usually work to preserve traditions and discard attributes that do not make much sense for modern youth. As a consequence, groups should have the freedom to redesign themselves in various cultural, economic, racial and ethnic contexts so that the ideology of the association reflects the systems of belief, expectations and values of its participants, representatives of youth.

The expressed desire and obvious need of some groups to be "exclusive" challenges the views of fairness, accessibility and choice for young people in their youth organizations. Most often, this issue appears in regard to groups created to meet development needs related to gender, race and culture/ethnicity. Heather J. Nicholson considers that youth groups dedicated to the individual needs of the same gender, race or ethnic group are justified when there is a goal of positive impact, what means, that an identifiable problem or issue should be solved to move forward towards parity and equal opportunities (Nicholson et al., 2004).

If the club's activities are aimed to satisfy the needs of young people and adults who are members of the club, the organizational accountability is sometimes difficult. The key point here is to develop programs and to describe the results in terms of youth development. Youth and adult leaders can verify responsibility and the acquisition of skills, regardless of what they do: breeding animals, participating in a precision shooting team or registering voters.

Important security and structure requirements must be balanced with the needs to experiment, take risks and learn lessons. Such lessons are easier to be learnt in a small group in a club or youth association. The small size of the group encourages also close personal interaction between its members and provides opportunities for flexible programming aimed to meet individual needs.

At the same time, a strong adult leader has the potential to create, influence and even lead the activities of a small group, often with the tacit understanding that young people find it convenient and comfortable. So, obsessive control by adults denies young people an opportunity to practice in solving problems and making independent decisions. The youth associations, where adults prevail, offer many young people that they experience as part of educational or nurturing process. Due to this effect the interest disappears quickly to such organization.

The small size and permanent nature of youth clubs usually facilities creating an environment in which young people feel more free while talking and discussing problems without the risk of getting ridicule, misunderstanding, condemnation or negative labels. When there is

active leadership in planning and conducting group events and meetings, they can put together an agenda that meets their expectations.

In addition, when roles alternate and are distributed, young people develop a sense of belonging, usefulness, importance and contribution. The lack of separation by ability and strict age segregation is a real plus for youth groups associated with informal youth organizations. The club environment can become one of the few places where young people take on roles based on their desire and interest.

It is important that clubs and youth groups keep flexibility that allows them to consider and reflect the norms and values of participants, the educational program and significant public institutions. Young people should be involved in scheduling, determining expectations from participation and setting work standards. Sometimes rules created by adults to encourage participation restrict inadvertently young people who, for reasons beyond their control, cannot meet deadlines and fulfill their obligations qualitatively. The rules regarding attendance, timeliness, dress code and involvement of parents should be carefully analyzed to see if they serve the needs of adult leadership or youth development.

Adult leaders take a special responsibility for initiatives, regardless of whether they play a formal, institutionalized role or an informal, hidden role in the group. As mentioned earlier, the purpose of youth associations based on educational organizations is the development of youth, their responsibility and participation in the life of society. The organization that builds its youth development work on the basis of a club or group form of work faces the issue of club autonomy in comparison with organizational consistency.

At the same time, it is important to maintain organizational flexibility and responsiveness of the group to young people. Of course, the imposition of a rigid structure and cruel rules can provide a more universal and effective solution to the problem of inconsistency of intra-organizational operational issues in the short term. Nevertheless, such approach can hardly be acceptable, especially in the case of working with young people, representatives of youth. Much more effective is the method when a detailed explanation of the mission and goals of the association takes place, as well as training leaders to understand their organizational responsibilities and adapting members to the chosen work model within the framework of the organizational ideology accepted by all members.

Youth communities and associations based on educational organizations can be created by young people themselves or by interested adults. In this regard, it is necessary to consider the stages of creating a youth organization at an educational institute, taking into account the various types of such organizations, their goals and principles, advantages and features. It is also important to pay attention to the time factor and the conditions for the formation of the association, under which one or another entity will be engaged in rallying young people around a common goal. By the end, recommendations and tips will be formed, following which it is possible to significantly improve the efficiency of both existing and newly emerging cells of informal interaction of youth representatives at an educational organization.

Regardless of the direction of activity, goals and available resources a youth association can be as broad as narrow in scope, the same as an organization, whose members are purely adults, people formed finally within a particular social system. Such societies can operate locally, nationally, or even internationally. Despite the youth bias, there may also be adults at the base of such associations: coaches, mentors, employees of an educational organization.

Moreover, a local youth organization represented within a separate educational unit can also operate in the context of the activities of a larger structure: for example, a local youth coalition for the promotion of patriotic initiatives may have a youth advisory council that publishes its proposals on what, in their opinion, will help encourage young people to form appropriate ideological inclinations, but already to a wider audience by speaking at specialized conferences and congresses or by making statements in the media and the Internet.

Speaking about the expediency of supporting initiatives to create youth associations on the basis of educational institutions, it is necessary to highlight the advantages that a representative of the younger generation receives from participating in the activities provided by the agenda of such organizations. Thus, participation in group activities helps young people develop personal and interpersonal skills and competencies. There is the ability to think critically and to solve problems inventively, as well as taking personal and group responsibility. It follows from this, that this kind

of pastime contributes to the development of sense of confidence and self-esteem in young people. Moreover, in case of the described types of activities in the association, in which the presence of acts of involvement from its participants is implied, the development of abilities to empathy and complicity is clearly observed in their nature (Gurinovich, 2010).

Such effects act as a healthy alternative to unsafe activities, the reflections of which are now and then traced among the representatives of the younger generation at different ages. Participation in social activities, especially, those provided on the basis of an educational organization, is a protective factor, the relevance of which determines the propensity of a young person to make the right choice of values and hobbies. This result can be explained by the fact that by participating in the activities of a public organization, a safe identity is formed in a person, in which the subject is less likely to be involved in risky activities with undesirable consequences.

In addition to development of personal characteristics, the engagement of youth representatives in the activities of methodological associations based on educational institutions can contribute to the development of professional management and administration skills. As a result, participation in the activities of youth associations gives opportunities the youth representatives for personal growth and creates the basis for the skills and abilities necessary to build a professional career.

Often to ensure the effective functioning of youth associations, educational organizations provide young people with an area that can be used by members of such club for their own purposes. In such conditions, members of associations can express their thoughts free and implement skills through art and activities like that, which constitutes their desired vector of development, whether in professional environment or as part of common hobby.

Thus, youth organizations offer participants an available way to learn about various aspects of life by providing opportunities for self-expression and their will. This way of communication creates a strong support network for young people whose interests come together in one common point of correct choice of different values and principles for the association.

Speaking about the advantages of creating youth associations based on educational organizations for society, in this context it is necessary to mention a window for the possibility of changing the public perception of young people as a driver ensuring progress and seamless generational change. Such an effect becomes possible due to the involvement of young people in society life, whereby they become less inclined to create problems and form a toxic, ambiguous climate in society through the imposition of cultural and other trends, and more inclined to search for solutions.

In addition to this, youth organizations operating at educational institutions can cooperate with public associations which are represented outside the institute, college or school. This kind of cross-border interaction of thematic organizations creates opportunities for the promotion and implementation of public and socio-cultural initiatives, the additional advantage of which is the engagement of youth representatives and providing them with highly organized and healthy leisure.

As highlighted earlier, youth associations based on educational organizations can be created by two broad groups of people: young people themselves or adults who carry out a kind of mentor's and guide's functions. Both options make sense in certain circumstances and provide unique benefits. Some of the ideas underlying the creation of youth organizations by both groups should be considered due to this reason.

Adults who create or fund youth organizations can come from almost anywhere. Most often these are teachers, coaches, religious mentors, parents or employees of educational institutions. Sometimes they are not directly related to young people, but they have experience or knowledge that they would like to pass to the young generation. Regardless of their background, adults who create youth organizations are united by a commitment to youth, help to people and the goals of the group (Atas et al., 2013).

Often such people become insiders, agents, whom young people know and respect, what greatly facilitates the process of creating a youth association. It is easier for insiders practicing in one or another applied or theoretical topic to plan events that are interesting for young people. Such people are aware of the competencies required by the followers of a particular activity type.

In addition, programs initiated by insiders can attract and interest young people studying in educational organizations much more as a certain, even sometimes, initial level of trust has been worked out among young people and not only the skills and experience of the insiders do.

Moreover, if an adult mentor comes from the same location or ethnic group, young people feel that the probability is higher that such person understands the circumstances and motives for participating in the activities of thematic association, as a result, the engagement of community members increases.

Although people from outside have to overcome the difficulties associated with becoming well-known and respected young people in the community, such "outsiders" can bring new, previously unknown practices and development, views and resources into the social life of young people. Regardless of whether an adult is an insider or an outsider, the presence of an adult organizer of an association can facilitate increasing the authority of a youth organization. Such advantage can manifest when solving organizational or formal tasks.

For example, most young people have never written applications for grants, while an adult curator may have the proper competencies in this case. Due to this reason most youth organizations want to have an adult at least with whom the group is connected. Such guide opens doors which are often closed to young people whose associations are built on purely youth principles, even within the educational organization in which they are trained (Merton, 2018).

By turn, the advantages of young people come from their awareness of a particular issue that they are exploring as part of the work of a youth committee or association. Given that such association functions within the framework of an educational institution, young people know what is really going on much better than most adults hired to lead a student organization. For the detailed study of the favorite topic, they can unite with other youth organizations and have an official organization, or work in a less formal mode to stay up to date and to achieve results without involving serious resources.

Speaking about the moment favorable for the creation of a youth organization, it should be highlighted that there is no bad time for the formation of a particular social cell on the basis of an educational organization, especially if young people themselves are interested in creating such a group. However, some time periods and events are particularly well suited for adults to mobilize young people to improve the lives of their communities. Such moments include periods in which dramatic, disturbing, or significant events occur in society.

If we talk about the internal prerequisites for the creation of associations within the walls of an educational organization, then from this point of view it is difficult to find a better moment than the beginning of the academic year, when young people strive to get to know each other, to become part of the community and to find out what is happening at the university and what role they can play in possible transformations.

The starting point of a youth association can be prosocial activity, as a result, new information appears that contributes to the formation of interest by the part of young people. For example, a group of researchers on the behavioral aspects of teaching young people at university can conduct a survey among young people. The result of the survey, which is available in the form of information on a particular topic, can become a push to create a group to promote the identified hypotheses or to solve the issue occurred.

However, the information received and the lively interest in it by young people may indicate the inefficient work of existing organizations. In this case, an opportunity appears for the implementation of new beginnings, which can be performed on the basis of an educational organization with help of adults and without.

The motivation of young people to create a youth association often comes from a desire to ensure significant changes in the community. Such case is a good instance of the possibility to include young people in a large group, for example, by creating a youth advisory council by a citywide organization or a branch of an educational organization.

Speaking about the details of organizing a youth association based on an educational organization, it is important to consider the initial stage, which consists in determining the topics of the community. If the organizer is a young man, then he probably already knows the needs of the audience and the direction in which the group's activities should be arranged.

Adults may also have specific ideas for working on a specific problem or topic. However, if the organizer is an adult, it is even more important for him to get feedback on which direction the activity will attract the younger generation. Are young people interested in what the association will work around? Are they ready to devote time and effort to this? Do they believe in the possibilities of their own development?

The parameter of the association's affiliation to an existing local, regional or international organization deserves special attention. For example, if we are talking about a group of young people interested in international politics and law, should they organize a cell of UN modelers and discuss current international policy agendas through the prism of international law? In this case, there are opportunities to receive additional help and knowledge from other representatives of this community from other universities. At the same time, such option means following certain patterns and prescriptions, which can negatively affect the level of autonomy and somehow depersonalize the association and its members.

As have been already described, if the association is created by young people, then one of the options for the development of events may be the invitation of adults as sponsors or facilitators. In this case, it is important to determine the purpose and conditions of the invitation. For example, should this person appear at every meeting? Should he speak on behalf of the organization at meetings of the management of the educational organization? Should he help the association in obtaining resources, such as money and equipment? If this moment is poorly defined, the role of such a tutor becomes less clear, and his participation, as a result, less effective, which can easily lead to disappointment, excesses and opportunities missed for both sides.

In addition to the groups with which the association has thematic connection, there may be other sources, besides the educational unit itself, on the basis of which the association operates, ready to support the youth association: for example, a grant system implemented by authorities and government organizations, private agents or regional and international coalitions.

Such assistance can be provided in a variety of forms – from financing to providing locations and opportunities for free advertising.

2. Materials and methods

In order to concretize the recommendations on the formation of youth communities and associations based on educational organizations, a methodology has been developed to assess the effectiveness of the functioning of youth communities (hereinafter referred to as the methodology). The methodology has been developed based on the results of the survey among students at the Financial University. The survey is conducted every two years starting from 2017–2018 academic year. The information submission form no. SSU-1 has been developed in order to conduct the survey and to collect data. The Table 1 provides descriptive statistics on the survey conducted.

Table 1. Descriptive statistics on the survey (Source: Students' survey…, 2021–2022)

Academic year	2017–2018	2019–2020	2021–2022
Qty of respondents, persons	632	845	720
Average age of respondents, years	21,8	21,7	20,5
Average score of respondents	4,64	4,32	4,40

The core of this methodology is a regression model formed on the basis of data obtained as a result of a survey among students of the Financial University under the Government of the Russian Federation (hereinafter referred to as the Financial University). The standard record of the stated regression is presented as next:

$$\begin{cases} W_t = \dfrac{1}{n}\sum_{i=1}^{n} W_{ti} = \dfrac{1}{n}\sum_{i=1}^{n}(\alpha \cdot We_{ti} + (1-\alpha)\cdot Wf_{ti}) \\[2ex] We_{ti} = \sum_{j=1}^{m}(\beta_j \cdot We_{tij}) = \sum_{j=1}^{m}\left(\beta_j \cdot \left(E_{tij}\cdot \dfrac{T_{ij}}{Ti}\right)\right) \\[2ex] Wf_{ti} = \sum_{j=1}^{m}(\gamma_j \cdot Wf_{tij}) = \sum_{j=1}^{m}\left(\gamma_j \cdot \left(\dfrac{10}{k}\cdot\sum_{p=1}^{k} Wf_{tijp}\right)\right) \end{cases}$$

where:

W – this is an integral indicator of effectiveness of functioning of student communities;

$i = 1, \dots, n$ – this is a set of students - respondents;

We – this is an indicator of the estimated effectiveness of the functioning of student communities;

Wf – this is an indicator of the calculated efficiency of the functioning of student communities;

$j = 1, \dots, m$ – this is a set of functioning and being evaluated student communities;

α – this is the weight coefficient of the integral indicator;

β и γ – these are quotients of significance of students community functioning within the framework of university's student self-government system;

T_{ij} – this is qty of years while the student has been involved in the activities of students community;

Ti – this is qty of years while student's education at the university;

$p = 1, \dots, k$ – this is qty of calculated subindicators of the effectiveness of the functioning of student communities.

The given survey included the below questions to evaluate the group of calculated indicators (Wf_{tijp}) on two more important students' communities at the Financial University – Scientific Student Society (SSS) и Student Council (SC):

1. Has SSS contributed to your engagement in student science;
2. Has SSS contributed to your writing of scientific works (articles);
3. Has SSS contributed to your participation in student scientific events (conferences, forums, etc.);
4. Has SSS influenced on your choice of future profession;
5. Has SC contributed to your engagement in students' life;
6. Has SC contributed to development of your creative potential;
7. Has SC contributed to your participation in student events;
8. Has SC influenced on your choice of future profession.

Average rating (see Figure 1) is a synthetic indicator of the calculated efficiency of the functioning of student communities and is given in accordance with the formula: $\frac{10}{k} \cdot \sum_{p=1}^{k} Wf_{tijp}$.

Fig. 1. The values of calculated indicators for evaluating the effectiveness of the functioning of student communities and at the Financial University
Source: compiled by the authors

Also, the survey includes a set of questions to determine the indicators of the estimated effectiveness of the functioning of student communities for the periods under consideration (see Figure 2).
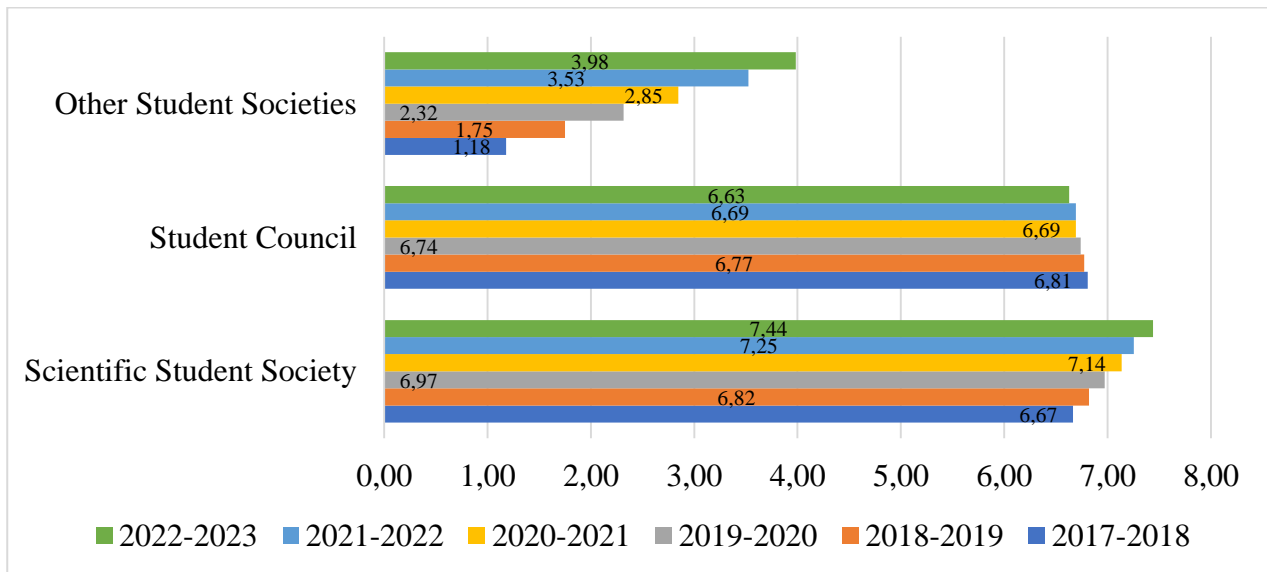
Fig. 2. The values of the indicators of the estimated effectiveness of the functioning of student communities (SSS, SC etc.)
Source: compiled by the authors

As a result of the testing of the model presented above, it has been determined that the functioning of other student communities is a statistically insignificant factor in the effectiveness of the organization of student communities at the Financial University. Taking into account this thesis the following regression was obtained, which counts the activities of the flagged key student communities (SSS − 1, SC − 2):

$$W_t = 0{,}333 \cdot \left(E_{ti1} \cdot \frac{T_{i1}}{Ti}\right) - 0{,}069 \cdot \left(E_{ti2} \cdot \frac{T_{i2}}{Ti}\right) + 1{,}317 \cdot \sum_{p=1}^{k} Wf_{ti1p} - 0{,}526 \sum_{p=1}^{k} Wf_{ti2p}$$

$$R^2 = 0{,}9103, \qquad F = 218{,}88, \qquad F\text{кр} = 1{,}14, \qquad t\text{кр} = 1{,}96$$

или

$$
\begin{cases}
W_{ti} = 0{,}482 \cdot We_{ti} + 0{,}518 \cdot Wf_{ti} \\
\qquad (5{,}294) \qquad\quad (6{,}834) \\[4pt]
We_{ti} = 0{,}690 \cdot \left(E_{ti1} \cdot \dfrac{T_{i1}}{Ti}\right) - 0{,}143 \cdot \left(E_{ti2} \cdot \dfrac{T_{i2}}{Ti}\right) \\
\qquad (0{,}101) \qquad\qquad\quad (0{,}117) \\[4pt]
Wf_{ti} = 2{,}5 \cdot \left(1{,}017 \cdot \displaystyle\sum_{p=1}^{k} Wf_{ti1p} - 0{,}406 \sum_{p=1}^{k} Wf_{ti2p}\right) \\
\qquad\quad (7{,}011) \qquad\qquad (2{,}560)
\end{cases}
$$

All parameters of the model are statistically significant. Moreover, the model as a whole is statistically significant, and the coefficient of regression determination is 0.9103. The absence of autocorrelation and homoscedasticity in the presented regression was determined while the Durbin-Watson and Goldfeld-Quandt tests.

Some values of the parameters β and γ are negative due to a decrease in the objective significance of the Student Council's activities as an unscientific student community associated with the conceptual uncertainty of the goal-setting of this organization. In order to increase the effectiveness of student communities, it is necessary to implement action plans for non-scientific

student communities in accordance with the university's strategy and a program for the adaptation of new members following the example of the student adaptation program called "Coordination" at the Financial University.

Thus, the indicators of effectiveness of the functioning of student communities as at the Financial University as in Russia (see Figure 3) have a positive trend (except for 2019–2021 academic years due to the consequences caused by the quarantine restrictions because of COVID-19 pandemic), what primarily demonstrates that the knowledge-intensive student communities are organized qualitatively.
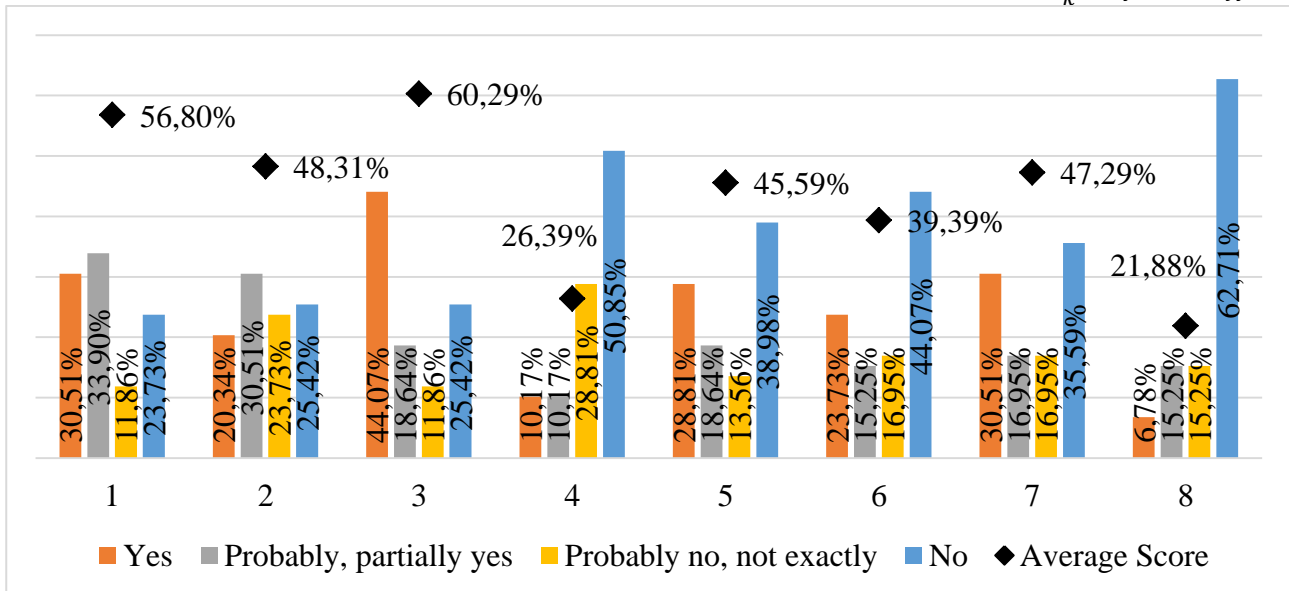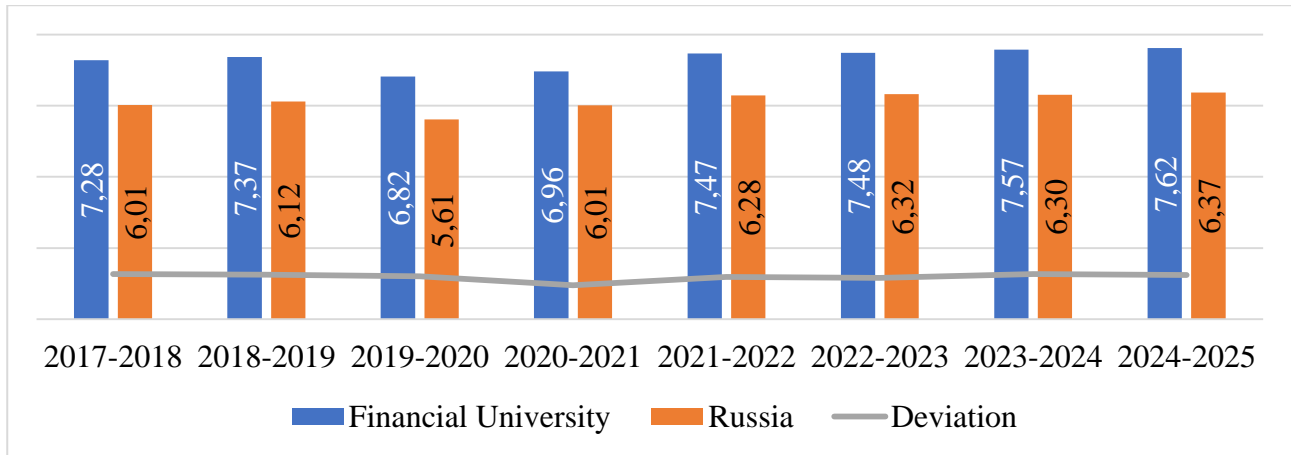

Fig. 3. The values of calculated indicators for evaluating the effectiveness of the functioning of student communities and at the Financial University
Source: compiled by the authors

Based on the proposed methodology the following recommendations can be established to improve the efficiency of the functioning of student communities:
- support of the current development of student communities functioning effectively, including budget financing;
- development of more effective goal-setting system for non-scientific student communities;
application of the student self-government practice used by scientific student communities to non-scientific organizations;
- rotation of non-scientific student communities from the departments of extracurricular work of universities to the management of "relevant" Vice Principal responsible for work with students/student communities.

It is worth noting that the difference in the actual and calculated evaluation is a consequence of the student's engagement in the process of student self-government and can be characterized as goodwill (reputational effect) of the student community:

$$G_{tij} = \beta_j \cdot \left(E_{tij} \cdot \frac{T_{ij}}{Ti} \right) - \gamma_j \cdot \left(\frac{10}{k} \cdot \sum_{p=1}^{k} Wf_{tijp} \right)$$

The goodwill can be estimated at 58.7 % for the SSS and 68.1 % for the SC (in average for the university – 64.1 %). for the student communities of the Financial University in 2021–2022 academic year. It is important to note that the goodwill of the student community is an absolute factor in improving the efficiency of the functioning of the community, as well, due to the effect of attracting junior students.

3. Results
Student professionals should understand how better to develop and implement targeted strategic educational opportunities that will contribute to improving students' cognitive skills and personal qualities. As a result, employees of the educational base used to create a youth association can get the opportunity to analyze the "live experience" of students and information

updated directly by young people about why they are interested in participating in youth associations. Such result will allow the heads of the educational organization to structure programs, services and channels of resource allocation, reinforcing the importance of the participation of student associations.

Due to the existence of two key forms of student communities in the structure of student self–government: student scientific societies and student councils, it is possible to determine the development of student self-government as a function coming from the development of two specified forms of the following type: $W_t = \sqrt{W_1 \cdot W_2}$, where W_t – this is an integral indicator of effectiveness of functioning of student communities, W_1 – this is an integral indicator of effectiveness of functioning of scientific student communities, W_2 – this is an integral indicator of effectiveness of functioning of non-scientific student communities. Visualization of the dynamics of the presented model is shown in the Figure below (see Figure 4).
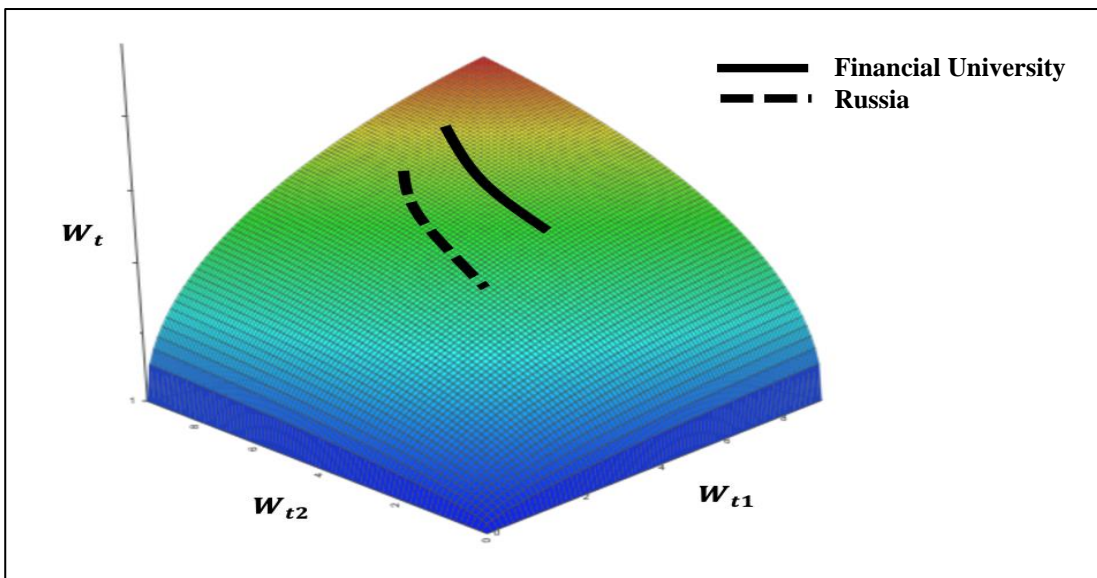
Fig. 4. The values of estimated indicators for evaluating the effectiveness of the functioning of student communities and the Financial University
Source: compiled by the authors

Based on the formed models, it should be underlined that knowledge-intensive student communities are developed at the Financial University and in Russia quite qualitatively and perform activities with an efficiency of 70-80 % as a whole, and student councils, as a form of student communities with diversified approach and unclassified goals, require developing and determining conceptual content.

It is also worth considering the quality of the answers to the questions from the Table 2. According to the students' opinion student self-government and student communities are necessary primarily for the participation of students in managing the university and improvement of educational process, as well as for leisure and extracurricular activities.

Table 2. Survey of students related the topic about the importance of student communities of the Financial University

Item #	Proposed Option	Outcome
	1. 1. Why do students need student self-government in your opinion?	
1.1.	For participation in managing the university and improvement of educational process	84,7 %

Item #	Proposed Option	Outcome
1.2.	For leisure and extracurricular activities	71,2 %
1.3.	To gain manager's skills	55,9 %
1.4.	To unite university students into a single community	67,8 %
1.5.	To solve every day and social problems	62,7 %
2. Why does the university administration need student self-government, in your opinion?		
2.1.	To establish and maintain the corporate culture of the university	76,3 %
2.2.	For the arrangement of extracurricular work with students	66,1 %
2.3.	To improve the quality of the educational process	72,9 %
2.4.	For reporting to the controlling ministry bodies	20,3 %
3. Do you think student self-government bodies can influence daily life of students at your university		
3.1.	They can, if the rector's office (dean's office) gives them such an opportunity	64,4 %
3.2.	They can, if they have the funds to implement their projects and programs	54,2 %
3.3.	They can, if they are supported by reputable teachers	30,5 %
3.4.	They can, if they are supported by the majority of students	42,4 %
3.5.	I doubt very much that this is possible	11,9 %

Source: compiled by the authors

In addition, according to the students' opinion, the university management requires the presence of student communities to establish and maintain the corporate culture of the university and to improve the quality of the educational process.

At the same time, according to students' view, student self-government bodies can influence the daily life of students under circumstances that appropriate opportunity is provided by the university management and if there is appropriate financing.

Based on the conducted survey and the developed methodology, it is possible to establish the need for cooperation between the activities of students and the university management related to the organization of the activities of student communities, as from the side of determining the motivation system as from the side of conducting economic activities, including aspects of financing student communities. To achieve this task, we reiterate the importance of forming a centralized intra-university system for organization and control of student communities, including creation of appropriate administrative divisions under the leadership of the "relevant" Vice Principal responsible for student communities.

Moreover, as for the management of higher educational institutions as for the state, a student-centered strategy is optimal, which is focused on the centralized approach to maintaining the current level of students' engagement in knowledge-intensive student communities and the development of non-scientific communities aimed at socializing students by native standardization of the principles of their functioning.

4. Discussion
When creating a youth association on the basis of an educational organization, it is necessary to take into account the specifics of students' engagement in the work of such group. Astin's theory of engagement correlates with this requirement. So, in 1984 Austin developed a framework for exploring the idea that when students are more actively involved in the educational environment, they are more likely to succeed. Astin defined this process as the "inputs-outputs-environment" model, in which inputs are elements such as a student's biography and views, which are influenced by outputs – those elements that are based on the skills the student has acquired, and his

interaction with the environment is considered as well. Simply put, this theory is defined as an interactive "person-environment" model that focuses on variables of time and commitment in the context of student's engagement in studies at the relevant college or university (see Figure 5). (Astin, 1984; Abdullah et al., 2015).
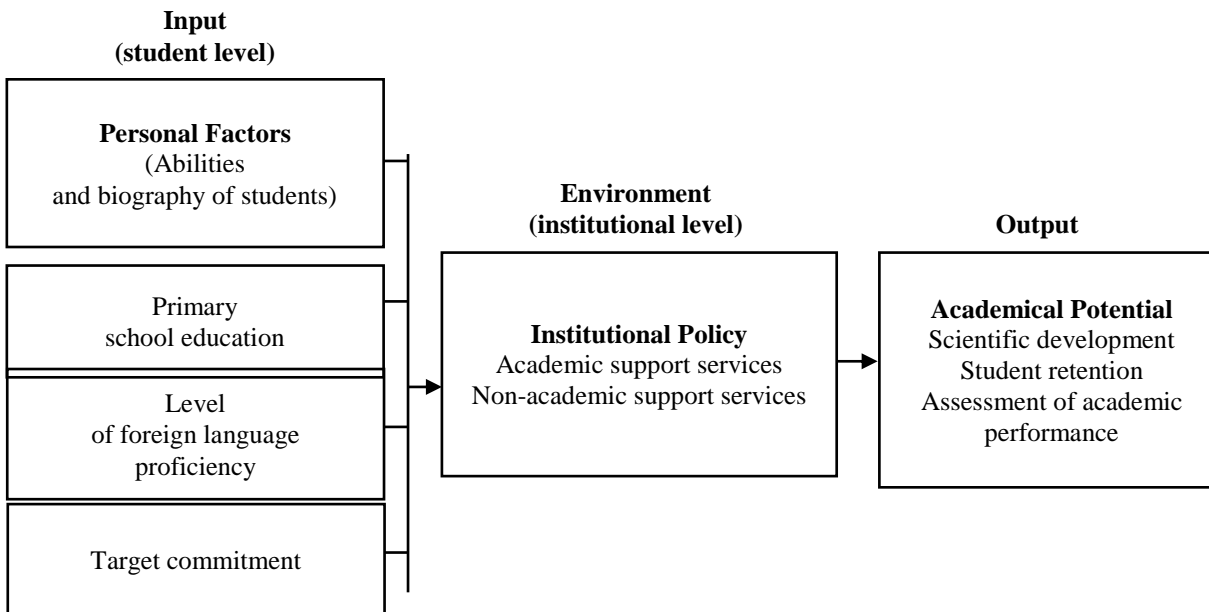
Fig. 5. The structure of Austin's engagement model (Wilmer, 2009)

It is considered that the description of these mechanisms has a direct impact on the landscape of higher education. Conclusions about the students' engagement have been made based on the observations on young people, their entrances, exits and environment, as a result, it turned out that young people, who participated in women's or men's associations, fraternities, and any kind of social activity, are more likely to stay in an educational organization and continue their education. In addition to student resilience, interest in developing talents and cultivating excellence in education has contributed to the development of student engagement theory (see Figure 6).

The point is that, in spite of student retention is certainly an important parameter of the effectiveness of a particular approach in education, the most important is the formation of a student and his talents, what is more complex than just the development of cognitive abilities. Therefore, student engagement theory recognizes the usefulness of developing talents and skills through a variety of different activities and programs.

Such interpretation of engagement is more holistic, since it takes into account both what the student brings to the educational environment and what the educational institution provides. As already noted, the theory is based on three pillars: inputs, outputs and environment. In addition to these three elements, five main statements or postulates are considered as next:

- engagement refers to the amount of physical and psychological energy that a student devotes to the learning process;
- regardless of the object, engagement occurs on a continuum, what means, different students show different degrees of engagement in relation to different motives at different times;
- the volume of training and personal development of students associated with any educational program is directly proportional to the quality and quantity of student engagement in this program;
- the effectiveness of any educational policy or practice is directly connected to the ability of this policy or practice to increase student engagement (Berger, Millem, 1999).

Thus, the concept focuses directly on the behavior and motivation of students as a mean of evaluating the degree of learning and growth that occurs due to student engagement. Each of the above statements or postulates forms the result of the student's engagement. Guided by the highlighted serifs of youth involvement in the work of a youth association based on an educational

organization, it is possible to assess the potential of such a group, to identify strengths and weaknesses what is considered when joining. However, to do this, it is necessary to understand each of the zones of engagement:

- Release of psychosocial and physical energy;

After reviewing why students can join student organizations, it is important to determine how each student's perception of participation and engagement, as well as their willingness to release the necessary energy, influence whether they will participate in a student group or not. And although engagement is directly influenced by the attention paid to the organization and the belief in its importance, which leads to a more positive result, the question that is important to consider is whether the time and energy costs affect a student's decision to join a student organization?
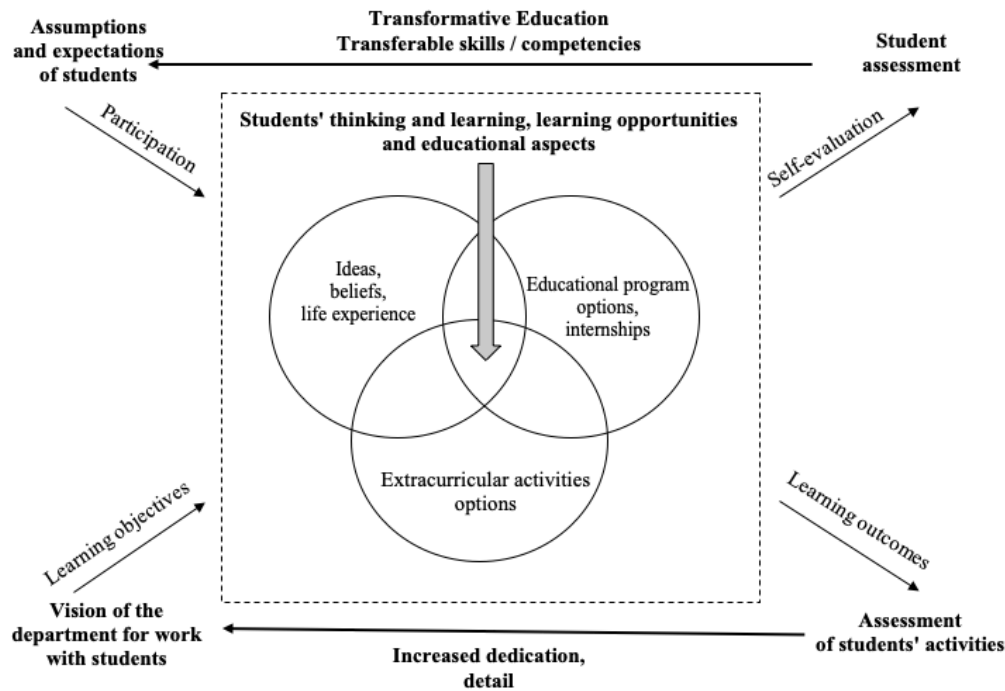
Fig. 6. Map of the educational system (Malekzade, 2020)

- Engagement is directly proportional;

The amount of time spent, as well as the quality and quantity of experience influence on student engagement. The issue for this area may be whether students have participated in student organizations before, and whether there is a correlation with participation that facilitates further engagement, especially if it was a positive experience. For example, there are direct connections between peers, which expands opportunities for engagement. At the same time, the strongest source of influence on cognitive and affective development is the student's peer group: the better the interaction with peers, the more effective the result.

The implications of this finding are very important for confirming the influence of student organizations on student development, as well as when considering why students join student organizations. In this regard, awareness, how these behaviors affect engagement, can help student professionals figure out why students join student associations initially.

- Consequences of institutional policies or practices;

When considering why students join student organizations, it is important to understand how institutional policies and practices, as a means of attracting to clubs and associations, support opportunities to increase student engagement. Moreover, if the policies or practices do not facilitate or poorly facilitate participation in student organizations, then a different question arises, if they should be reviewed to find ways to encourage more active student participation.

Of course, this approach to evaluation has its own limitations. Thus, the approach relies on the individual experience of students too much, without taking into account the organizational

perspective. That is, an educational organization in this case is only needed in the sense that the effectiveness of any educational practice is directly connected to the ability of this policy or practice to ensure engagement. However, the unit of analysis and the focus of attention is the individual student, what calls into question the effectiveness of the evaluation practice as a whole.

Finally, there may be criticism about how engagement is measured. For example, one group of researchers can study membership in clubs and organizations and estimate the number of people involved, while another group can study the degree of engagement by the quantity of hours of participation. As a result, there are many different approaches to the study of engagement, which potentially leads to inconsistencies.

However, the exploration of that, why students of an educational institution decide to participate in extracurricular activities, in particular, in student and youth associations, is the key to developing an effective program for each, purely unique student platform. It is important for teachers and employees of educational organizations to understand all the components associated with the development of student activity. Analysis of the relationship between a student, student organizations and student engagement can improve the educational environment and provide opportunities for student growth and development.

5. Conclusion

In that way student youth associations are one of the key factors in developing a sense of belonging to an educational institution, thereby providing support for the efforts of an educational organization to retain students. If a student does not feel engaged in the study material, then a high probability appears that he will not continue his education and will not graduate. The evolution of student organizations along with the movement of student unions offered students a space to cultivate a sense of belonging to the student community, as well as provided opportunities for engagement and learning. Before the occurrence of student organizations, this connection between learning and engagement was not obvious.

The emergence of youth associations based on educational organizations has defined the role of youth student groups as the basis of the concept of intellectual growth focused on a holistic approach to student development. However, the research of the evolution of student organizations made it possible to hear and evaluate the role of the voice of young people and youth representatives.

Moreover, the development of student unions has sanctioned the necessary emphasis on the possibility of extracurricular activities, what contributes to improving the quality of education. Youth associations based on educational organizations show that to grow and to develop the ability of critical thinking students must be able to establish links between their own ambitions in learning and the current problems of society.

6. Acknowledgments

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Modern Stoicism at the XXI Century University

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Abstract

The Covid-2019 pandemic has already demonstrated that modern people reflect less about the border between the real and virtual worlds. Being connected to the Internet 24/7, they become a temporary vessel for information passing through. This problem of information flow is painfully reflected in university education. In the circumstances of the overabundance of information, Humboldt University functions as a metanarrative. Therefore, the key research question is; how can an educator can help a student overcome the problem of objectification and become a free reflective subject of the educational process? Stoic practices seem to be the answer.

This article is devoted to the study of the application of Stoic practices at a university. Modern education provides the student with a collection of data but does not help to find answers to the questions of existential dimension as; who am I?, Where am I from? And where am I going? The first part of the article elaborates Stoic practices in the modern world, reflects the history of the issue and the specifics of modern Stoicism. We express our vision of modern university education and its problems. The university as a metanarrative turns educational actors into passive objects. In our opinion, this contradicts the very idea of education as the development and formation of a person. The second part of the article represents the research methodology and answers a practical question about the possibilities of applying Stoic practices at a university. What made it possible is the educators' orientation to the actual need of students in finding themselves, and the autonomy of their participation through the form of keeping a diary complemented by group meetings. In the third part, we analysed the study results and outlined the directions of the inner changes the students discovered. Our goal is to express the concept of "Vir bonus" as an original practice of taking care of oneself, that can be implemented by a modern student in the process of realising and overcoming the problem of objectification, in the development of critical thinking, and the virtues endowment on the way to a good life.

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Keywords: stoicism, modern stoicism, modern university, metanarrative, subjectification, student, education, critical thinking, slow reading, good life, virtues, existential dimension, digital age, digital anthropology.

1. Introduction
1.1. Prolegomena to Modern Stoicism

In a collection of 124 Moral Letters to Lucilius, Seneca greets Lucilius at the beginning and wishes him good health at the end. Presumably, these letters would have remained the property of only one addressee, and would not have been included in the history of philosophy if they had not touched upon significant philosophical topics (morality, virtue, conscience, happiness, justice). They were presented in the form of a diatribe outlining moralistic philosophising, not in a complicated logical portrayal, but in an emotional appeal to the addressee when Seneca relied on memorable cases to demonstrate his thesis.

In the first letter, Seneca invites Lucilius to "set himself free for his own sake" (Seneca, 1917). With the letters, Seneca seems to sum up all his philosophical commitment. He created the letters next to the end of his political career when he witnessed the republic turned into an empire (Rome, 1st century AD). According to Seneca, perturbations in the external (namely political system instability) contributed to the adjustment of a person, to the creation and strengthening of his or her inner core, and a durable system of moral values. In this context, Seneca's appeals to grasp and capture the present-day sound differently: it is not time that controls a person, but vice versa:

(2) What man can you show me who places any value on his time, who reckons the worth of each day, who understands that he is dying daily? For we are mistaken when we look forward to death; the major portion of death has already passed. Whatever years lie behind us are in death's hands/Therefore, Lucilius, do as you write me that you are doing: hold every hour in your grasp. Lay hold of today's task, and you will not need to depend so much upon tomorrow's. While we are postponing, life speeds by (Seneca, 1917).

In this "setting-yourself-free-for-your-own-sake" appeal one perceives the Stoics' quest for objective truth, which is acquired not by common faith but by the seeking mind. This mind is focused not only on comprehending the external nature but also on the internal nature, namely a human. Searching for this nature and discovering it is the primary goal of Stoicism. One who lives following his or her nature has attained knowledge of a true good (Seneca, 2017: 3-5) and lives happily (Seneca, 2017: 9). Seneca calls such blissful ones as "Vir bonus", men that are not valiant but virtuous (Seneca, 2017: 29).

1.2. Modern Stoicism as a Practice Applied by Vir Bonus in the XXI century

The third period in Stoicism is called the New Stoa. This period marks the end of Stoic practices in the nascent Christian world (III-IV c.). However, Stoicism again came to the fore in philosophy in the XVI century, in alliance with Christianity. This mix was called Neostoicism and is associated with the name of the humanist Justus Lipsius (Sanzhenakov, 2018).

The revival of interest in Stoic ideas and practices happened only in the twentieth century. It is associated with the names of two French philosophers, P. Hadot and M. Foucault. The first drew the attention of a predominantly academic philosophical audience to the history of Stoicism as a system of unique spiritual exercises (Hadot, 2002); the second used the interest of European and American student youth in performing the system of Stoic practices as *technologies of the self*, accessible and relevant for a person of the twentieth century (Foucault et al., 1988). It seems that technology has become a practical tool in answering the question of the potentialities for applying the practice of taking care of oneself, the theoretical concept that in ancient Greece was called *επιμελεια εαυτου* (Foucault et al., 1988).

According to M. Foucault, self-care was one of the key principles in a free city-state citizen existence; such concern was not based on intention, but the act regulating the social and personal life of a person. In turn, the twentieth century with its visible crises and perturbations provoke French philosophers to return to Stoic practices because a person experienced a kind of loss in the transforming external (World Wars I and II, political crises namely the power of communists in Russia, fascists in Germany and Italy, economic post-war stagnation). In this case, taking care of oneself is a person's search for the self-enclosed within himself. According to P. Hadot and M. Foucault, the task of a person who addresses himself, as philosophers and theologians did two thousand years ago, was to learn to talk to himself again.

The Modern Stoicism movement is dedicated not only to the ability to talk to oneself, but also to *live* with oneself, in the broadest sense of the word. In its short history (since the 1990s), the movement has grown from a small group of enthusiast meetings online (*New Stoa*, the first lasting Stoic community) and offline (*The first Annual Stoic Week* at the University of Exeter) to international conferences open to a wide audience (e.g. *Stoicon*). To get an idea of the movement scope, one should look at the website created by Patrick Ussher and Greg Sadler and its diverse event tracks (https://modernstoicism.com/).

Today the contours of the movement scale are outlined by the number of books on Stoicism. If Epictetus, Seneca, and Marcus Aurelius are considered "old" guests on the libraries and bookstore shelves, then, since 2008, new names have been added to the ancient Stoics: Lawrence C. Becker (Becker, Becker, 2017), William B. Irvine (Irvine, 2009), Massimo Pigliucci (Pigliucci, 2017), Donald Robertson (Robertson, 2019), Ward Farnsworth (Farnsworth, 2018), Ryan Holiday, Stephen Hanselman (Holiday, Hanselman, 2016) and others. In their books, modern Stoics talk about their path to Stoicism (Massimo Pigliucci), refer to the foundations of Stoic ethics through the concepts of *virtue, good, happiness,* and *better life* (Lawrence C. Becker, William B. Irvine, Ward Farnsworth), ask questions about how to use the wisdom of famous Stoics in our everyday challenges (Donald Robertson, Massimo Pigliucci) and even offer a modern reader a system of daily stoic exercises (Ryan Holiday, Stephen Hanselman).

The academic environment does not show such a strong interest in the ideas of Stoicism. However, since the late 1980s texts on Stoics and Stoicism have been appearing in the pages of scientific journals and books. For instance, the work of S.K. Strange and J. Zupko, professors from Emory University, United States, on the influence of Stoicism on the philosophy of medieval and modern periods, modern philosophy, and psychotherapy (Strange, Zupko, 2004) and historical and philosophical work by T. Engberg-Pedersen, professor at the University of Copenhagen, Denmark, on the transition from Stoicism to Platonism during the early days of Christianity (Engberg-Pedersen, 2017). What also is impressive is the work in which A. Still and W. Dryden (Goldsmiths College, University of London, United Kingdom) track the connection between spiritual exercises from the writings of Epictetus and modern psychotherapy (Dryden, 2018). In 2012, with the editorship of M. van Ackeren, a collection of essays *A Companion to Marcus Aurelius* was published. It was dedicated mainly to Marcus Aurelius, but also to the other Stoics (van Ackeren, 2012); there A.A. Long builds his thoughts around the problem of the self in Stoic practices (Ackeren, 2012). In some scientific articles, modern scholars refer to the Stoic figures (Berryman, 2010) or Stoic practices, eudaimonia and απαθεια (Lehmann et al., 2019; Kraye, 2012).

These materials register the growing interest of a wide, chiefly non-philosophical audience in the Stoicism practices. Many of the authors who consider themselves to be modern Stoics in Stoicism see the core of morality and ethics for a modern person, who lives in a situation of permanent perturbation, which today affects not only the real world but also the digital environment.

Finally, the article by Ard Kramer, a software tester from the Netherlands seems demonstrative. The OrangeCrest tester unambiguously states that the rapidly changing world (real and digital) complicates the tester's work. Ard Kramer himself found a recipe for doing his job well in four Stoic virtues: courage, justice, wisdom, and moderation (Kramer, 2021). In our opinion, the very appeal of a non-philosopher to the Stoic virtues indicates that in the twenty-first century Vir bonus still exists among us using daily Stoic practices.

The purpose of our research is to substantiate the idea of including Stoic practices into the educational process as a form of free student activity with the aim of critical perception of himself and his schedule.

The hypothesis of the research is that Stoicism can serve as a practice that allows a student to go beyond the student-as-an-object-of-education metanarrative and become an independent, free, and critically thinking subject in education. Acting on the research hypothesis, in the 2020–2021 academic years we conducted a series of events with second-year undergraduates of the South Ural State University (Chelyabinsk, Russia).

2. Theoretical Framework and Methodology
2.1. Comments on Design and Method
Modern education is often described in terms of economic transaction, where an educator is a provider and the student is a consumer. A major part of the methodological reflections in this

part are inspired by educators who are strongly against this "shopping attitude" to education. The key methodological question of the experiment was how to create educational space for students to exercise their subjectivity. G. Biesta argues that subjectification in education is the most important domain among qualification and socialisation. We agree that it is important to pay as much attention as possible to the educational situations that can remind a student that they can exist as a subject, "particularly in the context of the contemporary obsession with the domain of qualification" (Biesta, 2020b: 102). Subjectification is a phenomenon when "education impacts on the student as an individual, either by enhancing or by restricting capacities and capabilities" (Biesta, 2020b: 92). G. Biesta's attitude to subjectification is based on the idea of freedom viewed as an existential matter (Biesta, 2020b: 93). Education as subjectification is "about being a self, being a subject of your own life" (Biesta, 2020b: 94) and "denying the comfort of not being a subject" (Biesta, 2020b: 95).

Our role as educators in the experiment provided us with the strong methodological problem formulated by I. Kant as the educational paradox: "How do I cultivate freedom through coercion?" (Schaffar, 2014) An educator is always in a position of power that contradicts exercising a student's freedom in terms of subjectification. So, our role in designing the Stoic experiment was to give students an opportunity for "coming into presence". We had the existential intention to give our students, not skills per se, but instead, to show ways of being through an experiment because skill or knowledge cannot occur without a subject.

We agree that the new language of education should be concerned with three concepts: trust without ground between actors in education, transcendental violence, responsibility without knowledge (Biesta, 2005: 60). G. Biesta offers a set of special parameters for subjectification in education to meet. The most important one is that subjectification requires a so-called "reality check", or "interruption" of reality welcomed in the classroom. Meeting the real requires time, so the second principle is 'suspension' – slowing down, giving time to meet existential freedom and work through it. We agree with a critical analysis of fast reading strategy conducted by Milena I. Tsvetkova and support slow reading movement, "the philosophy of slow reading offers also a chance for happiness of the disorientated by the fierce speed of the multitasking and of the depressed, the desperate, the unhappy by lack of time people" (Tsvetkova, 2017). In general, the idea of "slowness" is increasingly referred to in modern philosophical discourse as a virtue. For example, N.C. Burbules examines philosophical dialogue through the prism of "slow writing, slow reading and slow philosophy" (Burbules, 2020). The third principle is 'sustenance' or support provision. All these aspects were implemented during the experiment design process. Philosophical practitioners from Norway respond in their own way to the problem of subjectification in education. Their response is implemented in a dialogue form (Noah Weiss, Hansen Helskog, 2020; Hansen Helskog, Noah Weiss, 2021).

Dialogue form was an aspect of crucial importance for the experiment design. It is "beneficial when teachers and students share responsibility for the content and process of the dialogue" (Rombout et al., 2021). With the reference to G. Ten Dam and M. Volman, F. Rombout, J.A. Schuitema and M.L.L. Volman states that "arguments for a dialogic approach to critical thinking education are that such an approach actively involves students in collaborative meaning-making" (Rombout et al., 2021). Meaning-making process is connected to existential dimension of education that we found important because of the students' needs observation shown below in the results section (the gap between the inner, existential experiences and outer dimensions in the modern student world). Also there is an obvious concern that "many students do not participate in whole-class dialogues" (Frøytlog, Rasmussen, 2020). So, constructing positive and fruitful dialogue experience that starts at the university and leads students forward is seen as a key objective for dialogic pedagogy. The outlined practice for the experiment can be viewed as a generative dialogue ("The I-in-now") in co-creation of learning that implement collaborative process, transformative interaction, collaborative output, collaborative outcome, learner's agency, and new space for learning. "As an outcome through generative dialogue a new knowledge is co-created" (Kaminskienė et al., 2020), and this knowledge has existential dimension (S. Kierkegaard). However, dialogue as a chosen form of the experiment has its own limitations. We agree there is a need for "establishing communicative norms in the classroom where thinking together is encouraged" (Frøytlog, Rasmussen, 2020). These limitations can be

overcome by digital technologies or, as we maintain, by an implementation of diary form of students' self-dialog.

The experiment invited South Ural State University bachelor students of the second year to join voluntarily. An online survey based on Google forms was employed as the main method of gathering feedback during the experiment. The first part of the survey (pre-reflection) conducted in February 2021, the second one (post-reflection) was in June 2021, on an anonymous basis. The pre-reflection survey aimed to define the student's subjective feelings about the quality of their life. The post-reflection stage collected subjective data about the results of the work (see more about the results in the Discussion section below). The experiment itself included two forms of work: non-discrete (self-dialogue of a student daily within a framework of the Stoic Diary) and discrete (offline group meetings twice a month for meditation and slow reading practice).

2.2. Self-dialogue with a Stoic Diary

One of the key results of the work was the elaboration of the Stoic Diary, a guide to Stoic thought created in a reflexive format, which assumes a student's independent philosophical journey for three academic months (March, April, May, 2021). The Diary was designed for a self-sufficient experience with pieces of the original texts of the Stoics and diary practice for 12 weeks. In the process of this work, the student becomes acquainted with three iconic Stoics, and fragments of their works, learns to develop their reasoned position regarding Stoic philosophy, and attempts to feel like a Stoic in the modern world. "The most original feature of late Stoicism: the self-dialogue, which becomes the vehicle for practising philosophy and gaining self-knowledge" (Renz, 2017: 63).

The diary is a selection of fragments of the surviving works of three representatives of the Roman-Hellenistic period Stoicism: Epictetus, Seneca, Marcus Aurelius. Selected works for reading and reflection are *Enchiridion* or *The Handbook* (Epictetus, 1-4 weeks), *Moral Letters to Lucilius* (Seneca, 5-8 weeks), *Meditations* (Marcus Aurelius, 9-12 weeks).
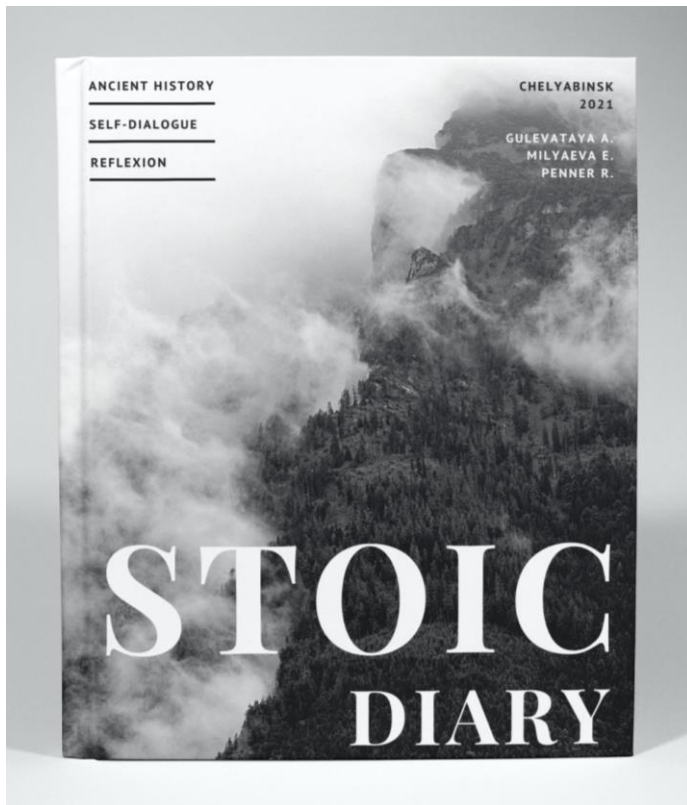

Fig. 1. Stoic Diary. The cover

It is remarkable that in the diary journey, students get acquainted with the slave Epictetus, the poet and teacher Nero Seneca, and Emperor Marcus Aurelius. Of course, each of the Stoics

made a significant contribution to the treasury of philosophical thought, but we, as a team of research authors, focus the attention of the participants in the experiment on the fact that in this practice we are not involved in the history of philosophy; but if these philosophical ideas can be useful to the students in their everyday lives. Thus, keeping a Stoic diary is not a theoretical subject: we emphasise that we do not have a goal for the students to read as much as possible about the Stoics and the texts of the Stoics themselves. On the contrary, we offer fruitful reflexive work with oneself through the thoughts and ideas of the late Stoics, focusing not on the amount of reading, but the quality of immersion in the text, and the level of its comprehension concerning our everyday life.

The method of keeping a Stoic Diary involves reading daily fragments of the text. We encourage the students to read a fragment of the day slowly, thoughtfully, preferably aloud in the morning. After that, if possible, we asked them to close their eyes and think about the text not only in words but also in abstract images. Further during the day, it was important to keep track of the moments when something unpleasant happens, stop and ask yourself the question about the level of significance of what is happening. At this stage, the students chose the degree of significance of the event for themselves: it can be significant in a negative sense, it can contain hidden advantages, or even be neutral. At the end of the day, they need to re-read the fragment and assemble the details of the day into a whole, slowing down at key points. After that, it was important to write down thoughts next to the Stoic text, thinking about whether they managed to study the Stoic lesson of the day and if this lesson helped that day – on a specific day with its specific, peculiar and unique events.

In the proposed method, consistency and self-reflection habit development are important. The work begins with the very first text (Epictetus) and goes sequentially to the last one (Marcus Aurelius), the student does not skip fragments and does not run ahead. One day is equal to one piece of text. Every day they need to commit a certain amount of time (from 15 to 60 minutes) in their busy timetables. The participant was advised to use any relevant method of concentration: meditation, deep breathing, affirmations, etc. After that, they should focus on the given fragment of the day employing slow reading practice. At the end of each week it is proposed to grasp the experience of keeping a diary for six days, and to record in writing any thoughts in two diary entries: *Letter to the Author* (questions, comments, suggestions) and *Mirror* (what I learned about myself reading the author's text). At the end of each month, it was recommended to summarise the reflections, compiling daily experiences for a month. For this, the following diary entries are proposed: *Theoretical Benefits* (what I have learned in the aspect of the philosophical thought history); *Practical Benefits* (what Stoic ideas I want and can implement in my everyday life); *Unanswered Questions*; *Life Flow* (will it be important to come back to the Stoic text and when); *Takeaway for my future* (precise practical steps after reading the Stoic).

The existential experience of a philosopher, presented in the form of diary entries, is not just a kind of philosophical knowledge but represents a real experience of being, so this idea opens up an existential dimension of education: "Existential education is not about obtaining objective truth, it is rather a matter of obtaining subjective truth" (Saeverot, 2013: 3).

According to our idea, with the help of the diary, each participant of the experiment can step the philosophical path independently; and for everyone this path is their own, subjective, individual, unique, personified. Thus, the experiment in the format of diary entries is a journey towards oneself in a polylogue with another with reflection maintenance and in a constant internal dialogue with oneself, and an attempt for educational space for subjectification.

2.3. Group Stoic Meetings

Self-dialogue was supported by offline university meetings that were free to join and usually included 8-12 students and three educators; one as a discussion leader, two as observers. These meetings followed 5 stages: (1) introductory discussion about everyday matters; (2) meditation for relaxation; (3) slow reading of a given Stoic text fragment; (4) self-reflection upon a text; (5) polylogue in a group. The methodological content of these stages is discussed below.

Stage 1. Introductory discussion about everyday matters is a "reality check", or "interruption" of reality. Educational communication is an open and undetermined process. So, unpredictability of an open discussion is also a part of the method. The experiment in general does not require a definite outcome, because it is designed as an existential challenge, that is always urgent and never resolved. No 'learning outcomes' for the experiment were defined in advance.
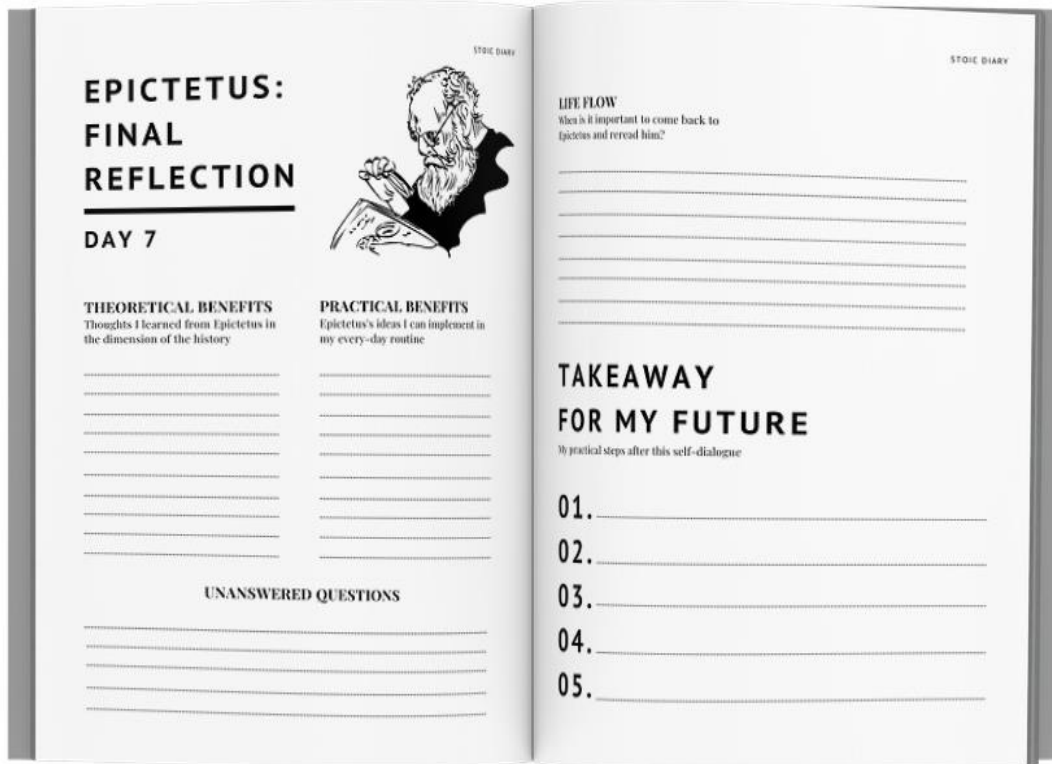
Fig. 2. Stoic Diary. Final reflection of the week

In order to check reality, it was valuable for us to create a space where students could share their vulnerability without being judged. It is good to remember that "if we ask academics to hold students in a space of vulnerability and uncertainty in which they can embrace their own beings, it is necessary that we create the kind of environment where academics can explore their own vulnerability and uncertainty" (Berg, Seeber, 2016).

Embracing the challenging disturbance is an emotionally uneasy task for both educators and students. It is a problem of trust as M. Platz puts it (Platz, 2021). Unlike educational events designed in the edutainment paradigm, this experiment was designed to present the students with difficulties, challenges, and risk, it was pronounced clearly that it was not something easy, attractive, and exciting. But, in our opinion, it is worth taking risks for education actors who are already frustrated by being "objects of approval and disapproval, both by others and the person" (Danziger, 1997: 145). The first stage helps to re-comprehend educational space not as a place of approval and disapproval, but as a place for existential subjectivity to come into being without any evaluation.

Stage 2. Meditation for relaxation provides a powerful embodiment shift. The meditative component of group meetings and the elements of body relaxation techniques were aimed at overcoming the dichotomy of the mental and bodily in the academic environment. Relaxation and meditation exercises were carried out according to a pre-planned method and depend on the educator's personal preferences (simple gymnastics, Qigong exercises, any version of Pranayama, yoga breathing techniques). These practices are based on ancient philosophical ideas and their effectiveness has been proven by modern science (Waters et al., 2015; Ramsburg, Youmans, 2014; Russo, 2019).

Stage 3. Slow reading of a given text fragment Slow reading is a small part of a wider slow life cultural movement. The academic members of this movement are concerned about the frantic pace of modern university life (Berg, Seeber, 2016). In such a pace it is impossible simply to be here and now, to connect with an existential dimension. In a rushing life, slow reading technique as opposed to speed reading, acquires special relevance. Modern students experience "information fatigue syndrome" (D. Lewis), "information overload" (B. Gross, A. Toffler), even "analysis paralysis". "The educational way, the slow, difficult, frustrating, and weak way, may therefore not be the most

popular way in an impatient society" (Biesta, 2013: 4), and we bravely face this risk. It is the philosophical text that is the basis, and the key prop for the group work. The educators use the existential dimension of philosophical texts to start a deep reflection process, and then a discussion. The participants read the proposed fragment of the text calmly, without tension, very slowly. For the first time a text is read to themselves, and aloud for the second time, one by one. So, the fragment is repeated aloud several times in the group.

Stage 4. Self-reflection upon a text. At this stage we again employed the discussed above 'suspension' principle – slowing down, giving time to meet existential freedom and work through it. This is a reading-into-writing part of the meeting. The facilitator can suggest a variety of exercises (making notes for themselves, freewriting, finding *subjectively* key words, creating a piece of poetry, etc.). One formal moment of group meetings is important to mention here – we decided upon a deliberate rejection of all digital formats for reading and writing, and instead returned to analogue means of communication. This is important in terms of embodied cognition: "disconnect to reconnect", so to say.

Stage 5. Polylogue in a group. The main idea here was not a demonstration of one's awareness in the field of philosophy, but true philosophising; the practice of elaborating one's own personal worldview. The responsibility of the educator at this stage was to convey this attitude to the participants, releasing them from unnecessary stress associated with the uncertainty of their cultural baggage and philosophical experience.

The axiological vector of this group work can be defined as follows: respect for the otherness, calm attitude to the polyphony of the opinions expressed, valuelessness, inclination towards acceptance and openness, and desire for a natural flow of dialogue. To approach the education event as an art, not a science. One can find methods of existential psychotherapy like the method pronounced here in seeking an individual approach to a person, and as it is an example of uncertainty, dialogue and co-creation of the therapist and the client. A breakthrough to being is carried out intuitively, and intuitive cognitive experience cannot be reduced to formal methodological recommendations. That is why the development of the axiological principles of the experiment is an important part of the reflection of its method.

At that point we can conclude that with the help of discussed methodological approach the experiment became an educational event of subjectification, "when individuals resist existing identities" (Biesta, 2013: 7), an experience of 'coming into presence' (Biesta, 2005: 62), not getting more and more information to make it internalised. The meetings were designed the way that every student had an opportunity to "to show who they are and where they stand" (Biesta, 2005: 62), because there was no specific "learning outcomes" to follow, and the agenda was elaborated during the flow of an event in terms of a virtue-based attitude to communication.

3. Results
Stoic Experiment at the University
3.1. Experiment participants

At the start, 65 bachelors of the second year studying at different faculties took part in the experiment. Participants were 60 % female, and 40 % male. The average of the participants was 19-20 years of age. Most of the participants were representatives of technical and natural science departments (chemistry, physics, heat power engineering, mathematics). The humanities were presented by journalists, historians, and linguists. As noted previously, participation in the study was voluntary, as it was recognised that it added an extra load to the students' usual educational practice and their participation in social and scientific events. All participants at the time of the experiment were mastering the General Course of Philosophy; experimental participation did not give them any "bonus" for the final grade.

The students' need for going beyond the Russian university modern system metanarrative is manifested in this study in the following features. In the introductory survey, participants highlighted family, friends, health, creativity, freedom of choice, and opportunities for self-development as the key components of a good life. Only 2 % of participants regarded education as a component of a good life. Participants understand a good life as an opportunity to satisfy material, spiritual, and intellectual needs in free choice circumstances. According to the participants, the university currently did not provide such an opportunity. We hope that with the humanization of higher education in Russia, such opportunities will gradually become available at the university.

At the beginning of the study, 20 % of the participants observed dissatisfaction with themselves, 15 % honestly stated that they did not see the meaning of their lives (at the end of the study, the answers transformed to 16 % and 13.5 % respectively). 37 % of participants noted that they often experienced anxiety and despair. We tell students that free psychological and psychotherapeutic assistance is available at the Student Health Centre. At the same time, most participants (60 %) indicated that they were satisfied with personal relationships (friends, relatives, classmates, etc.). These figures represent the gap between the inner (existential experiences) and outer dimensions in the modern student world. The inner dimension seems frightening to a young person who does not have the skills to reflect upon himself (actions and thoughts) and the world around him.

Most of the participants, before starting to work with the diary, had a general idea of the Stoic philosophers gained from the philosophy course. At the same time, 22 out of 65 participants (33 %) were ready to announce themselves as Stoics and 29 out of 65 (44.6 %) noted that a Stoic lifestyle in the modern world is more likely possible than not. After three months of independent and group work, 17 out of 37 participants (45.9 %) called themselves Stoics, and 20 out of 37 (54 %) participants agreed that in the modern world it is possible to attain a lifestyle that is based on Stoic virtues. The students participating in the experiment defined the Stoic way of life as the ability to be spiritually strong, to be aware of their place in the world, to build a system of value guidelines, and to determine to what extent life able to be controlled by an individual.

At the beginning of the study, most of the participants (65 %) defined the goal of their participation in the study as knowing themselves. Students used the following wordings: "Learn[ed] something new about myself and others" (30 %), "Understand myself" (22 %), "I want to understand myself and my life" (27 %). In addition, the following goals were identified: "to gain new knowledge" (32 %), "to learn how to keep a diary" (35 %).

3.2. Stoic virtues educating

Students were faced with the fact that participation in the study, and training of Stoic virtues, required both the sincere desire of the students themselves and their systematic work on themselves. We warned the participants about this as the diary work started, and focused their attention on the absence of any constraints, and control on the part of the teachers.

The conditions of daily dairy work without constant teacher supervision and lack of assessment for modern youth, accustomed to the fact that in the educational process each step is monitored and evaluated by "adults", turned out to be a difficult challenge. 37 participants (57 % female, 43 % male) persisted till the end of the three-month daily work with the diary. Those participants who quit at some stages noted that this happened due to the high workload. It is worth noting that those who finished, fully completed the tasks for the Philosophy Course and received good exam marks. Of those who stayed till the end, 51.4 % noted that they had difficulties with self-discipline. 29.7 % stressed that it was difficult to encourage themselves to think about important things daily. So, in a day crammed with routine and information noise, modern young men and women simply do not have time for the most important thing, namely genuine self-care for themselves. For most students, the skill of time and resource management is not developed either in the family or at school, only one individual out of 37 complained about the lack of time to complete the assignments.

Most of the participants who reached the end of the study stated that they had achieved the goals formulated for themselves at the start. In the closing survey, students noted that they were able to look through a different prism to adhere to "common truths" and apply them to their own lives and thoughts. The diary format helped to acquire self-control and master a habit of self-reflection, and to reflect on the fundamental issues of human existence. Two participants noted that the diary helped to cope with family losses, so Stoic practices became a kind of support in times of trauma.

One of the important results of the diary work is that the participants realised that their life depends primarily on themselves, on a Stoic attitude to themselves, to their time, emotions, on taking care of themselves not only on a physical level but also on a spiritual level. The participants regarded that the skill of reflection allowed them to comprehend their existential experience, which helped to overcome anxiety, stress, nervousness, and assisted to harmonise relations with oneself and with the

world around them. In the beginning, 23 out of 65 participants (35.4 %) noted that their life is full of meaning, and at the end, this figure changed to 17 out of 37 (46 %).

The aim of the given research was to validate the idea of incorporating Stoic practices as a form of voluntary student activity in the classroom, so the research is qualitative, not quantitative. A survey was designed to collect data on the thoughts and experiences of participants who were exposed to the practical application of Stoic ideas. The analysis of the thoughts and ideas presented by the participants allowed us to formulate and confirm the hypothesis about the possibility and prospects of using Stoic practices in the additional educational work of a teacher with higher education students.

4. Discussion
Possibility and Necessity of Modern Stoicism at the XXI-century University

We begin our search for a *Vir bonus* in a modern university by identifying the problems of the university and education in general.

In his work *La condition postmoderne* (1979) J.-F. Lyotard writes about the beginning of a new era, namely the era of postmodernity, associated with the end of the *great narratives* (Lyotard, 1984). Among the metanarratives J.-F. Lyotard distinguishes archaic narrative, classical science, and education. The common thing for the listed metanarratives is the legitimation of knowledge. It means that this narrative meets clearly defined criteria, formed in accordance with predetermined standards. J.-F. Lyotard associates the metanarrative of education with the originating of Freie Universität Berlin (early 19th century). Even though W. von Humboldt's memo proclaims the university's independence from any political power, the university's goals are formulated in the tone of ethical and social prescriptions: to cultivate science, to use it as a material for spiritual and moral education (Humboldt, 1998: 2). One glance at this document is enough to understand that it is not a denotative manner (a description of *how it is*), but a prescription manner (an indication of *how it should be)*.

J.-F. Lyotard is bothered not so much about the concept of the university as a metanarrative, but about the form of legitimation of knowledge that is inherent in it, namely effectiveness. The quality of undergraduate education is measured by the amount of knowledge packed into it. Times change, new students come to the old universities, but the problem of metanarrative is that the university is not a living organic system that optimally responds to changes in the external. Usually, the modern university announces the program that was consolidated in the 19th century, so it can be called the knowledge paradigm.

H. Arendt also worries about the knowledge paradigm. In *The Crisis of Education* (1954), she differentiates the concepts of learning and education. Only the first one is undeviatingly related to the knowledge building up; education, in its turn, is associated with preparing children for harmonious existence in an adult world. There H. Arendt goes:

"Education is the point at which we decide whether we love the world enough to assume responsibility for it, and by the same token save it from that ruin which except for renewal, except for the coming of the new and the young, would be inevitable. And education, too, is where we decide whether we love our children enough not to expel them from our world and leave them to their own devices, nor to strike from their hands their chance of undertaking something new, something unforeseen by us, but to prepare them in advance for the task of renewing a common world". (Arendt, 1954).

In order to "prepare them for the task of renewing a common world," education needs to go beyond the knowledge paradigm. Moreover, education should establish a secure balance between the old, on which the external to the child world is based, and the new, that the child brings into this world. Hence this interesting contradiction yields: *"Exactly for the sake of what is new and revolutionary in every child, education must be conservative; it must preserve this newness and introduce it as a new thing into an old world"* (Arendt, 1954).

G. Biesta extends the idea of education as a student *emancipation* (Biesta, 2020a), so education seems as a person's holistic preparation for existence in the outside world: *"subjectification has an orientation towards emancipation, that is, towards ways of doing and being that do not simply accept the given order but have an orientation towards the change of the existing order so that different ways of doing and being become possible"* (Illeris, 2018: 246). For several years he has been using the concept of good education (Biesta, 2016). The predicament

is that the "good" conveyed by the metanarrative is different from "good" from the learner's point of view. For a narrative, "good" is specifically measurable knowledge and skills; for a real person, it is an opportunity to holistically exist in the world, and not to be torn into fragments, in order to be an integral personality in his or her actual existence. A similar idea of "educational goods" is being developed by Harry Brighouse and colleagues (Brighouse et al., 2018). Scholars also focus on the fact that when thinking about the education of a real person, one should maintain a balance between external requirements (achievement, school Finance & Accountability) and the student's inner request (valuable experiences and freedoms) (Brighouse et al., 2020).

The contemplations above reflect the situation in Russian education. The process of education is regular and algorithmic; it does not always imply an understanding of what is being broadcast (like a stream). At the same time, broadcast expresses an attitude to a student as to an object, if a student is not asked what he thinks about what he hears (in general, it does not matter what he thinks and whether he thinks). In the context of the Covid-19 pandemic, the problem of student objectification in the educational process has intensified. This is indicated by the content of publications, where the authors mark the forced online turn of education as *"shock digitalisation"* (Nazarov et al., 2021) or a *"new normal"* (Nesterchuk et al., 2020). It is revealed in the teachers' difficulties to adequately transpose their material into an online format, and a low degree of student involvement in this modified educational process. "The formalization and dehumanization of education" in the digital era is perceived as a destructive consequence of digitalization (Frolova et al., 2020), that is the reason why existential dimension of education should be kept in mind as a possible vector of finding a solution for that.

Following the thoughts of philosophers and educators, we define the problem of our research within three arguments:

1. Higher education in Russia follows the form of a stream and requires a student to integrate into this stream without an individual critical assessment of the stream content;

2. In this educational context, a student is an *object of* activity, not a *subject in* activity;

3. For a student, education itself becomes formal, it turns into a flow of information that passes through him from session to session.

G. Biesta sees the accomplishment of his *"good education"* concept in *"subjectification"* (Biesta, 2020b), the practice when a student goes beyond understanding and presenting himself as an object of the educational process. He becomes a full-fledged subject in educational activity, realising his freedom as an independent actor in the adult world. In our opinion, *"subjectification"* has a connection with Stoic virtues, and with freedom, happiness, and balance. These virtues are associated with subjectivity, the formation of the self, since they draw the student's attention from the outside to the inside, to the self. Since antiquity, Stoicism has taught a person to connect externally given imperatives with his own desires and aspirations. Following the ideas of Epictetus, sorting things out into those that are in our control, and those that are beyond, can help the modern student to distinguish between what he can, and should do, from what he cannot change. This understanding entails inner peace and harmony and can help a person find happiness.

For us as educators, the most important achievement of the experiment was that the participants learned to pay attention to themselves on their own; to take care of themselves through the philosophy text reflection, to correlate experience with their thoughts. It seems suitable to quote the words of one of the participants: "With the help of daily reflections I structured my worldview. You know, like in a mechanism, where the things are connected into a single chain. Of course, objectively speaking, I am very far, tremendously far from understanding something in this life, but at least a small part of it has formed, again, not in a complete, but at least in some kind of a picture".

5. Conclusion

The aim of this article was to make a contribution to a discussion about the possible ways of subjectification in education through modern application of Stoic philosophy, so the outlined above experiment was conducted. A major reason for many students to engage in the experiment was to understand themselves, to find out the way out of a rigid university curriculum, and to try a new format of educational communication. Many students realized that their engagement in the experiment was a transforming event for them.

The results demonstrate that modern university students are ready to go beyond the boundaries established by the traditional educational system. This retreat is possible due to the desire to know oneself and the unique existential experience of each person involved in education. Stoic practices in the individual diary format and face-to-face group meetings contribute to the development and application of students' skills such as free reflexive activity in the critical understanding of themselves and their lives. The skills of self-reflection and introspection, grown in the process of individual work with the diary and discussion of the Stoics thoughts in a group, help the student to get out of the predicament of a passive participant of the educational process, and enter the university as an independent, free and critically thinking subject of education, focused not on the having mode but being mode (E. Fromm).

For educators, the experience of participating in the outlined research allowed them to see students not only as vessels for filling with knowledge but living, experiencing, feeling, encountering, exploring beings. This helped to achieve three goals. First, overcome the formal educators' attitude towards their students in conditions of high education pressure. Second, to find an option to restore a live dialogue of those moving together towards living real knowledge. Third, to remind the spirit of the university as a place for human self-cultivation. Participation in such practices with students allows the teacher to overcome the negative consequences of professional deformation, and burnout, that destroy the dialectical essence of the teacher-student relationship; to turn the educator from an educational conveyor wheel to an active creative subject of education.

6. Acknowledgements

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Picturing the Models of Initial Teacher Education in the World and in Vietnam and the Application of a "Combined" Model for a Specific Context

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Abstract

The article presents different teacher education models around the world with a focus on a few countries, namely Singapore, Thailand, New Zealand, Finland, and the US as well as models in Vietnam. It is evident that countries apply different models instead of one to initial teacher education and Vietnam is no exception. Besides the two popular teacher education models, the concurrent and the consecutive ones, under specific circumstances, the "combined" model, called A+B, has been implemented in some Vietnamese universities to meet the needs of teachers and join the teaching profession of society and individuals. The study provides more information on the possibility of implementing the A+B model for an independent university rather than a member university within a system of universities, where this model has been applied for quite a long time, through the design of the training program for some programs in the same sectors at the Ho Chi Minh City University of Education. This idea is hoped to be a reference for teacher education programs in diversifying themselves, especially for those in Vietnam as most of them are organized in independent multidisciplinary institutions which provide both teacher education programs and non-teacher education ones like the Ho Chi Minh City University of Education.

Keywords: initial teacher education, teacher education models, the concurrent model, the consecutive model, the A+B model.

1. Introduction

For education in any era and country, the teacher always plays an important role, a key factor contributing to the success of education and the development of the country. McKinsey (2007) even argues that the quality of a country's education cannot surpass the quality of its teachers. Therefore, teacher education institutions in the world must constantly improve the methods and

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contents of their teacher education programs to provide society with a source of quality human resources in the teaching profession.

To contribute to the improvement in teacher education, many research studies on this field in general and teacher education models, in particular, have been done and have become a matter of great interest amongst scholars worldwide. Generally, the concurrent and consecutive models of teacher education co-exist as two main directions for designing teacher education activities in institutions. The advantages and limitations of these two models are also considered topics that have been discussed extensively in the world for a long time (Ingvarson et al., 2013; Flores, 2016; Zhang et al., 2018).

In Vietnam, the history of teacher education has gone through many stages of development, and each stage has corresponding education models. This research hopes to add more understandings and methods for reviewing how teacher education in Vietnam has been implemented through the analysis of teacher education models in the world and some institutions in Vietnam, thereby providing information for proposing innovations for Vietnam's teacher education. Therefore, this study first goes through studies on teacher education models in various countries and then investigates teacher education models that have existed in Vietnam. From there, the study suggests implementing a teacher education model for a multidisciplinary higher education institutionthat provides both teacher education programs and non-teacher education ones through the design of a more connected program. Through this approach, this research is also hoped to be a reference for teacher education programs in diversifying themselves, especially those in Vietnam, most of which are organized in this type of higher education institution.

There are two teacher education models implemented with some adjustments by institutions of higher learning proving teacher education programs in the world: the concurrent and consecutive model. Tables 1 and 2 illustrate various definitions of what concurrent and consecutive means in initial teacher education (ITE).

Table 1. Concurrent model of teacher education

No	Authors	Definition
1	Ingvarson et al. (2013)	"Concurrent program-types grant future teachers a single credential for studies in subject-matter content, pedagogy, and other courses in education; this all happens at the same time, concurrently during the first period of post-secondary education" (P. 24).
2	Flores (2016)	"The concurrent model, in which the general and professional components are delivered concomitantly" (P. 196).
3	Zuzovsky and Donitsa-Schmidt (2017)	"The concurrent model is a model in which the disciplinary content knowledge is taught alongside the educational and pedagogical studies throughout a long preservice preparation period, usually lasting between three and five years. As its name indicates, the model utilises an integrated approach that combines disciplinary contents, educational theory, research and practice, which are taught concurrently. The spread of the practicum over a long period of time in this model is meant to improve the integration of the different components in the program" (P. 2).
4	Zhang et al. (2018)	For the concurrent model, student teachers learn academic and professional knowledge simultaneously. The concurrent model can be more constraining because it requires students to decide whether they want to pursue a career in teaching at the very outset of their universities studies (i.e., in their first year of study) (P. 479).
5	Dejene et al. (2018)	Student teachers following the concurrent model will acquire both subject knowledge and pedagogical knowledge concurrently (P. 7).

Table 2. Consecutive model of teacher education

No	Authors	Definition
1	Ingvarson et al. (2013)	"A consecutive teacher education program-type requires completion of two phases of post-secondary education: first, a university degree with specialization in the subject-matter to be taught, followed by a separate program focused primarily on pedagogy and practicum" (P. 24).
2	Flores (2016)	"The consecutive model, in which the professional component follows the general component" (P. 196).
3	Zuzovsky and Donitsa-Schmidt (2017)	The consecutive model means that student teacher candidates will learn the professional knowledge after they have awarded a degree relevant to subjects they will teach later in schools. For the consecutive model, candidates will begin their professional courses after they have properly studied the subject matter. As a result, the study is less focused on the disciplinary component and is primarily devoted to studies in education and pedagogy, with a shorter period of practical experience. This model tends to attract older and more experienced individuals with a diverse range of life experiences, including motherhood, who have made a relatively late and educated decision to pursue a teaching career (P. 3).
4	Zhang et al. (2018)	"The consecutive model means that students do not need to decide upon teaching as their chosen profession until they have completed a degree in their academic content areas." (P. 479).
5	Dejene et al., (2018)	The consecutive model of teacher education requires recipients to have a bachelor's degree in a subject discipline before enrolling in a postgraduate diploma in teaching. That is, a teacher first obtains a qualification, and then continues for a period of time to obtain additional teaching qualifications/certifications as a qualified teacher (P. 8).

As the name of the models, concurrent and consecutive are unique in their approaches to teacher education. The former focuses on the integration of academic knowledge/disciplinary content knowledge alongside professional knowledge/the educational and pedagogical studies during preservice teacher preparation programs. The former denotes two phases in teacher education: a bachelor's degree in a subject discipline and a teaching certificate or postgraduate diploma/certifications in teaching. The distinction between the concurrent and consecutive models also denotes the time a student decides to become a teacher. The concurrent means students choose a teaching profession for their undergraduate study, while the consecutive model allows others to join the teaching profession after being awarded another degree.

Ingvarson et al. (2013) discussed the duration of training student teachers based on the two models. For them, there are several reasons policymakers care about the length of ITE. Cost is among the reasons (Schwille, Dembélé, 2007). Shorter programs may be less expensive, but they may also be less effective (meaning more time and money for continuous professional development). Cost includes institutional costs and lost income and other costs students have to bear during their studies. The time of each teacher education program varies depending on countries and even is different within a country (Lewin, Stuart, 2003; OECD, 2005). To become primary school teachers, students study for around four years. ITE programs for secondary teachers are also varied. For the concurrent model, the program length is approximately four years. The consecutive model's first phase is typically four years long, followed by a one-year second phase.

Several factors are attributed to this variation, including financial matters, demand, and supply of teachers, applicants' educational backgrounds, and the content knowledge of candidates (Ingvarson et al., 2013). It has been observed that countries requiring universal elementary schooling, usually developing countries, tend to develop a short program (less than a year) to fulfill the needs of the policy. Another trend in teacher education is that in developed and industrialized

countries, the programs have a short duration of university-based training followed by a longer time for an internship.

In general, the length of ITE programs creates an unavoidable quandary, as Schwille and Dembélé (2007) stated: "... the longer, the more expensive, and... the shorter, the more difficult to do anything worthwhile" (p. 69). Because the consecutive model tends to last longer than the concurrent model and, therefore, is more expensive, it could be interpreted that the cost for the longer program can be compensated with added value relative to the cost.

For the two models, Zuzovsky and Donitsa-Schmidt (2017) explicitly discussed the advantages and disadvantages of each one. The benefits are considered the drawbacks of the other, and vice versa. Two significant benefits of the concurrent model are (a) a more integrated learning experience and (b) more opportunities to socialize into the teaching profession. Nevertheless, as discussed in the previous section, the model requires students to decide their choice in a teaching career early in their life, perhaps less mature and knowledgeable (Zuzovsky, Donitsa-Schmidt, 2017). The concurrent model offers programs with more rigidly structured and less leeway.

Vice versa, the consecutive model is more advantageous than the concurrent one because the pedagogy courses are developed on a solid foundation of subject matter knowledge. Furthermore, the model enables a later and more flexible entry into teacher education. However, the advantages of the concurrent model will be the disadvantages of this paradigm. Students of the consecutive programs experience less integrated learning opportunities and a shorter time for professional socialization (OECD, 2005).

Some significant work has been conducted to provide a broad view of these teacher education models (Ingvarson et al., 2013, Craig, 2016). Craig's book chapter includes an appendix that describes the various types of teacher education programs in each country related to the models of ITE programs (concurrent/consecutive), length of programs, years for each grade, and focus. With a narrower scope, Ingvarson et al. (2013) describe similar information in 17 countries (Botswana, Canada, Chile, Chinese Taipei, Georgia, Germany, Malaysia, Norway, Oman, Philippines, Poland, Russian Federation, Singapore, Spain, Switzerland, Thailand, and the United States). In this study, the models of ITE in five countries will be discussed as a theoretical foundation for a suggested model in Vietnam, namely: Singapore, Thailand, the US, New Zealand, and Finland. The selection of these countries does not only aim at some of Vietnam's neighboring countries in Asia for shared geopolitical features but is also based on the desire to learn from experiences of countries with "good practices" of teacher education for their training quality and flexibility to meet various demands of their labor markets such as New Zealand, Finland, and the US. Most of the information on these countries' ITE models was synthesized from Ingvarson et al. (2013) and Craig (2016).

Teacher education models in Singapore
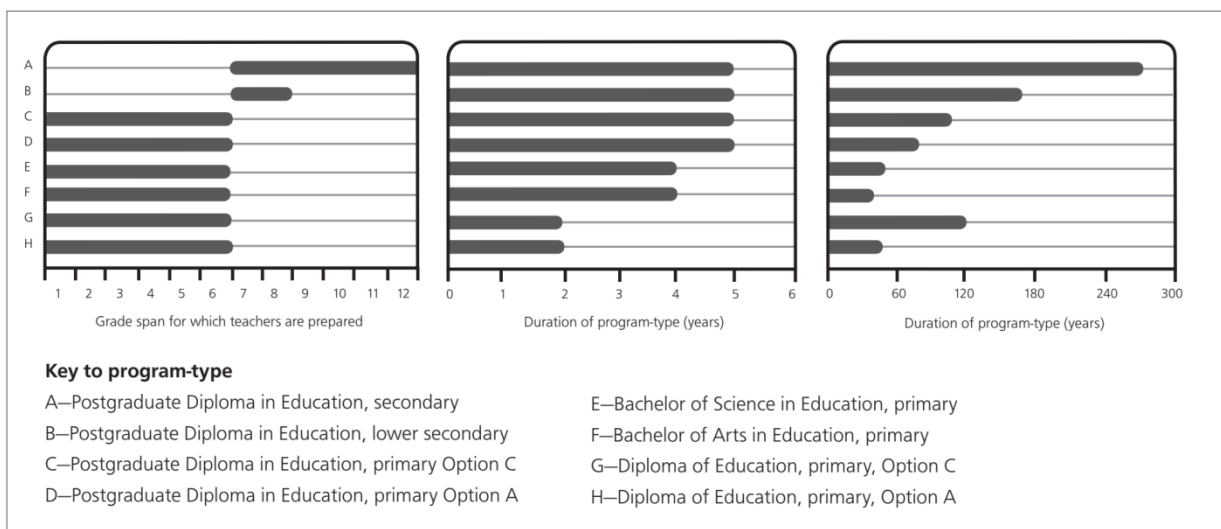
Fig. 1. Teacher education in Singapore (Schwille et al., 2013:65)

Although Singapore only has one institution that offers teacher education, the structure of the program types available is complex. In Singapore, teacher education reflects the structure of the general education system: primary education: grades 1–6 and secondary education: grades 7–10. Postsecondary education includes grades 11 and 12. The majority of future teachers begin teacher training after finishing Grade 12 (A-level), but some obtain a polytechnic diploma and start this course of study after completing Grade 10 (Low, Tan, 2017).

Teachers are trained in eight types of programs: four concurrent and four consecutive. The concurrent programs have two variants: diploma and degree program types. A general diploma program lasts two years, and a bachelor's degree (BA or BS) lasts four years. The diploma program is the only concurrent model type requiring less than three years of study at a higher education institution. Students also have two other options for the primary diploma: A and C options. For option A, students are trained to teach two subjects, and for option C, they are trained to teach three subjects. For the consecutive models, students will be awarded a postgraduate diploma in education (PGDE) which allows them to teach in primary schools or in secondary schools (Schwille et al., 2013).

The diplomas are designed for future teachers who have already been awarded a bachelor's degree and intend to enroll in the second phase of the program at the National Institute of Education in Singapore. As seen in Figure 1, the top four bars in the middle chart are for diplomas, but they also include four years of degree study plus one year of teacher education, for a total program duration of five years.

Teacher education models in Thailand
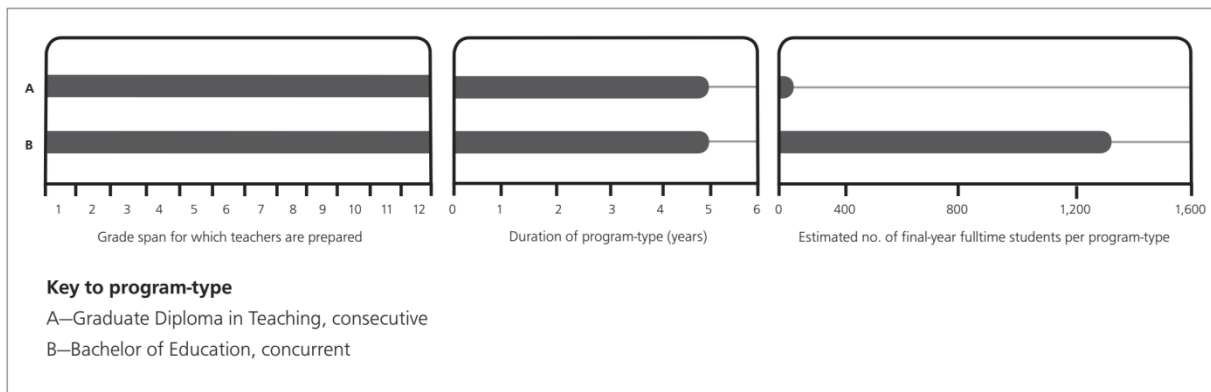
Fig. 2. Teacher education in Thailand (Schwille et al., 2013: 71)

K12 education system in Thailand is 6–3–3: six years for primary school, three years for lower secondary, and three years for upper secondary school. The universal compulsory schooling is an upper secondary school (Cordova, 2019). Universities with education faculties are in charge of providing ITE programs for future teachers of primary and secondary schools. Those who have already obtained a bachelor's degree in an academic discipline other than education are required to enroll and complete a graduate diploma (one-year full-time study) which defines the consecutive model of Thailand teacher education. After the cohort students in 2007 graduated, the ITE programs in Thailand last five years instead of four. There is no difference in teacher preparation for elementary and secondary grades up to Grade 12 (Schwille et al., 2013).

Teacher education models in New Zealand

Although New Zealand ranks relatively high on international rankings such as the OECD's Programme for International Student Assessment, compared to other higher-achieving countries, the gap between the highest and lowest-achieving students in New Zealand is quite large. In New Zealand, Maori students and students from the Pacific islands make up most of the low-achieving group, while students from Europe and Asia are in the higher-achieving group. This poses a significant challenge for the education system in New Zealand as to whether this education system is serving some population groups better than others and not reducing inequality. Accordingly, teacher education is an important lever to improve this issue (OECD, 2013).

In 2008, a change in party leadership in the New Zealand government led to new education policies. One of them is the policy on national literacy standards and the ability to do maths for primary school students introduced in 2010, despite some opposition. These standards are inconsistent with the open and process-based universal general curriculum. The national exam was not introduced along with the standards. Instead, teachers are required to make a "general assessment." This process appreciates the expertise of teachers but also requires teachers to have new skills in selecting and analyzing evidence. Meeting both requirements is a challenge for teacher education programs in New Zealand (Alcorn, 2013).

There are two common (traditional) paths to becoming a teacher in New Zealand: completing a bachelor's degree in education/pedagogy and completing a certificate of teaching/pedagogy along with a bachelor's degree in other fields (but relevant to the area of teaching). With the first route, students can obtain a bachelor's degree in pedagogy after completing the program for three or four years. With the second route, applicants who already have a bachelor's degree in any subject (applying to the primary or secondary education program) can also study for an additional year to obtain a certificate in teaching. Another route to becoming a high school teacher is being considered. Candidates need to have a postgraduate degree, both study and practice under the internship program organized by universities in close coordination with high schools. Applicants desiring to teach at Maori secondary schools (schools for natives in New Zealand) must complete their respective pedagogical profession courses taught in Maori (University of Waikato, 2022; Cameron, Baker, 2004; University of Auckland, 2022).

Specifically, the training level of primary and secondary school teachers belongs to some large groups: Three-year bachelor of education (primary level); four-year bachelor of education or four-year Bachelor of arts/science and one-year pedagogical profession (secondary level). Learning and teaching methods in New Zealand's universities are diverse, including studying in various locations through key campuses and satellite schools, and remote and web-based learning. Online learning is also increasingly used for some courses (University of Waikato, 2022; Cameron, Baker, 2004; University of Auckland, 2022).
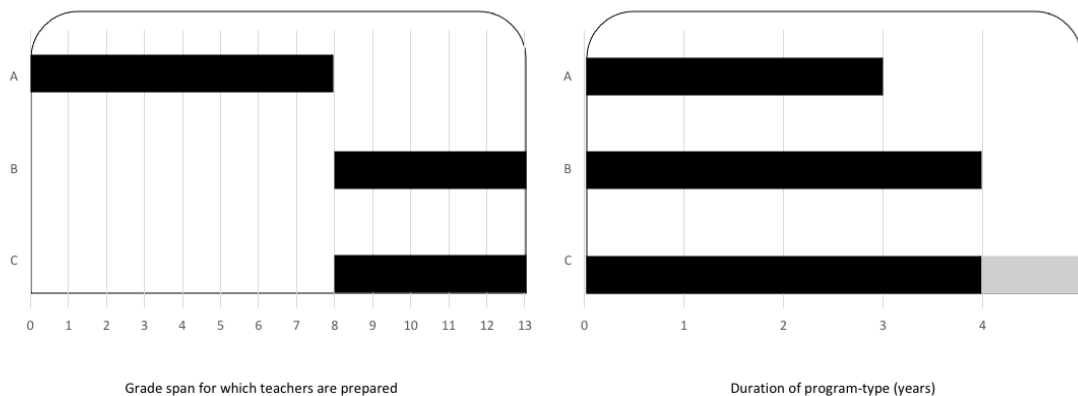
Grade span for which teachers are prepared   Duration of program-type (years)

Key to program-type
A – Bachelor's degree of education, concurrent
B – Bachelor's degree of education, concurrent
C – Bachelor's degree + a certificate of pedagogy/teaching methodology, consecutive

Fig. 3. Teacher education in New Zealand

Teacher education models in Finland
Finnish teachers are involved in various tasks such as planning the local curriculum and organizing the evaluation of this curriculum, as well as establishing professional networks and partnerships. Due to these high requirements, although there are some differences in primary and subject teacher training programs between universities due to the autonomy of the institutions, primary and secondary teachers in Finland require a master's degree (Lavonen, 2016). In fact, as of

the early 2000s, Finland had a tradition of 35 years of educating primary teachers in master's programs and more than 100 years for secondary teachers (Jakku-Sihvonen, Niemi, 2006).

All nine Finnish universities with teacher education programs have their teacher education strategies under national coordination to ensure transferability but still encourage local initiatives to maximize each university's resources and facilities. They can even decide for themselves the content of pedagogical sections consisting of 60 ECTS credits as there are some changes in the duration of supervised teaching practice. However, in general, teacher education in Finland focuses on the harmonious development of the professional competencies and personal competencies of future teachers, with an emphasis on building pedagogical thinking skills, allowing teachers to effectively manage teaching processes (Westbury et al., 2005). In addition, this diversity ensures that newly trained Finnish teachers have balanced knowledge and skills in theory and practice (Sahlberg, 2015).

Finland mainly pursues a concurrent teacher education model. However, at the secondary level, the teacher education model in Finland is also relatively diverse and exists in both the concurrent and consecutive models. There are two main ways to become a high school teacher, the first of which is that students can study for a bachelor's degree in education from the beginning and then continue to pursue a master's program in the same field. This model can also be seen as a concurrent model because the professional and pedagogical training courses are taught simultaneously during the training process for five years. As for the other path, students can graduate from an undergraduate or a graduate program in a non-teacher education field that corresponds to the subject taught at the school (e.g., Bachelor of Chemistry, Bachelor of Physics, Master in Chemistry, Master in Physics, etc.) and study an additional year in education/pedagogy if they want to become a high school teacher. In this case, the education model can be understood as a two-stage consecutive model in which the first few years students are taught about professional knowledge in the field of subject and the last year (after students get a bachelor's degree or during/after students get a master's degree) students are deeply educated about teaching methodologies/pedagogy (Malinen et al., 2012). Given the high professional requirements and the intensive nature of master's degree programs, students theoretically only need five years to complete their bachelor's and master's programs. Still, the reality is that the average study takes up to six years (Sahlberg, 2015).

Grade span for which teachers are prepared   Duration of program-type (years)

Key to program-type
A – Master's degree of education, concurrent
B – Master's degree, consecutive
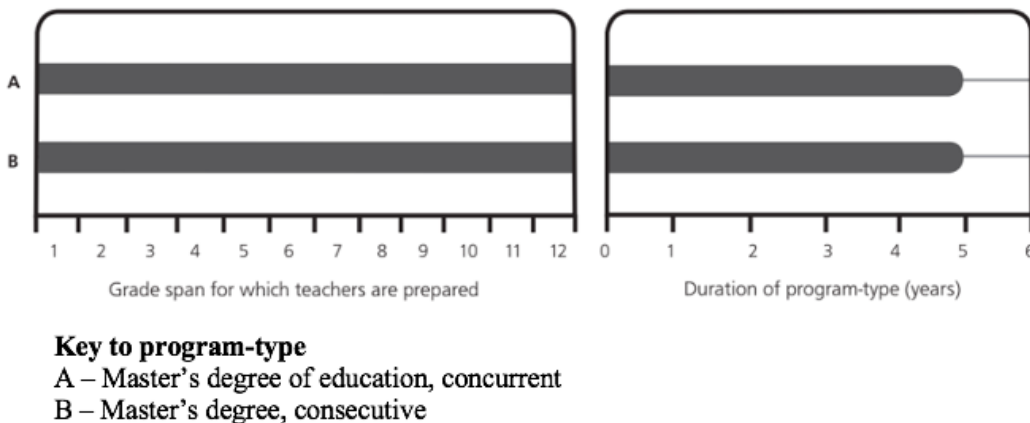
Fig. 4. Teacher education in Finland

Teacher education models in the US

The federal No Child Left Behind legislation in the US has defined and changed requirements for teachers (Ries et al., 2016). It requires teachers to demonstrate knowledge of the subjects they will be taught in schools. The legislation neither specifies requirements for a national curriculum nor describes various requirements for certification offered by universities and colleges across the US. Instead, it provides an overview of the three grade spans: primary, lower-secondary, and secondary, in concurrent and consecutive models, leading to six major program types. However, in the US, there is an overlap in the grade levels. Teachers who are prepared to teach in a lower-

secondary program can teach in primary school. Teachers teaching in lower-secondary can study and complete either a lower-secondary or a lower-plus upper-secondary program. As a result, the content knowledge learned by these teachers might be rather diverse. To be eligible for teacher education, applicants in the US must meet varied additional requirements from ITE colleges/universities and states. These variations include minimum GPA, prerequisites, SAT or ACT scores, or results of licensing in each state.
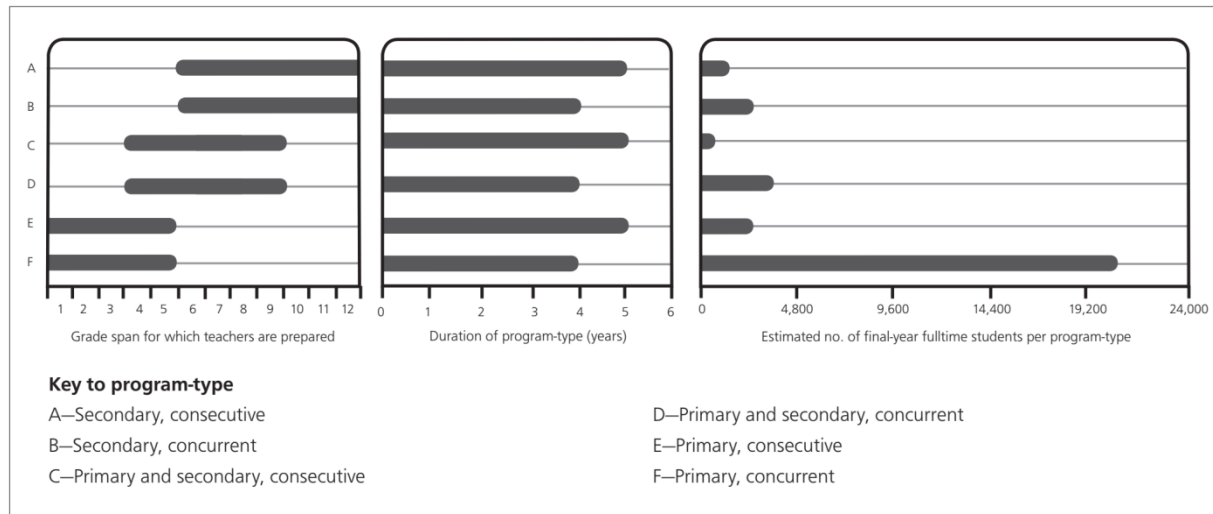
Fig. 5. Teacher education in the US (Schwille et al., 2013: 73)

The US also witnesses an increasing trend of alternative routes to licensing besides the traditional program types. They are different across states, which is believed to reflect the demand and supply picture of each state (Darling-Hammond, 2013).

In the US, besides popular models, there exists a "combined" model in the case of Texas. In Texas, the most frequent teacher education plan is for preservice secondary teachers to earn a bachelor's degree in four years. Students attend courses in a variety of academic subjects during their first two years, with a focus on the subject area for which they will eventually be certified. At the end of their second year, students apply to a teacher training program at a College of Education. Students accepted into the program must enroll in pedagogy courses for the next two years. In the second of these two years, students spend one semester taking classes and observing in schools. Following that, during their final semester, students must perform a practicum, commonly known as student teaching (Ries et al., 2016).

Taking Texas State University as an example, candidates must be enrolled in university courses and complete them on a traditional fall/spring/summer schedule. Students admitted to this traditional teacher education program are required to complete a bachelors' degree and certification.

The Department of Department of Chemistry and Biochemistry offers bachelor of science degrees in chemistry, biochemistry, and chemistry with teaching certification. For teaching certification, students can earn a Chemistry (Grades 7-12) certification while enrolling in a double major with a B.S. major in Chemistry and a B.S. major in Education (Texas State University, 2022). All students seeking teacher certification must apply for and be admitted to the Educator Preparation Program to enroll in education coursework and student teaching in the junior and senior years. Students should consult their Advising Center's degree plan check sheets for guidance on how to complete the Educator Preparation course sequence in their degree plan. Each Educator Preparation sequence, in general, consists of introductory "Education Core" classes, at least one 15-week semester of Field-Based Block coursework, and a final 15-week semester of Student Teaching after all other coursework has been completed. Students must apply for Field-Based Block coursework and Student Teaching coursework.

2. An overview of teacher education in Vietnam

The concurrent and consecutive model

In Vietnam, currently, there are more than 100 teacher education institutions, including colleges and universities specializing in teacher education, faculties of education located within multidisciplinary universities and schools. The types and numbers of these institutions are presented in the table below. Teacher education in these institutions has been implemented under various models, but the application of the traditional model, also known as the concurrent model, among these institutions is much more popular than others (Duong, 2021; Nguyen et al., 2019).

Table 3. The types and numbers of teacher education institutions in Vietnam until the end of the academic year 2017–2018 (Nguyen et al., 2019: 68)

Order	Types	Quantity
1	University of Education (pedagogy)	6
2	Teaching education program within a multidisciplinary university	55
3	Vietnam National University, University of Education	1
4	Teacher education college	29
5	Teaching education program within a multidisciplinary college	22
6	Teacher training professional school	2
7	Teacher education program within a vocational school	Unavailable data

As for institutions following the concurrent model, through a survey of training programs of Hanoi National University of Education, the Ho Chi Minh City University of Education (HCMUE), the University of Education – the University of Danang, and the Faculty of Education – Can Tho University, on the whole Duong (2021) found that the structure of the training programs for teacher education of these universities shares some characteristics. Specifically, they have 24 credits for general courses as stipulated by the Ministry of Education and Training. Although the grouping of courses is implemented according to the particular way of each training institution, in general, a teacher education program consists of three main groups: general knowledge, academic knowledge/disciplinary content knowledge, and professional knowledge/educational and pedagogical knowledge. Regarding the organization of training, groups of courses are organized in parallel with each other. Learners both receive advanced training in their discipline and have opportunities to study teaching methodologies and other educational matters (Duong, 2021).

Compared to other countries as analyzed above, in general, the similarity between the concurrent teacher education model of Vietnam and other countries lies in the structural component of the training program, which includes groups of courses: general courses, disciplinary courses, and courses concerning teaching, education, and practicum. In terms of training duration, except for a few cases like Thailand (for bachelor's degree) where students are trained for five years to become in-service teachers, the training duration for preservice teachers in Vietnam is similar to that in many countries, which lasts for four years. The difference in the teacher education models of Vietnam and other countries lies mainly in the organization of the training process. Specifically, the practicum is systematically and efficiently organized in Thailand (including close cooperation between teacher education institutions and satellite schools with clear and detailed requirements for each unit concerning providing supervision for preservice teachers during their practicum and organizing the practicum). In contrast, the practicum of preservice teachers at high schools in Vietnam has many problems, such as the lack of systematic linkage between teacher education organizations and schools as well as the deficiency of support for preservice teachers' practicum from both teachers and lecturers (Duong, 2021; Duong et al., 2021). In some countries, the selection of learners for teacher education institutions is carried out relatively strictly to ensure the best quality of preservice teachers, especially in Singapore. However, teacher education in Vietnam mainly uses students' scores from the national examination organized by the Ministry of

Education and Training to select learners instead of having their specific selection criteria and processes (Duong, 2021; Duong et al., 2021).

About one decade ago, the Ministry of Education and Training allowed teacher education institutions to carry out the consecutive model (this means that graduates from specific disciplines can become teachers after earning a certificate of pedagogy/teaching methodology). After a period of suspension, in 2021, the Ministry issued circulars allowing teacher education institutions to continue their ITE according to the previous model, and the Ministry of Education and Training also formulated specific curricula that teacher education institutions are required to utilize when they apply this model for teacher education. For instance, according to Circular No. 12/2021/TT-BGDĐT, which promulgates regulations on training pedagogical content for those already having bachelor's degrees in relevant disciplines and wishing to become secondary and high school teachers (lower and upper secondary school teachers), there are two groups of courses including general and specific. As for the general group, there are seven compulsory courses including Educational Psychology, Educational Studies, Teaching Theory, Educational Assessment, State Management of Education, Pedagogical Communication, and Pedagogical Training. Besides compulsory courses, the Ministry also provided ten elective ones from which students have to choose two (Ministry of Education and Training, 2021b). The total number of credit units in this group is 17. Regarding the specific group for secondary or high school teachers (lower or upper secondary school teachers), there are nine credits for elective courses specializing in a particular subject, six credits for compulsory courses about practice/teaching practicum, and two credits for elective courses. This kind of program lasts for a minimum of one year and a maximum of two years with a total of about 35 credits, and the content focuses on pedagogical training, teaching methods, and practicum (Ministry of Education and Training, 2021a; Ministry of Education and Training, 2021b).

The consecutive mode of educating preservice teachers implemented some decades ago and allowed again from 2021 is generally similar to the model applied in many countries around the world in the way that after having a suitable bachelor's degree, a graduate can pursue a pedagogical/teaching methodology training program to become a teacher. After some periods of suspension, currently, this model is in its operation. While there are still no data available concerning the implementation of this model as it has just been relaunched, the curricula promulgated by the Ministry of Education and Training for this type of teacher education show the state's interest in this model to able to provide the sufficient quantity of qualified teachers for society now and in the future. In addition, this model also allows more people to have the opportunity to become teachers, especially those who have not had an intention to join the teaching profession for their first degree and wish to change careers later.

The A+B model of teacher education

The A+B model is quite different from the consecutive model commonly applied in many countries since, at the end of the first phase, the student has not received a bachelor's degree. In other words, the two phases are relatively separate but still in the same training program, and the student only receives a degree in teaching/education after completing the program. This practice of training student teachers is similar to the model implemented in Texas, the US, as described above. In Vietnam, this form has been deployed most clearly at the University of Education, Vietnam National University, Hanoi, with some changes over different periods. It is currently known as the A+B model. Specifically, in the period 2000–2005, the training of teachers at the University of Education, Vietnam National University, Hanoi was organized according to the consecutive and concurrent models, called the 3+1 model. With this model, students in the first three years mainly studied general knowledge and disciplinary content knowledge at member universities such as the University of Natural Sciences and the University of Social Sciences and Humanities. Although it did not account for a large proportion, the amount of knowledge on education/pedagogy was also provided right from the first year, with an increasing amount in the following semesters. In the following period, 2006–2012, the University of Education deployed the consecutive 3+1 model. With this model, as for the group of disciplinary content knowledge, student teachers were trained and managed together with students from other programs at member universities during the first three years. After that, the learning results of the first three years of student teachers were transferred to the University of Education, where courses relating education/teaching, practicum, and graduation thesis were organized. Under this model, students

can only choose teaching/pedagogical courses in the last year at the University of Education, and so "there are some issues in student administration leading to the policy change that the courses of pedagogy should be selected as early as possible as of freshman and sophomore" (Nguyen et al., 2019: 71). From the academic year 2012–2013 up to now, the University of Education has applied the A+B model in teacher education activities. With this model, general courses and disciplinary courses are organized at member universities of Vietnam National University, Hanoi. The University of Education organizes training courses on teaching and education. The undergraduate program in teacher education built by the University of Education, regarding training programs of the University of Natural Sciences and the University of Social Sciences and Humanities, respects the principle of ensuring continuity and connection with the programs of two other member universities. Therefore, the majority of courses in undergraduate teacher education programs and non-teacher education programs, which are selected for the model A+B for teacher education, are the same, sharing from 100 to 105 out of the 140 total credits (University of Education, 2020). Regarding the program management, it is different from the past models where the "responsibility of administration of the first three years belonged to other member universities." In this model, this responsibility "was regained to Vietnam National University – The University of Education for all four years." (Nguyen et al., 2019: 70).

Some other multidisciplinary universities in Vietnam are also starting to educate preservice teachers according to the A+B model, similar to that of the University of Education. Among these institutions is Dalat University. Due to its features as an independent university rather than working as a member of a large university like the case of the University of Education, teacher education programs at Dalat University are connected with other programs in the same university. Students of the Department of Education are required to accumulate enough credits in a program in natural sciences or in social sciences and humanities as well as credits in education/teaching methodologies to be granted a bachelor's degree in teaching/education. This model also makes it possible for students to obtain a bachelor's degree in teaching/education and another one in a different field when they pursue double majors (Dalat University, 2016; University of Education, 2020).

In general, the A+B model in Vietnam is similar to the consecutive model in some other countries. Students acquire academic knowledge/disciplinary content knowledge from some units (faculties or universities) and then receive training about teaching/education in a division specializing in teacher education. However, students only earn a bachelor's degree in teaching/education after completing their program of study. Compared to the consecutive model, this model requires less training time as students can still complete the program in four years instead of having to spend from one to two more years getting a certificate of teaching methodology/pedagogy to be able to work as in-service teachers. Against the context of Vietnam, the A+B model of teacher education implemented at the University of Education in comparison with the concurrent model also shows openness, robust transferability, and flexibility in changing from a bachelor's degree in science or arts to one in teaching/education and vice versa. Besides, the quality of training is high when a team of highly qualified lecturers and leading professors of basic sciences participate in training preservice teachers. The A+B model also provides a significant amount of time and plenty of opportunities for students to deepen and broaden their knowledge as the total number of credits accounts for 140. At the same time, teacher education programs in other institutions have less (University of Education, 2020). However, it is also true that besides various advantages, there are barriers to implementing the A+B model because it requires institutions to be multidisciplinary to ensure that preservice teachers can study with students from relevant programs. Otherwise, joint training must be allowed, and there must be strict regulations on the roles, rights, and obligations of partners. Selecting and assigning students to a particular program requires resources and time (University of Education, 2020; Nguyen, 2020). This is more difficult in the context that the policies for improving the quality of the teaching staff in teacher education institutions are still ineffective and insufficient, and the infrastructures of teacher education institutions, including laboratories and teaching equipment, are still limited in terms of quality and quantity (Nguyen, 2020).

It can be seen that ITE in Vietnam is being carried out according to different models in various types of institutions, including universities, colleges, and schools. The main characteristics of teacher education models at the university level in Vietnam are shown in the following figure. Of these models, the concurrent one is the most popular, and it is also maintained throughout the history of

Vietnamese teacher education while the consecutive model has experienced some suspension. Under the needs of learners and society for teachers and the teaching profession, from 2021, this model has been allowed to be implemented again with a more extended training program prescribed by the Ministry of Education and Training. Due to Vietnam's higher education institutions' characteristics in terms of university governance, facilities, human resources, and other factors, teacher education in the country is also carried out according to a new model. This A+B model can be seen as a combination of the concurrent and consecutive models. Until now, the A+B model has been mainly deployed at an institution that belongs to a national university with various members. Research on the ability to deploy this model at independent universities, where most of Vietnam's teacher education programs are organized, is necessary to provide scientific information to these organizations in reforming their ITE.
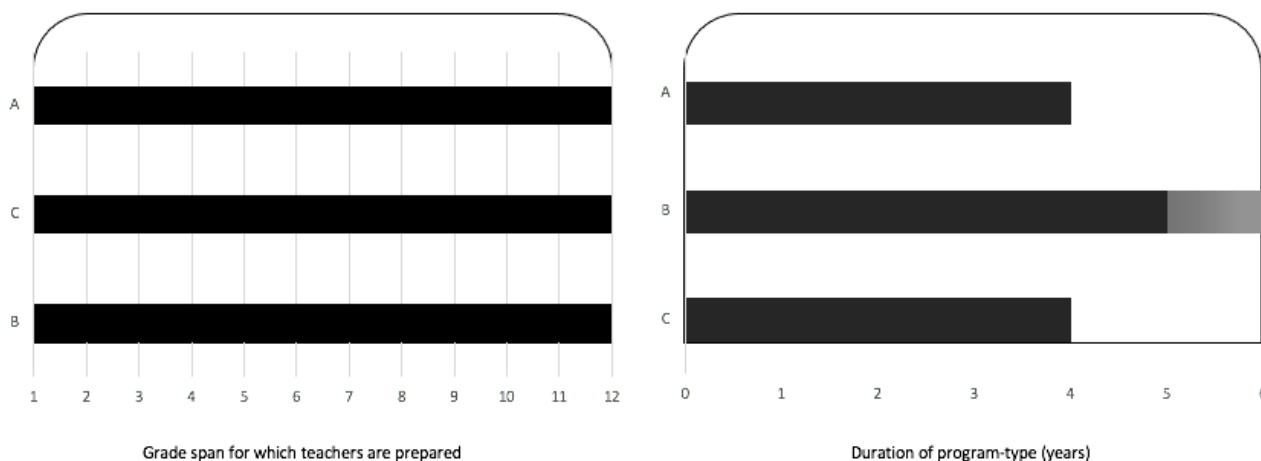
Fig. 6. Teacher education at the university level in Vietnam
Notes:
Key to program-type
A – Bachelor's degree of education, concurrent
B – Bachelor's degree + a certificate of pedagogy/teaching methodology, consecutive
C – Bachelor's degree of education, A+B

A suggested training model for Ho Chi Minh City University of Education – a case study
HCMUE is one of two national key universities of education in Vietnam. HCMUE initially focused on teacher training only. Therefore, the teacher education model at HCMUE was purely a concurrent model in the past. However, some non-teacher education undergraduate programs have been developed in line with the mission and the vision of HCMUE. Currently, HCMUE offers 39 undergraduate programs, 19 of which are non-teacher education programs. The implementation of non-teacher education programs is also based on the same resources (e.g. human resources and facilities). Thus, there is a close relationship between the non-teacher education and teacher education undergraduate programs at the University. At the University, a non-teacher education program is usually developed based on an available teacher education program. For example, the Department of English, the Department of Chemistry, etc. offer programs in English Linguistics, Chemistry, etc. respectively besides teacher education programs in these fields.

Regarding the structure of the training programs, currently, the number of credit units of the teacher education programs at HCMUE ranges from 130 to 135 and these programs fully demonstrate the characteristics of the concurrent teacher education model. Accordingly, students take courses of scientific expertise and pedagogy simultaneously. Furthermore, under the competency-based approach, the teacher education program learning outcomes at HCMUE include four groups: qualities, general competencies, specialized competencies, and professional competencies. Therefore, the courses in the training program are divided into four groups with the ratio shown in Table 5. Students can receive a bachelor's degree in teaching/education from HCMUE after four years of study.

Table 4. The current structure of teacher education programs at HCMUE

No	Groups of learning outcomes	Ratios (out of the entire program)	Descriptions
1	General education	25-30 %	Typical courses for all undergraduate programs at HCMUE, including Political Education, Physical Education, Military Education, Foreign Languages, Information Technology, etc.
2	Specialized courses	40-47 %	Courses provide scientific knowledge, including basic and advanced courses.
3	Professional courses	17-18 %	Courses provide pedagogical knowledge and skills, including common courses for all teacher education programs and typical courses for specific teacher education programs.
4	Professional practice, graduation research or alternative graduation courses	11-12 %	Courses require students to practice at high schools, conduct graduation research or complete alternative graduation courses.

The courses in the General Education group (1), available in all undergraduate programs, are provided for all undergraduate students at HCMUE. Regarding the group of Specialized courses (2), the similarity rate of these courses in an undergraduate non-teacher education program and in a teacher education program (in the same academic field) is different between departments. However, this ratio has not been discussed at the university level. Besides, the integration and transferability have not been clearly shown among the teacher education programs in the same field such as natural sciences (Chemistry, Physics, and Biology) or social sciences (Literature, History, and Geography). The courses in the Professional group are related to the field of education and are delivered from the 1st semester to the 7th semester. In addition, common professional courses such as Psychology and General Education are arranged in the first three semesters.

The training program structure mentioned above clearly shows the characteristics of the concurrent teacher education model. Although in some aspects, such as student quality and organization, this model has proven to be effective, more connection and transferability between programs for efficient use of the University's resources has become an indispensable requirement since this teacher education institution has transformed itself into a multidisciplinary university.

To ensure the connection and transferability between the teacher education and non-teacher education programs at HCMUE, to inherit the existing model's effectiveness, and optimize the resources while offering undergraduate non-teacher education programs, HCMUE could consider a program structure with three following components:

+ Component 1: Fundamental knowledge of the academic field of science;

+ Component 2: Educational sciences knowledge for a teacher education program or professional knowledge for a non-teacher education program, and graduation thesis/project;

+ Component 3: Professional practicum at high schools for teacher education programs or professional internships for non-teacher education programs.

In this proposed structure, the transferability of the teacher education and non-teacher education programs in the same academic field at HCMUE is considered. At the same time, the timeline for professional courses has to be made appropriately. Also, to ensure a reasonable study plan for preservice teachers, the teaching plans of professional courses and the weight of these courses should be paid attention to, while students participate in most of the courses offered for all undergraduate programs and in specific groups of courses or sectors of programs. It can be seen that the A+B model, with the combination of the characteristics of the two traditional models: the concurrent and the consecutive, can be implemented in the suggested structure. With this A+B model, academic knowledge/disciplinary content knowledge and professional knowledge/

educational and pedagogical knowledge are provided separately to only some extent in two phases. Unlike the A+B model that has been widely deployed at the University of Education – Hanoi National University in Vietnam where non-teacher education-related courses are taught at other member universities of Hanoi National University, in the A+B model at HCMUE, all kinds of courses are taught in HCMUE's departments. This is because HCMUE is an independent university with teacher education and non-teacher education programs. With this type of implementation, the nature of the model A+B remains unchanged, but there is a difference in the way courses are organized.

Table 5 shows a proposed structure of teacher education programs for sectors of disciplines (e.g. natural sciences and social sciences). The growth of equivalent courses among the teacher education programs in each sector of disciplines has been considered.

Table 5. A proposed structure for the teacher training program at HCMUE

Components	Groups	Transferability in undergraduate programs
(1) Fundamental knowledge	(1) General knowledge	Common for all undergraduate programs at HCMUE
	(2) Specialized knowledge of a specific sector of discipline	Common for all undergraduate programs of a particular sector of discipline
		E.g. The sector of natural sciences includes programs in Chemistry, Chemistry Teacher Education, Physics, Physics Teacher Education, etc.; the sector of social sciences includes programs in Literature, Literature Teacher Education, Geography, Geography Teacher Education, etc.
	(3) Specialized knowledge for teacher education and non-teacher education program in a specific academic field	Common for teacher education and non-teacher education programs in a specific academic field; e.g. Chemistry and Chemistry Teacher Education, Literature and Literature Teacher Education.
	(4) Specialized knowledge for a specific teacher education program	
(2) Educational sciences knowledge, graduation thesis or project	(5) Educational sciences knowledge for all teacher education programs	Common for all teacher education programs
	(6) Educational sciences knowledge for all teacher education programs in a specific sector of discipline	Common for all teacher training programs in a specific of discipline (e.g. Natural science sector and social science sector)
	(7) Educational sciences knowledge for a specific teacher education program	
	(8) Graduation thesis or project	
(3) Professional practicum	(9) Professional practicum	Common for all teacher training programs

The transferability and integration of training programs have been enhanced as shown in the proposed structure. Regarding the components: Specialized knowledge and Educational science

knowledge, only three groups of courses, show the specificity of a particular teacher education program. With these features, other teacher education models can implement the proposed structure. Learners only have to complete components 2 and 3 to obtain a bachelor's degree in teacher education in the same academic field. Also, learners have more opportunities to concurrently participate in two teacher education programs in the same sector. Students have to complete four out of 9 groups to finish the second teacher education program.

The structure of the component "Educational sciences knowledge" has been clarified in Table 6.

Table 6. Proposal of courses of educational sciences for a specific sector of discipline in an undergraduate program of teacher education at HCMUE

Groups	Courses	Numbers of credits	Semesters
(2.1) Educational sciences knowledge for all teacher education programs	Introduction to the teaching career	1	1
	Psychological Education	2	3
	Pedagogical Communication	2	3
	General Education	2	3
	Foundations on theory and methods of teaching	2	4
	Testing and Evaluation in Education	2	4
	Organizing Educational Activities at High Schools	2	4
(2.2) Educational sciences knowledge for all teacher education programs in a specific sector of discipline (e.g., Natural science, social science, and foreign languages)	Appropriate courses for a specific sector of discipline	From 2 to 4 credits	6
(2.3) Educational sciences knowledge for a specific teacher training program	Methods of teaching a specific subject	From 10 to 14 credits	Mainly arranged from semester 5 to 7
	Applying ICT in teaching a specific subject		
	Curriculum development in teaching a specific subject		
3. Professional practicum	Regular Pedagogical Skill Training	2	5
	Teaching Practicum 1	2	6
	Teaching Practicum 2	6	8

4. Discussion

The research presents different teacher education models around the world with a focus on a few countries, namely Singapore, Thailand, the United States, Finland, New Zealand, and models in Vietnam. It is evident that countries apply different models instead of one to initial teacher education, and Vietnam is no exception. Besides the two popular teacher education models, the concurrent and the consecutive ones, under specific circumstances, the "combined" model, called A+B, has been implemented in some Vietnamese universities to meet teachers' needs and join the teaching profession of society and individuals. The restructured curriculum shows the connection and transferability with clear orientation, not only among teacher education programs but also between teacher education and non-teacher education programs within a university. This structure is similar to the A+B teacher education model. Accordingly, academic knowledge/disciplinary content knowledge and professional knowledge/educational and pedagogical knowledge are provided separately to only some extent in two phases. In other words,

these two phases still have some interlacing parts. Some general pedagogical training courses for teacher education programs are taught in the first two years to enhance students' understanding of the teaching profession and build professional engagement, which will help overcome the consecutive model's limitations. This structure is suitable for a university offering multidisciplinary undergraduate programs, including teacher education and non-teacher education, as HCMUE. Generally, this structure does not complicate the organization of training activities and contributes to the efficient use of resources when students from different programs can take many common courses. In addition, there will have more learning opportunities for students as they can easily transfer to other programs, especially in close disciplines because of the high transferability of the proposed model.

5. Conclusion

The review of ITEs model in these countries shows that they have developed two pathways to ITEs: consecutive and concurrent models. Historical, political, and social backgrounds have significantly shaped their dominant models of ITEs. For example, while ITEs in New Zealand tend to follow the consecutive model in secondary education, Singapore follows the concurrent and centralized models in teacher education. The diversification in providing ITE programs in the US reflects the diverse structure of teacher education systems in this country. The literature review also shows that concurrent or consecutive models have advantages and disadvantages. Therefore, in the reviewed countries in this study, these two models co-exist to complement each other (Dejene et al., 2018; Zhang et al., 2018; Zuzovsky, Donitsa-Schmidt, 2017).

Regarding the length of ITE programs, Finland and Thailand lead the trend. Thailand increases the size of practicum to one year and then increases the overall time for ITE programs. Finland is the leading country that requires master's degrees as minimum qualifications to become a teacher. These practices in ITEs, to some extent, demonstrate that despite more time denoting more costs, the quality of ITE programs is seriously considered.

The review of ITE models and programs in this study also illustrates a similar approach to combining two stages in the concurrent model as witnessed in Texas and the University of Education, Vietnam National University, Hanoi. This approach has been defined as the A+B model in this study. Ho Chi Minh University of Education is a key teacher education university in Vietnam and strategizes to be a multidisciplinary university offering teacher and non-teacher education. The current dominant concurrent model in ITE in HCMUE seems not to be an effective approach and fails to create a flexible pathway and maximize human resources of teacher and non-teacher education. The proposed model in HCMUE is believed to be practical for HCMUE and contributes to the understanding and diversity of how teacher education is implemented. The proposed model will take advantage of a multidisciplinary university such as HCMUE and promote transferability between the first stages of teacher and non-teacher education.

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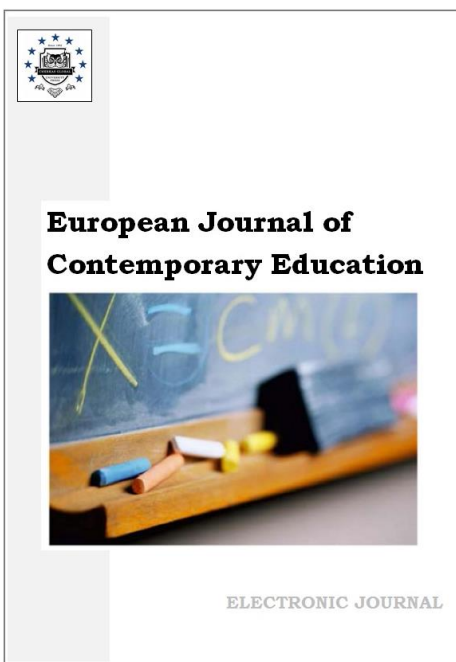
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Competitiveness Experiences of Dual Training in a University of Higher Education in Economics

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Abstract

Employers' expectations are key drivers of designing and developing academic programmes and this paper would like to contribute to such processes by clarifying their expectations based on empirical research conducted during an EFOP [1] project on developing the dual International Business and Economics undergraduate programme of Budapest Business School University of Applied Sciences, Hungary (BBS). The aim of this paper is to investigate what competences employers really expect business graduates to have at the end of their studies. The paper introduces the dual higher Vocational Education and Training (VET) model, where full-time students are also full-time employees of cooperative companies. Twelve employers participated in the project and the university signed a contract with them. They agreed to employ the young people under the programme. The roots of the currently existing high VET models – as a concept and structure – can be traced back to the "Stuttgart Model", and to the first attempt at merging vocational training and theoretical knowledge in the 1970s. This model, in slightly different forms, has been adapted in many Member States of the European Union and has gained momentum in Hungary. BBS has been very successful in delivering this model since 2017. The project is purported to improve the efficiency of dual higher VET by joint education and competence-development with employers, who were interviewed about their expectations. The authors of this paper have analysed the employers' responses and have made recommendations for developing dual higher VET programs accordingly.

Keywords: VET, expectations, education, university.

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[1] State-subsidized Human Resource Development Program of Hungary, allowed BBS to design and make tailor-made lectures and training materials for the International Business and Economics Bachelor program and design and put into operation a logistics laboratory in collaboration and jointly financed by its most important dual partner-organization, Robert Bosch Electronics Ltd. to develop students' competences.

1. Introduction

The velocity and magnitude of changes in the world of work in the 21st century, especially the advent of the Fourth Industrial Revolution, are making a significant impact upon higher education. Since graduates are expected to demonstrate abilities to be successful in jobs not existing today, higher education institutions (HEI) need to adjust their programmes to prepare students for an era of uncertainty (OECD, 2015). However, employers in many countries feel that graduates are inadequately prepared for volatile labour markets (Zenner-Höffkes et al., 2021), because important skills are not appropriately fostered during academic programmes (Zlatkin-Troitschanskaia, 2021). Such skills include technical as well as creative and social skills, which are regarded as essential in the 21st century (OECD, 2015). Employers are calling for the development of a variety of abilities in graduates and demanding a competence-based approach from higher education institutions (OECD 2021; Zlatkin-Troitschanskaia, 2021).

This approach has produced a variety of forms and their respective definitions, which mostly focus on a systemic integration of knowledge, skills, and attitudes (Bratianu et al., 2020). The knowledge part of the academic programmes varies from discipline to discipline (Coonan, Pratt-Adams, 2019). The skills include 'hard' skills such as numerical skills, and 'soft' ones, such as communication, creativity, critical thinking (David et al., 2021), with special emphasis on digital skills needed for the Fourth Industrial Revolution (Coonan, Pratt-Adams, 2019). The attitudes vary from country to country, but most of them aim to support a better, more humane society (OECD, 2021).

The dual higher VET programmes that originated in Germany include internship stages and may involve a variety of active and collaborative learning elements. The next sections provide insight into the history of this academic model, its adaptation in Hungary in general, and at BBS faculty of International Business and Management (FIMB) in detail. The experience gained here is the subject of this study. During research the validity of the following hypothesis was examined:

Hypothesis 1.

The competencies determined by the dual higher VET and their development are in full compliance with the expectations of company professionals.

2. Theoretical background

2.1. The birth of dual higher VET

In a publication about the background, debates and major development fields concerning the higher VET, the authors Elsholz and Neu stated that the demand in Germany for "dual education" first appeared and started to rise in a social situation. The number of students having baccalaureate[1] significantly increased, whereas the number of available places in higher education remained the same, thus students were confronted with constraints in access to higher education. To resolve this tension between the students' desire to enter higher education, the hindrances in HEI capacities, and the enterprises' demand for qualified employees (new entrants), the legislators in Baden-Württemberg (Germany) aimed to establish a special educational system. By aligning with society's (stakeholders') expectations the newly designed system met two essential requirements. First, regarding the knowledge and competencies conveyed by it, it had to be capable of ensuring the same job opportunities for the graduate students, as the traditional high schools with their curriculums. Secondly, the constructed courses of studies had to be independent of any particular interest (such as professions, plants' needs or business operations) and must provide an attractive, broad scope and profession-neutral curriculum to a lot of students.

In the 1970s companies such as Robert Bosch GmbH[2], Daimler Benz AG and Standard Elektrik Lorenz AG in Stuttgart[3] began to operate with this model, consisting of a combination of vocational training and theoretical knowledge elements where the students participated in a 3-year educational program. "Professional Academy"[4] in 1973 in consistency with the respective initiative of Baden-Württemberg educational minister. The "Professional Academy" started to work as a semi-governmental (legally not independent) institution also providing social study programs.

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[1] In German system called Abitur which might equal to A-level graduation

[2] The BGE FIMB started to operate the dual high VET first with the Hungarian subsidiary of this company in 2014.

[3] This is the reason why the first model received the title "Stuttgart Model".

[4] In German language, its title is „Berufsakademie".

The next milestone in this progress was the legal act which conferred the same legal status to "Professional Academy" diplomas as high school issued and as a consequence, they gained equivalent status with high school degrees.

As a result of the developmental history of these programs, an array of dual educational programs came into being with large similarities, but also with significant deviations. The different curricula ultimately led to a lack in transparency in respect of the quality and outcomes of education (Esholz, Neu, 2021: 338).

2.2. The term of dual higher VET in the context of European union legislation

It is virtually acknowledged by all EU policymakers and education ministers, that the new technological and economic development, the future progress, and competitiveness of the European Union are highly affected and shaped by new entrants' knowledge. It is also recognized that the speed of technological development cuts education time and requires better alignment with industry needs and more effective practical trainings. Delay or hesitation to incorporate new knowledge is likely to weaken the resilience of the EU and will negatively affect the students' long-term employability. Universities must reveal the discrepancies between industry interests and academic aims and purposes, because the "skills mismatches are ongoing concerns in the EU, despite the fact that the characteristics and severity of the problem vary across members states economic activities and occupations." (European Economic..., 2018: 18). It is widely agreed that "skill mismatches" can affect the working behaviour of both employers and employees. Gamin et al. argues that employers are risk averse when they are looking to recruit, which means that they are unlikely to expand their employee base unless they are confident in the abilities of potential employees to fulfil the tasks required." (European Economic..., 2018: 20).

The legislator of the European HEI has clearly declared that the goal which the students want to attain by obtaining Bachelors and Masters' degrees, is to apply for jobs in the international labour market. Working in an international job environment, in international teams will support the future employee in teamwork and international cooperation; it will strengthen the employee's open-mindedness to innovations, and capability to advance and explore new business opportunities. To support students in acquiring these competences, universities must be aware of advancements in global enterprises and must know both the trends in HR selection processes, and in profession-profile criteria sets. Due to these reasons the EU welcomes all forms of practice-based education, but states, that "there is no consensus on defining the definition of higher Vocational Education and Training (VET) so far." (EU Final Report, 2019: 1).

2.3. White Paper on dual higher VET in Hungary

The Hungarian dual higher VET is a part of the legal frameworks for higher education.[1] The ministry in charge has also established a special body, designated the "Hungarian Council for Dual Vocational Education"[2] that defined the term of the dual higher VET. It says that academic studies are deemed dual higher VET, if the education provided by the concerned HEI is in strong liaison with a partner-organization that virtually renders practice-based trainings. At the partner-organization students gain special profession-related knowledge and working experience, thus they can enter the labour market as employees with expertise and appropriate competencies.

The "Hungarian Council for Dual Vocational Education" has determined the pivotal principles of dual higher VET. To support the statements of the recent study three of these principals are worth mentioning:

"4. At the dual practice place the partner-organization [3] must provide the proper infrastructure (equipment, machines, tools, materials) that are suitable and sufficient for the development of student competences and skills."

5. The mentors at the partner-organization must have outstanding theoretical knowledge and practical experience to be able to support the apprentice's professional development in the workplace culture.

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[1] The referred „EU Analysis paper" states that there are EU Member States where such a regulatory base was created. It is the Act on National Higher Education Nr. CCIV enacted in 2011.

[2] Duális Képzési Tanács

[3] trainer organization

6. The dual partner-organization must integrate an appropriate "Educational Program" based on the study program of the HEI and which is strongly related to it. This the "Coordinated Dual Education Program" (CDEP) must contain the following four elements:

- theoretical knowledge,
- profession-related, specific practice-based tasks,
- individual project tasks,
- advancement of competences and skills in consistency with Bachelors and Master's degree programs." (White Paper…).

The Hungarian dual higher VET is featured by programs that "include 20-24 weeks work-based learning in a company per academic year. Students have a higher workload compared to their peers, who follow a standard program in the same field. After an initial 13-week period the dual students start their practical experience in the companies and prepare for the first round of exams. There are up to eight weeks of practice in the autumn-winter semester, and 16 weeks in the spring-summer semester." (OECD-EU, 2017: 26).

2.4. White Paper on dual higher VET at BBS, Faculty of International Management and Business

In compliance with the "Hungarian Council for Dual Education" standpoint, the criteria set by the German "Council of Science", and the terminology of the EU, the Budapest Business School (BBS) has set the goals of its dual higher VET, saying that: "the vocational part of high dual education is pervaded through the curriculum and is aimed at developing the students' knowledge, and to efficiently forward the applicable competences to international economic business life." (BGE, 2021). BBS is cognizant of the fact that "there has been an undisputed need to link academic education with practice-based knowledge both from the side of employers and students for a long time in the Hungarian Higher Education system. The Bachelor's degree programs introduced by the Bologna Process wanted to inspire the linkage, where the dual vocational education of HEIs creates an advanced level of education thanks to the focused attention and organized, well-designed integration and contribution of participating companies." (White Paper…).

The concept of BBS dual higher VET focuses on the academic yields and project tasks to enable the delivery of value-added performance.

The philosophy of BBS dual higher VET was recapitulated in the "SMART Concept" where each component makes an intrinsic fundament of the vocational training carried out by partner-organizations.

- "S" refers to specific, profession-related, accurately defined tasks to be solved by the student.
- "M" refers to the "measurable results" both in the achievable competences and the outcomes.
- "A" says that the tasks to solve, must be attainable, attractive, interesting, and encouraging to facilitate the advancement in knowledge.
- "R" holds that students must do relevant work which means that they must be involved in real, necessary, and important operational processes.
- "T" holds that the vocational training tasks must be timely properly structured and scheduled to enable eligible encumbrance of students during their learning time.

The White Paper of BBS laid down the outcomes in the curriculum of International Business and Economics, which were split into four major categories such as

- "Professional competences, knowledge and understanding" including general and specific items such as being familiar with the main tendencies of the global economy (in general) or knowing on how to establish new trade relations.
- "Cognitive competences" therein analytical competences such as being capable of conducting analysis with proper measures and synthetizing competences where the capability for tasks re-designing or re-structuring is worthy of mention.
- "Key, profession-related competences" where self-management, tolerance, proactive ways of thinking or respectful behavior were listed, and finally
- "Key profession-profile skills" point to the capability of using IT apps, ERP systems or Business Intelligence solutions.

3. Research objective, methodology and data

In awareness of the necessity to adjust the academic content of curriculum to the new trends and employers' requirements, the BBS FIMB conducted primary research in 2020 to reveal the hidden, tacitly existing demand and the expressed needs of labour market actors concerning the students' competences and knowledge. The primary research and the subsequent analysis purported to identify the undisclosed conflicts in the required knowledge and intended to clarify their reconciliation, pointing to the drivers and rules, such as company strategies and effective HE legislation.

The research made by BBS FIMB aimed to have insight into business tendencies in logistics, finance, trade, and commerce and shed light on the gaps between the industry needs and university requisites. During the interviews, interviewers visited the companies in person and interviews lasted one to two hours.

Twelve companies were involved in the research, and they actively participated in dual higher VET. Participation was voluntary. The particulars of the companies are presented in Table 1.

Table 1. Specification of the companies. Source: own research

Specification	N
Company size	8 large companies (more than 250 employees) 3 medium-sized companies (between 50-249 employees) 1 small company (9 employees)
Turnover	2 companies (under 5 billion) 10 companies over 5 billion
Company form	1 limited partnership 4 Limited liability company 7 Limited company

The researchers used in-depth interviews as a quantitative research method, because this method offers a good opportunity to scrutinize the compliance of competencies, since in this way the company leaders could reason and explore their requirements more clearly and express themselves. This method enabled the interviewee to phrase the personal experience gained during the dual higher education processes. The questions of the in-depth interview were structured as follows.

Table 2. The structure of in-depth interview

Questions for specification	Skills and competencies for dual higher VET	Competence requirements
The size of the company. Activity field of the company. Ownership structure of the company.	Clarification of competence terms based on project works and White Paper of BGE;	What do we expect the students to know? Do the terms and definitions of the course description conform with company needs? Are the university and company phrases and usages in harmony with each other?

Source: own research

The interviewees were neither informed about the course content, the set of skills and competences that the university wanted to ensure, nor the literature used.

A further aim of the in-depth interviews, was to obtain a direct impression and information on how the company would construct the respective course. The asked company professionals had absolute freedom to determine knowledge elements held as important for teaching. The responses

were elaborated on, systematized by the academic course leaders, and were considered in regular revision (refreshment) of the course materials.

During the scrutiny, each course taught in the dual higher VET included the syllabus describing the project tasks where the lecturers defined the required competences of the courses. The interview subjects were asked about the company needs and the efficiency of education with respect to these competences. The aim that the researchers wanted to achieve by the analysis, was to point out how frequently the competencies defined by lecturers show up in the interviews conducted with company professionals. The researchers wanted to figure out how the "educational supply" conformed with the true company needs, and to what extent the expected competencies of the labor market comply with the competencies which the dual higher VET intends to develop.

The researchers split their tasks into different parts. To analyse the competencies defined by the project tasks syllabus, a general program language and therein one specifically suitable for text analysis was applied. A software program was needed that was able to search for the competences as key words and examine their incidence, thus the researchers opted for the Python program language and its regex module.

The researchers' choice was based on the following reasons:

1. The design philosophy of the Python language prefers readability and ease of programming against the running time.

2. The Python program features simple syntax, thus concise, easy-to-read programs can be written in Python. Among others Python supports functional, object-oriented, imperative, and procedural programming paradigms.

3. Python uses dynamic types and automatic memory management and has a strict typology system. Python is an "interpreter language", which means that source and object codes are not separated, the program can run if there is an available and appropriate Python interpreter.

4. The concept of "regular expression" is not a Python-specific language element, but it a simple tool for describing a set of strings. Regular expressions can be used by importing the re or regex module in Python, and applying the functions provided by them.

5. The Google Colab is one of the most popular applications, which is based on the design and functioning of the Jupiter notebook. Its great advantage is that the application does not need to be downloaded or installed but is available online.

Further, the researchers set the aim to define and underscore the most significant competencies which the interviewees mentioned. The Nivo 12 program was used to accomplish this task.

4. Results and discussion

First, the course-related and course-specific competences were gathered, classified, and put into groups as shown in Table 3.

Table 3. Competences in courses of the dual higher VET (Competences defined by the lecturers)

Courses	Competences
Key 1. International Marketing	1. Presentation skill. 2. Team working skill. 3. Arguing. 4. Global brands. 5. Ethnocentrism. 6. Diversification. 7. Relationship marketing. 8. Supply chain. 9. Product adaptation. 10. Distributor brand. 11. Vertical price differentiation.
Key 2. Corporate or (business) management	1. Entrepreneurial competence. 2. Analytical skills. 3. Corporate management.
Key 3. Logistics informatics	1. Knowledge of SAP R/3 logistics modules. 2. SD. 3. MM. 4. PP. 5. Automated technologies. 6. Semiautomatic technologies. 7. Data processing technologies. 8. Warehousing technologies. 9. Tracking technologies. 10. CRM. 11. Information evaluation. 9. Digital literacy. 13. IT communication.

Key 4. Logistics management	1. Harmonization of logistics functions and methods. 2. Analysis with appropriate methods, systematic thinking, corporate management.
Key 5. Controlling	1. Creation of information. 2. Interpretation of information. 3. Efficient utilization of information. 4. Autonomous thinking. 5. Critical thinking.
Key 6 Corporate finance	1. Integration of knowledge of various professional fields. 2. Reporting skill. 3. Making tables. 3. Making graphics. 4. Precision. 5. Investment and financing decisions. 6. Short-and long-term decisions. 7. Risk. 8. Business risks. 9. Liquidity management. 10. Fitting principle. 11. Capital structure. 12. Capital leverage. 13. Operation leverage. 14. Financial leverage. 15. Capital costs.
Key 7. Human resources	1. Corporate and human strategy. 2. Organizational design and development. 3. Workforce planning. 4. Recruitment. 5. Workforce selection. 6. Workforce placement. 7. Redundancy. 8. Training and development. 9. Performance evaluation. 10. Payroll administration. 11. Labour, employment relations. 12. Management-union relations. 13. Health and safety. 14. Welfare issues. 15. Social policy. 16. Job analysis and planning. 17. Resource planning. 18. Job analysis. 19. Incentive management. 20. Performance appraisal. 21. Remuneration for work. 22. Information system management. 23. Culture change. 24. Change management. 25. Competence and emotional intelligence. 26. Internal communication. 27. Social skills. 28. Creativity and teamwork. 29. Empathy. 30. Assertive communication.
Key 8. Logistics	1. Customer services, quality of logistics services and its appraisal by KPI. 2. Logistics costs. 3. Trade-off between logistics costs. 2. Direct and indirect procurement. 5. Centralized and decentralized purchasing. 6. Types of customer-purchaser relations. 7. Direct and indirect distributions systems (vertical and horizontal connections). 8. Inventory mechanism. 9. Warehousing technology. 10. Warehousing processes. 11. Transportation systems. 12. 1PL, 13. 2PL. 14. 3PL. 15. 4PL. 16. 5PL. 17. Supply chain types. 18. Systematic elaboration of problems. 19. Process approach. 20. Proactivity. 21. Planning. 22. Coordination. 23. Organizing.
Key 9 Marketing	1. Analysing and problem-solving skill. 2. Convincing skill proactivity. 3. Preparing decision. 4. Project efficiency. 5. In-store marketing. 6. Cash and carry. 7. Panel research. 8. Product life cycle. 9. Selective sales. 10. Representative sample. 11. SWOT analysis. 12. Sales promotion. 13. Pull strategy. 14. Attitude. 15. Customer's price acceptance. 18. Market leader strategy.

Source: own research

The competences determined by the project tasks were read as key 1, key 2, key 3, etc. in Python for the sake of simplicity, in accordance with the indexing of Table 2. It was necessary to clean up the files containing the competencies from redundant punctuation and special characters to enable Python to handle them properly. The text of the in-depth interviews was read as text 1, text 2, etc., also in accordance with Table 3. In all cases, it was necessary to use utf-8 encoding instead of Word format.

Researchers used the program to count the number of competences or keywords in the project tasks set by the academic lecturers. These values are shown in the first column of Table 4. They then examined how many of the given keywords occur in the in-depth interviews. The high number of occurrences may indicate an overlap between the expectations expressed by the companies and those expressed by the trainers. These values can be found in the second column of the table. Next, the total number of occurrences of the competences in the text, including multiple occurrences, was counted. The multiple occurrences may indicate the importance or emphasis of a given skill or competence. These numbers are shown in the third column of the table.

Table 4. Competence frequency/occurrence

	Number of competences	**Frequency/ occurrence of competences**	**All occurrences**
key 1	11	1	1
key 2	3	1	4
key 3	13	4	13
key 4	4	1	2
key 5	5	0	0
key 6	15	11	13
key 7	30	25	29
key 8	23	5	9
key 9	16	1	2
Altogether	120	49	73

The table shows that the academic lecturers determined 120 competences. There were 49 occurrences in the in-depth interviews; regarding the multiple occurrences, 73 occurrences were found in the texts. The set of competences with the smallest occurrence contains only 3 competences whereas the set with the largest occurrence numbers 30 (ten times higher), so the difference between the number and proportion of hits is to be expected. Competence sets including less than 5 elements were defined too concisely, therefore the results may be distorted in a keyword search.

The occurrence of a competence is likely to mean that the company expectations overlap with academic lecturers' expectations. If a keyword or competence was mentioned more than once, it is likely that the concerned competence has gained emphasis in the corporate sector.

The 49 unique occurrences and 73 total occurrences suggest that they were also mentioned by companies. As expected, the proportion of hits in competence sets with a small number of items is small. It is worth mentioning that in the case of competence set Key 9, holding 16 competences, the hit rate is very low, whereas the hit rate is relatively high in the case of competence set Key 6 with 15 competences. In the case of competence sets including more than 20 items, such as Key 7 and Key 8, we see proportionally high and low hit rates; these results seem to be of more use. To identify relevant and assessable results at least 15-20 items should be established in larger text searches.

If a keyword does not occur in the interviews, it could be because that the keyword was replaced by a synonym or paraphrased in the text. If the competences were formulated as search keywords, which means that the academic lecturers wanted to determine the set of terms and definitions of a particular field in complexity (broad interpretation), the non-occurrence of an item may be attributable to the use of a synonym, or related term and skill. As a conclusion, the 59 % of competences which do not occur need further investigation. The interview analysis (made by Nivo 12) also revealed the most frequently occurring competences.

The most frequently occurring do not necessarily stem from the same set of keys. There are two corporate management modules (MM, PP) among the most popular competences, which validates the university members activity, because they put emphasis on corporate IT solutions, which seems to be a lucrative investment in the labour market.

The researchers have continued their investigations. The BGE White Paper includes the sector-specific competences that the dual higher VET wanted to develop. In contrast to the subject-specific competences defined by academic lecturers, they are of a general nature regarding the expected knowledge and competences of the International Business Economics course. Table 5 gives a summary of them.
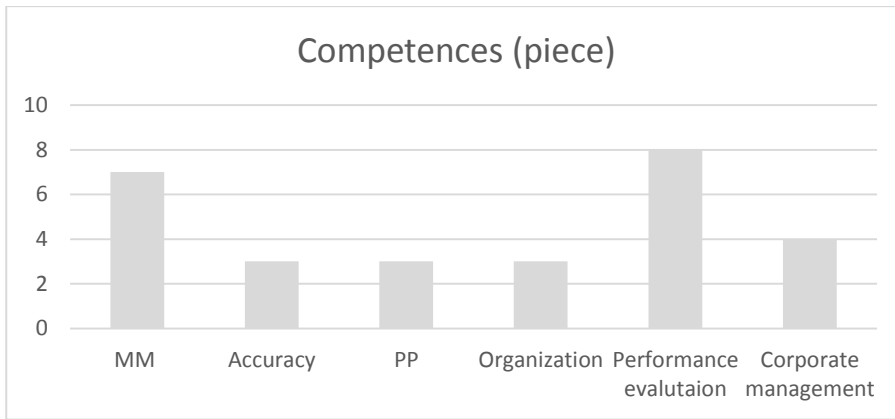
Fig. 3. The most frequently occurred competences
Source: own chart

Table 5. The competences set out by the BBS White Paper

Competences as to the BBS White Paper Key0	1. Knowledge on structure, and tendencies of international economy. 2. Thinking in processes. 3. Understanding of global, integrated supply chains. 4. Harmonized application of logistics functions and methods. 5. Application of logistics interdependencies in productions and commerce. 6. Establishing and managing commercial relations. 7. Business ethics. 8. Measuring the profitability of business activities and projects. 9. Systematic thinking. 10. Ability to aggregate the knowledge elements of different science fields. 11. Analysis with appropriate measures. 12. Ability to re-structure task-specific information. 13. Systematic elaboration of problems. 14. Convincing and encouraging skill. 15. Documentation of information. 16. Presentation skills. 17. Using statistical methods for analysing data. 18. Proper assessment of own work and position. 19. Generating, interpreting and effective using the information. 20. Pro-active thinking. 21. Applying quality-assurance systems. 22. Tolerance. 23. Decision-making preparation, arguing. 24. Loyalty, respect, and responsibility. 25. Being and acting precisely and in concentrated way. 26. Knowledge of foreign languages. 27. Planning, coordination and organizing. 28. Digital skill for making graphics and charts. 29. Alignment with corporate goals and values. 30. Using corporate ERP systems. 31. Ability to work in teams. 32. Knowledge of IT communication means.

Source: own table

The researchers compared the competences of Key0 to the previously gained data in Python, to find out the interrelations.

Applying the above-described code the Table 6 presents the occurrence of competences set by the BBS White Paper in the interviews.

Table 6. Occurrence of competences set by the BBS White Paper in the interviews

	Number of competences	Number of occurred competences	All occurrences
text 1	50	2	2
text 2	50	11	15

text 3	50	3	3
text 4	50	12	17
text 5	50	6	10
text 6	50	2	3
text 7	50	12	32
text 8	50	7	12
text 9	50	2	2
Altogether	50	27	96

Source: own table

The proportion of occurring and non-occurring competences is 54 % and 46 %; it means that the rate has improved but not significantly. However, the ratio of total occurrences to the number of competences is almost the reverse of previous results, albeit the number of occurrences amounted to 27, which is much lower than before. However, it should be clarified that the total number of competences is only 50, instead of 120. In other words, the authors may assume that in-depth interviews virtually include general, profession-specific, and profession-related competences other than course-specific skills and competences. If the number of keywords to be searched for in both texts were similar, it would enable a more balanced comparison. Anyway, it is promising that there are no 0 hits and repetitions in either of the texts.

Table 7 also indicates that the competences defined by the BBS White Paper are broader understandings which define required skills referring to the course (or subjects) requirements in part. That is the reason for its low incidence in the in-depth interviews. The respective rate is below 25 % everywhere and sometimes as low as 4 %.

The authors searched for the most frequently occurring keywords. The 5 most frequently occurred keywords are presented by Figure 6. The keyword "development" leads by a wide margin. The other four keywords hardly differentiate; thus, their occurrence order cannot be considered as relevant, but can be interpreted with appropriate tolerance.
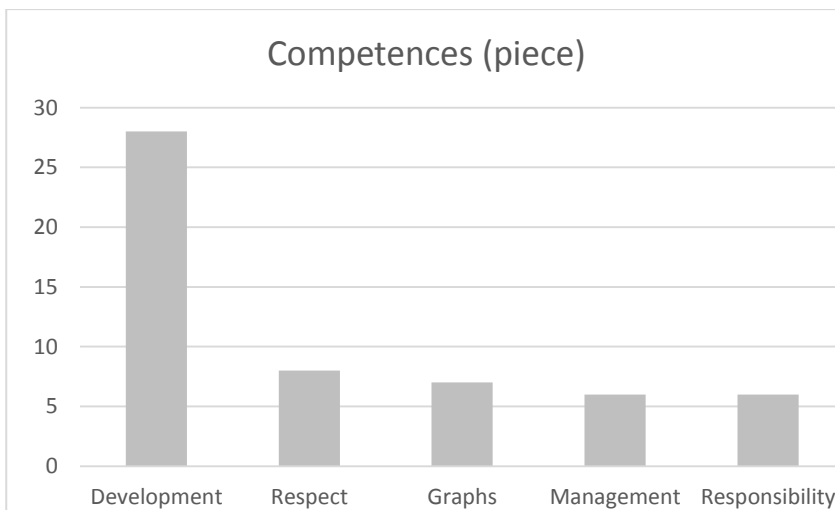
Fig. 6. The most frequently occurred competences
Source: own chart

Analysing the results of the study, the researchers concluded that the companies participating in the dual higher VET in many cases interpret the competences and their development in a general way. In the current study, the companies did not mention about 60% of the competences determined by the academic lecturers, albeit this proportion is lower in the cases of the competences set by the BBS White Paper. Since the study did not contain the analysis of related words, it is advisable to extend the concerned study to these words to refine the research

results. Based on the current study results, it can be stated that employers who have participated in the program are satisfied regarding several competence areas, but there are still several competence fields that need further improvement, and thus the authors reject their hypothesis.

Higher education is traditionally centred on knowledge, but competence-oriented programmes focus on skills (Zlatkin-Troitschanskaia, 2021). According to Bratianu, Hadad and Bejinaru (2020) this new focus requires a paradigm shift from linear curriculum based on knowledge transfer, to a nonlinear curriculum based on developing competencies. Other researchers also point out that the competence-based approach necessitates development of flexible and innovative solutions by higher education institutions (Coonan, Pratt-Adams; 2019; Martin, 2019). Most recommendations contain a strengthened collaboration with employers (Coonan, Pratt-Adams, 2019; Gámez-Pérez et al., 2020; Martin, 2019) and incorporation of more experiential learning opportunities into the academic programmes through internship and degree apprenticeship, and more active and collaborative learning elements (Bratianu et al., 2020; Coonan, Pratt-Adams, 2019; Martin, 2019).

The dual higher VET is one of the future educational models that sets various aims. One of its aims is to define a clear and definitive criterion for determining quality standards and to increase the transparency of dual higher VET education; thereby improving its recognition in labour markets by employers (Maenning et al., 2019). The skills which can be gained through work experience are "analytical and problem-solving competencies as well as, critical thinking, organisational skills and the ability to communicate and cooperate with people from different departments." (Hirsch-Kreusen, 2014: 23). However, the research has shown that it is very important for companies and universities to have a common methodology on competences, as this is the only way to achieve successful dual cooperation.

5. Conclusion
Recapitulating the results of the analysis the lack of common understanding regarding the required academic competence and their precise content, can be perceived.

The company professionals express their requirements in respect of the knowledge which they want the university to transfer by taking and referring to their daily operations and to the industry specific processes, whereas the university wants to provide comprehensive multiple-purpose competence sets, taking into consideration the respective educational regulations, the available academic literature, and the academic lecturer's expertise in teaching and work. Due to these different approaches the existing bias between the actors' – academic players and participating companies- standpoint is reasonable and comprehensible, but this difference, which gives much room for broad interpretation, needs reconciliation. During the harmonization process the unique, profession-driven, or company-specific requirements must be built into the set of competencies and skills in a way that they would not overwhelm the general requirements.

A healthy equilibrium is needed since universities must prepare students for various company profiles, for an array of jobs in international business-related sectors. However, the failure to continuously follow the companies' permanently changing human resource needs, which are the signs and reflections of their alignments to the world economy, would harm both the educational sector and the European economy and would weaken its resilience and potential competitiveness.

The pivotal conclusion reached by the authors holds that there is a need for a "common language" in respect of precise meaning of competences and skills. The university must encourage the clarification and the classification of the definitions and phrases that are being circulated in industry-university relations. The authors assume that the industry will appreciate this intention and initiative because clarified competence and skill sets are necessary to find the best candidates for recruitment and diminish the costs and time of their introduction to work.

These two fundaments of efficiency and the consequence of competitiveness can be strengthened by mutually elaborated course contents which have been traditionally believed and recognized as effective tools.

It is universally recognized that information is a valuable good and the global economy of the 21st century is based on this precious asset. However, the acquisition of information creates costs, and the person who is interested in obtaining it is only willing to pay for it until he has got access to it. After having received the information, it becomes a valueless asset for the acquirer. Pursuant to

this general thesis of science, the result of a competence clarification process must be a public good. The production of clear competence sets in courses is in the public interest, thus it needs public (state-financed) support, since both academia and industry are only indirectly interested in generating this information, but it ultimately serves the European Union's public interest, and it improves its long-lasting competitiveness. It is for this reason the authors would initiate the development of both the dual higher VET and its comprehensive mechanisms where industry and academia can harmonize, and develop knowledge, competences, and skill sets.

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To Do or Not to Do: EFL Learners' Perception on and Practice of Homework Assignment

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Abstract
Homework assignments have been explored from several different perspectives over the past few years. Learners' views and their practice of homework have been explored in different disciplines. This study attempted to explore English language learners' perception on and their practice of homework throughout a term of study. To this end, 110 adult male and female EFL learners agreed to participate in this study. Questionnaires and subsequent semi-structured interviews were used to collect the data. SPSS Software was used to analyze the questionnaire data and content analysis was used for the interviews using content analysis. The results showed that students had a positive perception towards homework assignments. Moreover, the results also revealed that learners had certain difficulties in doing homework assignments. They stated that mostly the difficulties are due to some specific reasons namely not learning the required concept, not knowing the instruction, not enjoying the homework, not paying attention, not understanding homework instruction, anxiety and stress of homework. The results offer a number of pedagogical implications for teachers, curriculum developers, and managers of language institutions.
Keywords: homework, assignment characteristics, micro-genetic analysis, perception.

1. Introduction
Man is born into a tangle of standard processes and behavior patterns, and through gradual socialization, he gets acquainted with the admissible modus operandi for the social group he is a member of. He deepens these principles and confronts them with the experiences of others

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(Tkáčová et al., 2021; Martin et al. 2022). Therefore, the school becomes a place of reciprocity, that is, individual and collective academic learning and growth. As part of today's education and educational process, it is difficult for a teacher to attract and engage students. One of the reasons is the huge amount of available information and online possibilities which appear to be very popular among young people because they provide information and entertainment, including a wide range of web technologies (blogs, Wikis, social networks and virtual networks) that are available all around us (Gadušová et al., 2021; Tkáčová et al., 2021a; Záhorec et al., 2013). The exploitation of ICT has been widely used by large amounts of young people attending educational institutions of any level. At the same time, the exploitation of technologies for education has been considered standard (Faltýnková, 2021). Therefore, it is necessary to choose appropriate methods and actively prepare various teaching aids that can motivate students, arouse interest in self-study, and thus educate them" (Petrikovičová et al., 2021, Stranovská et al., 2019, Stranovská, Gadušová, 2020). Equally important seems to be promoting the sustainable well-being of students during the educational process (Tkáčová et al., 2021a), which also prepares them for the complexity and challenges they face and will face every day. Of course, in the conviction and hope that they lead to personal development, application, to a higher standard of living, but also to the overall "social development, which is a part of a process that has consistently been a process considered a more or less direct series of assumed improvements (Tkáčová, 2021). Gadušová, Malá and Predanocyová (2020) assume that alternative suggestions may correspond to a more consistent approach to systematizing learners' knowledge in the active application of cross-curricular connections and topics.

This study is going to survey the assignment characteristics of homework, such as amount, purpose, skill area, degree of individualization, degree of students' choice, completion deadlines, and the social context in which they are going to perform. Assignment characteristics play an important role.

Homework is defined as individual or group tasks assigned to students by the teacher to be completed outside of school time for various purposes, such as getting prepared for a new learning material or reinforcing, expanding, practicing or completing newly learned material (Cooper, 1989: 7; Corno, 1996: 27). Homework, part of the daily routine, can bring a positive attitude to some students, but a kind of busy work to others that leads to frustration. There has been considerable controversy about the effectiveness of homework among researchers, administrators, teachers, parents, and students. Cooper and Valentine (2001) by doing a quantitative synthesis of research concluded that learners who did their homework generally performed better than those who did not.

The benefits of homework are obvious: checking students' degree of learning and their mastering of the learned knowledge, linking the new experience with the previous one, paying attention to the students' individual differences, attracting the students' interest towards the lesson and achieving independency, responsibility, and self-guidance in order to increase learning (Azizi, Kralik, 2020; Azizi, Pavlikova, Masalimova, 2020; El-shar'a, Abed, 2008; Zeiton, 1998). In addition to the positive effects of homework, it also has some drawbacks, such as loss of interest in academic material, physical and emotional burnout, preventing students' access to leisure time and community activities, pressure to complete homework on time, confusion of instructional techniques, and cheating (Cooper, 1994). However, it is generally accepted that homework has a positive influence on students' achievement, especially in EFL context.

Homework assignments may be short or long, or they can differentiate in both the frequency and length of individual assignments. They contribute to the building of "individual competencies and group work activity" (Azizi et al., 2021a) as well as to the development of "the academic collaboration, which is proving to be necessary especially in the present, when teaching cannot be provided in person due to COVID-19 restrictions" (Pavlíková et al., 2021; Tvrdoň et al., 2021; Azizi et al., 2021b) which brought "drastic changes that occurred in everyday life of every human being" (Ionescu et al., 2021). A lot of questions may appear dealing with the quality of distance education, both of teaching and learning–via the latest technologies, for example via social media platforms (Tkáčová et al. 2021b; Tkáčová et al. 2021c) or via mobile technologies (Al-Rahmi et al., 2021), whether students know how to learn efficiently in this manner. Moreover, researchers and academics are continuously trying to use and experiment with variable combinations of established pedagogies, tools, and technologies that lead to enhance or sustain the student learning process and motivation (Durrani et al., 2022). Based on the data, some didactic recommendations were

defined towards designing and conducting online distance courses (Faltýnková et al., 2021; Entlová et al., 2018).

Homework assignments have various purposes, such as purposes related to instruction, teachers, or school administration. They lead to the formation of education experiences that have a significant impact on the quality and type of experience that the child is exposed to and, therefore, could have a direct impact on the child's natural personality and its further development (Máhrik, Králik, 2019). Homework thus ultimately contributes to the sense of satisfaction and happiness of students; despite the fact, that we can talk about the complexity of the term happiness that is today emerging as a part of new concepts such as happyology (happiology) or science of happiness (Petrovič et al., 2021).

The purposes of homework assignments can be divided into (a) instructional and (b) non-instructional objectives (Epstein, Van Voorhis, 2001). The most common instructional purpose of homework is that learners have the opportunity to practice and review the learned materials in the class.In addition, by assigning homework, learners can transfer previous learned skills to a new situation. The non-instructional purposes of homework are to develop communication between parents and children (Balli et al., 1998; Van Voorhis, 2003), to do directives from school administrators (Hoover-Dempsey et al., 1995) and to punish students (Epstein, Van Voorhis, 2001). Moreover, letting parents know what is going on in school is the other non-instructional objective of homework (Coleman et al., 1982). Wallinger (1997), Stranovská, Hvozdíková, Munková (2019) stated that four skills are used in language learning, such as listening, speaking, reading, and writing. These skills can be used in homework assignments; however, these skills were not emphasized equally. For example, writing and reading is used more than speaking and listening. That's because teachers generally think that speaking and listening are emphasized and used in class, and homework is a good way to practice reading and writing. The degree of individualization is related to whether the teacher assigns homework to all students or a particular group. Also, it refers to whether the teacher assigns homework according to the needs of each student. The degree of choice refers to whether the homework assignment is compulsory or voluntary. The completion deadline means that if the learners can do the assignment in a short period of time, for example, by completing homework for the next session, or the learners can complete it for several days or weeks. Finally, homework assignments can be different according to the social context. Some assignments can be done individually and independently. Some assignments need the involvement of other people or can be done in a group (Cooper et al., 2006).

Additionally, research on affective factors in learning a second language is receiving great attention. It is obvious that the influence of affective factors on second language acquisition is not negligible (Stranovská et al., 2019a). The affective factor explored in this study is the attitude of students towards homework, which plays an important role. Corno (2000) believed that imposing homework on learners leads to frustration and demotivation; therefore, they perceive homework as a routine and uninteresting task (Warton, 2001). The literature supports the claim that when learners' preferred ways of learning are accommodated, they become more productive, show a more positive attitude, and their performance improves (Haar et al., 2002; Minotti, 2005). Geiser (1999) stated that students will have more positive attitudes toward homework when they understand their preferences and use them in homework processes.

Despite the bulk of research on homework, there is still paucity of studies on learners' perception toward and their practice of homework in an EFL context. The purpose is to shed light on the effectiveness of homework from the perspective of the learners and discover the challenges and problems they face while doing it.

With this purpose in mind, the study attempted to answer the following research questions:
1. What are learners' attitudes towards homework in English classrooms?
2. What are the students' accounts of the difficulties of homework?

2. Methodology
Design
The study used both quantitative and qualitative designs in order to first ask students to respond to a Likert-type questionnaire to examine their attitude, difficulties, and assignment characteristics of homework. Then an interview was conducted to provide the study with richer students' voice, and help to explore how students viewed homework assignments.

Participants

The sample of the study for the first quantitative phase included 120 EFL learners. The participants of the study were selected from different institutes in the Mazandaran Province, North of Iran. These institutes had different materials and various types of homework, which enabled getting perspectives from different contexts. The students attended two sessions of the English classes per week. Their ages ranged between 15 and 32 years and 70 were male and 50 were female. Most of the students have been studying English for more than 3 years,

For the qualitative phase of the study, 13 EFL learners were selected from the population pool based on purposive sampling.

Instruments

Questionnaire: A five-point Likert scale questionnaire containing 22 items was used. To develop the questionnaire, at first, 24 items were extracted and listed based on the comprehensive analysis of the literature. Some items were adapted from standard instruments (e.g., Cooper et al., 1998) or taken from related literature (e.g., Paudel, 2012; Amiryousefi, 2016), while others were derived from previously validated measures (e.g., Xu, 2011). These items included a mix of scales drawn from previously validated work and individual items relevant to our research questions. After reviewing the related literature, a more detailed questionnaire was developed based on the purpose of the study and was piloted. All responses to the questionnaires were loaded into a statistical software database (SPSS version 24.0) and analyzed. Because in several measures the items were newly constructed, exploratory factor analyses were conducted. All exploratory factor analyses were conducted with maximum likelihood extraction and with an oblique rotation because the factors were expected to correlate with each other. We used a combination of eigen value greater than 1 and a visual scree test to determine the number of factors in each analysis. The results of the KMO and Bartlett's tests showed that the KMO was above 0.6 ($\alpha = 0.672 > 0.6$) and the P value was smaller than 0.05 (P = 0.00), indicating the suitability of data for factor analysis. Then, confirmatory factor analysis was used to check factor loadings. Through this process, two items were eliminated because they showed either low or high factor loadings. The number of the items was, therefore, reduced to 22. Finally, the reliability of the questionnaire consisted of 22 items was assessed through the Cronbach's alpha coefficient. Considering the small number of items (four items for some elements), the reliability estimates are considered acceptable for the current research. All the Cronbach's alpha values were above 0.7, suggesting almost a good degree of internal consistency reliability.

Table 1. Reliability and Validity of the questionnaire

Elements	Cronbach's alpha (α)
Attitude	.732
Difficulty	.702
Purpose	.838

The items were reviewed, revised, and edited; the items that were identified as repetitive or overlapping were eliminated from the study.

The available items were classified into three major categories, which asked for the participants' perspectives on the following: (1) attitude toward homework; (2) difficulties and problems that students face during the process of assigning or doing homework; (3) assignment characteristics of homework which was categorized into seven subscales including: amount, purpose, skill area used, degree of individualization, degree of students' choice, completion deadline, and the social context in which they were going to perform. Afterwards, the questionnaire was established in five sections according to the goal of the research. In the first section of the questionnaire students were asked to provide demographic information. For demographics, students reported on gender, grade level, age, and years of studying English. The second section, explained the title and aim of the research. In the third section, respondents were asked to answer questions about their attitude and difficulties in homework, the amount of homework, the degree of individualization, the degree of students' choice, completion deadline, and the social context in

which they were going to perform. The anchor points for part three ranged from 1: always to 5: never. Section four was established for the purpose of doing homework. In section five, respondents were asked to answer questions about the degree of skill area used in their homework. The items available in section four and five were rated based on the following anchor points: 1: strongly disagree, 2: disagree, 3: no idea, 4: agree, 5: strongly agree.

In an attempt to avoid respondents' possible guesses as to the investigator's viewpoint, the questionnaires contained statements both for and against homework. However, when the mean value and percentage of the responses were calculated, the numbers of statements which were against their attitude and viewpoint toward homework were reversed. Therefore, students' attitudes were more obviously shown from their choices of the numbers.

Interview: In order to obtain rich data and to gain insights into the Iranian EFL teachers' and students' perspectives on the issues related to English homework, a semi-structured interview, a kind of interview "between the completely structured and the completely unstructured points on a continuum" (Bell, 1993: 94), was first carried out preceded by a comprehensive review of the literature. The reason was on the one hand, to obtain the data on the questions which addressed the research questions; on the other hand, it allowed some unexpected valuable views. First of all, the questions were designed in the hope of eliciting answers that addressed the research questions indirectly. Secondly, the interview began with the comparatively easy and more general questions and was ordered logically according to the content; this was done to ensure that interviewees felt free to join the talk. Thirdly, questions were asked in a friendly way to make the participants feel at ease.

The interview consisted of the following six questions: (1) how do you feel about homework? (2) What do you perceive to be the purposes or benefits of homework? (3) What are the challenges or difficulties to English homework? (4) How much time do you spend and how many days of a week do you assign or do homework assignments? (5) Do you think anyone helps you/your student to do English subject homework? If yes, who? (6) You prefer to assign homework which mostly includes: a) writing skill (workbook, sentence writing or writing a paragraph) b) speaking skill c) reading skill d) listening skill (your reason). Based on Brown's (2001) suggestion, the interview was conducted in Persian to minimize the measurement errors. All the interviews were audio-recorded, transcribed, and content-analyzed to discover potential patterns and themes.

After conducting the interviews, the questions and answers were organized and transcribed using Microsoft Word. Once the data were transcribed and produced, the researchers began to reflect on the overall assumptions and started exploring themes. An analysis of the data began by coding the information and exploring patterns within the text. After transcribing the interview, the coding process started by reading all transcriptions at least once and creating notes about the transcripts looking for emerging patterns and themes. In the first phase of the coding process, information was arranged from a single word to a full paragraph or even an entire response in order to derive meaning from the actual language of the participants to generate a sufficient list of subtopics to establish themes from the perspective of respondents. In the second phase of the coding process, Pattern Coding was used as "critical links" which were examined to find consistent chunks of information to explain meaning from the data collection (Saldana, 2016: 4-68). Through the process of coding and decoding, themes emerged from the data. Once themes developed, the researchers grouped similar statements to support meaningful themes. These themes were then used to support or show dissimilarities to the quantitative data gathered.

3. Results
Analysis of the First Research Question

The first research question focused on learners' attitude towards homework in English classes. As noted earlier, the 120 participants in the study were asked to complete a questionnaire in which they rated attitude, difficulty and assignment characteristics of homework on a 5-point-likert scale. Students' attitude for doing homework was assessed with 6 items in students' questionnaire. Items were phrased to focus on homework. Participants indicated the extent to which they enjoyed doing homework or the extent to which they disliked it.

The data obtained through questionnaire survey have been interpreted descriptively below. It was shown that generally 98.3 % of students believed that homework assignments help them learn better; 49.2 % stated always, 38.3 % stated usually and 10.8 % believed sometimes homework helped them learn. In general, 86.6 % of students believed that homework increased their interest,

20 % of them stated always, 40.8 % stated usually and 25.8 % of them expressed sometimes homework increased their interest. 81.6 % of students broadly enjoyed doing homework; 23.3 % of the students believed always, 30.8 % of them stated usually, and 27.5 % expressed sometimes they enjoyed doing homework. Item 4 and 6 of the questionnaire measured the same concept. Item 6 was reverse coded in the process of analysis. 78.4 % of students stated that they had a better mood than other activities while doing homework; 11.7 % believed always, 35 % of them usually and 31.7 % of them stated sometimes they had better mood than other activities. Generally, 94.1 % students stated that the did their homework; 40.8 % of students always, 35.8 % of them usually, and 17.5 % of them sometimes do their homework assignments. In order to find out whether there was a significant difference between students' attitude in different teachers' classrooms, independent sample T-tests were run, as it is shown in Table 3, Levene's Test for Equal variances yielded a p-value more than .05 for the six variables of attitude. This means that the difference between the variances was statistically insignificant meaning that students' attitudes towards homework were not different in different teachers' classes.

Table 2. Independent Sample t-test for students' attitude toward homework

Levens' Test for Equality of Variances 95 % Confidence Interval of the Difference
F sig t Df sig. Mean Std. Error upper lower (2-tailed) Difference Differences
Attitude 1 Equal variances assumed 1.08 .300 1.402 118 .164 .220 .157 -.091 .532 Attitude 2 Equal variances assumed 1.57 .211 -.025 118 .980 -.005 .225 -.452 .441 Attitude 3 Equal variances assumed 1.15 .285 1.241 118 .217 .308 .248 -.183 .799 Attitude 4 Equal variances assumed .573 .451 .497 118 .620 .115 .232 -.345 .576 Attitude 5 Equal variances assumed 1.15 .285 .658 118 .512 .129 .197 -.261 .521 Attitude 6 Equal variances assumed. .376 .541 -.338 118 .736 -.081 .240 -.558 .395

Analysis of the Second Research Question

The second research question investigated the difficulties and challenges of homework in the view of students. Six questions in students' questionnaire were related to the difficulties of homework.

Student' Difficulties in Homework

According to the frequency and descriptive statistics of students' questionnaire, only 35 % of students found their homework assignments difficult, and 50.8 % of students asked for their teachers help when the homework assignments were difficult. 70.8 % of students stated that homework was difficult when they did not pay attention to the teachers' explanation in the classroom. 73.3 % of students expressed that doing homework was difficult at home when they did not understand teacher's explanation in the classroom. 86.7 % of the students had difficulty in doing their homework when they hadn't learned the required concepts well, and 69.2 % of them believed that doing homework is difficult when they disliked doing it.

Table 3. Frequency and Descriptive Statistics of students' difficulties in homework

		D1	D2	D3	D4	D5	D6
Valid	always	5.0	5.8	14.2	8.3	10.0	15.0
	usually	8.3	14.2	23.3	30.0	41.7	26.7
	sometimes	21.7	30.8	33.3	35.0	35.0	27.5
	Seldom	44.2	40.0	16.7	18.3	10.8	20.8
	never	20.8	9.2	12.5	8.3	2.5	10.0
	Total	100.0	100.0	100.0	100.0	100.0	100.0

| Mean | 3.6750 | 3.325 | 2.90 | 2.883 | 2.541 | 2.841 |
| Std. Deviation | 1.0545 | 1.0221 | 1.211 | 1.0704 | .9065 | 1.209 |

Assignment Characteristics in the View of Students
Amount of Homework
According to the descriptive statistics, 91.6 % of students believed that their teachers assigned them the right amount of homework.

Degree of Individualization
Descriptive statistics was used to calculate means and standard deviations. The frequency of results showed that 98.3 % of students stated that their teachers assigned homework for all of the students, and 19.2 % of them expressed that their teachers assigned different types of homework to different students in the class.

Degree of Students' Choice
Descriptive statistics showed that among 20.8 % of the students who agreed on doing their homework voluntarily, 1.7 % stated that they always do their homework voluntarily, 5.8 % said usually and 13.3 % of them stated that they do their homework voluntarily.

Completion Deadline
According to the results of descriptive statistics, 98.3 % of students stated that they should complete their homework until the next session.

Social context in which students were going to perform homework assignments
According to the descriptive statistics, 98.3 % of students stated that they did their homework assignments individually, and 38.4 % of students expressed that they preferred to do their homework in groups. 28.4 % of students stated that an adult person helped them with their homework.

Purpose of Doing Homework
Descriptive analysis of questionnaire showed that 90.8 % of students believed that homework helped them practice language items. 65.9 % of students believed that doing homework brought them teacher approval. 26.6 % of students believed that doing homework brought them approval from their classmates. 53.4 % of students expresses that doing homework made parents more aware of their learning and 90% of them stated that doing homework helps them understand what is going on in the class. Moreover, 74.1 % of students believed that doing homework helps students develop a sense of responsibility, and 80.8 % of them stated that doing homework helps students work independently. 65.8 % of students believed that doing homework creates discipline. In addition, 87.5 % of students expressed that doing homework helped them learn study skills and 85.9 % of students stated that doing homework helped them get a good grade. 90 % of students expressed that doing homework helped them prepare for the next lesson and 85.8 % of students expressed that doing homework helped them review the materials. Furthermore, 89.1 % of students believed that doing homework helped them get prepared for English exams. 85.8 % of students stated that doing homework helped them understand their lessons better. 49.1 % of students believed that doing homework consolidated their English knowledge and 80.8 % of them stated that doing homework helped them recognize their weaknesses and strengths.

Sixteen questions in students' questionnaire measured the purpose of doing homework. Five questions including, purpose 2, 3, 4, 10, and 13 were related to extrinsic purpose of doing homework, and eleven questions were related to intrinsic purpose of doing homework including purpose 1, 5, 6, 7, 8, 9, 11, 12, 14, 15, and 16.

Skill area used in homework
Four questions were used in students' questionnaire to assess the four skills including speaking, listening, reading and writing used in homework assignments. According to descriptive statistics in Table 4, 60 % of students stated that their homework included speaking skill. 66.7 % of students expressed that their homework assignment included reading skill. 95 % of students stated their homework assignments included writing skill, and 31.7 % of students expressed their homework included listening skill.

Table 4. Descriptive statistics and frequencies of skill area used in homework

		Speaking Percent	reading Percent	writing Percent	listening Percent
Valid	Cdisagree	5.0	2.5	.8	10.8
	disgree	8.3	5.8	.8	17.5
	noidea	26.7	25.0	3.3	40.0
	agree	38.3	41.7	35.0	24.2
	Cagree	21.7	25.0	60.0	7.5
	Total	100.0	100.0	100.0	100.0
	mean	3.63	3.80	4.5250	3.0000
	Std. Deviation	1.06	.964	.68553	1.07688

Interview Results

It has been decided to use the semi-structured interview in this thesis because the semi-structured interview is more flexible and follows a checklist of issues and questions that the researcher wishes to cover during the session (Bryman, Bell, 2007). The reason for choosing a semi-structured interview was due to our aim to encourage the interviewees to freely discuss their own opinions on the subject. According to Damper (1995) the semi-structured interview is neither a free conversation nor a highly structured questionnaire. The segment of population that has been selected for this research has not been chosen by using a random selection method. In order to prepare fluent interviews, the questions were distributed into different categories. However, during the interview, the order of the questions was not strictly followed. Due to open and semi-structured character of the study, it seemed to make more sense to let the interviewees answer the questions in an unconstrained way, mentioning everything that came to their mind.

For coding, as a first step, the transcript was read several times and every statement that seemed relevant at a first glance was underlined. After considering the defined categories, statements, opinion or quotes were taken out and summarized into the category system. After coding all the interviews, the collected statements were analyzed and interpreted as follows.

Theme 1 – Attitude

Students' Attitude toward Homework

To get an understanding of what was interviewees' attitude toward homework, the general question 'how do you feel about homework?' was asked and eleven students answered that they had a good feeling and a positive attitude toward homework assignments, for example one of the participants stated that;

[Extract 1]: I think homework assignments are really useful and practical. In my idea, it should occur each session in order to review or write what we have learned in the class and to master that part of new lesson.

However, two of the students stated that they didn't like homework assignments, although both of them expressed that it was good for learning. Here is an example of a learner who did not like homework assignment; however, he did not completely disagree with it:

[Extract 2]: Actually, to tell the truth, I don't like homework assignments, but we have to do it and if our teacher assigns it in a right amount, it is good and useful.

Theme 2 – Purpose of Doing Homework

The second interview question attempted to discover students' opinion on the purpose or the benefits of homework. Through analysis of the data and co-construction of knowledge with learners, it was revealed that most of the students considered homework assignments important and useful for language learning. Most of the students believed that homework could help them stabilize the knowledge they have learned in the class.

[Extract 5]: In my opinion, homework is important because whenever I do homework, I practice more and I learn the new lesson better; moreover, as I practice more and more at home, new lesson sticks to my mind and I send it to my long-term memory, therefore, I will master that lesson.

It is clear from the statements that homework plays an important role in stabilization of knowledge and reviewing of materials and help students understand their lessons better. In order

to add more benefits to homework, one of the students stated that homework developed a sense of responsibility and discipline:

[Extract 6]: I think by doing your homework, somehow you feel responsibility, and homework connects you to the class and what you have learned in the class. Actually, by doing homework, you do something related to the class but outside of the classroom context. It helps you continue the process of learning regularly. If I don't have homework assignments, I postpone reviewing each lesson and it is hard for me to study when I have final exam.

It can be implied that homework has a key role in the process of learning, mainly in the sense that it helps learners practice already learned knowledge for at least a second time and make them prepare for the next lesson or for their English exam. Moreover, about three of the students believed that doing homework assignments helps them learn study skills and practice language items. One of the students stated:

[Extract 7]: when I do homework assignments, not only it helps me practice the grammar or vocabulary, but also it helps me to strengthen some skills, for example, when I make sentences with words, actually it helps me improve my writing and also it develops my speaking.

One of the students mentioned specifically to the point that homework helps them recognize their weakness and strengths and try their best to solve their problem by asking the teacher or their classmates and reach mastery to that weakness point. This extract is a proof to this claim:

[Extract 8]: I think when my teacher gives me homework, she wants to assure that we have learned the lesson and ask us to do homework at home in order to see in which part we have problems, and if we have problems, we ask our teacher next session and solve our problem, so by asking questions and seeking answers we master that part.

Theme 3 – Difficulties of Homework

The third interview question was about the difficulties or challenges they had faced during doing homework assignments. About eight of the students stated that sometimes they were not in a mood for homework and it was boring for them to do a huge amount of homework each session. Two of the students expressed that they did not understand the questions in their homework and they did not know what to do, therefore, doing homework assignments turned in to a big deal for them. Five students mentioned specifically some parts of homework assignments including grammar, new vocabularies and their pronunciation, writing stories and sentences to be a great amount of difficulty for them. Moreover, one of the students stated that homework is stressful and when they postpone homework assignments, they become anxious and disturbed the whole day. One of the students stated that not all of the homework assignments are useful and they are mostly time-consuming and tedious:

[Extract 11]: in my idea, our teacher gave us a large amount of homework and most of the time I do my homework carelessly. I think homework assignments should be efficient, and it should not be time-consuming.

Theme 4 – Average time and Frequency of Homework in a Week

The fourth theme investigated the average time spent on homework by students. Ten students stated that they spent between thirty minutes to one hour for their homework assignments. One student stated that he spent less than thirty minutes and two students sated that they spent more than one hour for English homework assignments. Furthermore, all of the students stated that they did homework assignments twice a week. Actually, they had English class two times in a week and each session their teachers assigned them homework. One of the students stated;

[Extract 16]: Actually, it depends on the task and expectation of teachers. I, myself spend between thirty minutes to one hour for homework each session. But if the task was difficult or my teacher assign too much homework and check them next session, so I spend more time on it even more than two hours.

It is obvious the amount and difficulty of the task is the important aspect for the time spends on homework. More homework assignments desire more time. In addition, teachers' expectation and care for homework is an important reason for spending more time doing homework. If students suppose that teacher do not check homework, then they will not pay attention on doing it carefully.

Theme 5 – Assistance in doing homework

When asked whether there was someone who helped them in homework assignments, four students stated that they asked for their parents', sibling's and classmates' help. Mostly, they asked

their sibling and classmates' help rather their parents. Nine students expressed that they did not ask for others help and they did homework assignments themselves.

Theme 6 – Four skills used in homework assignments

Students' preference on the four skills in their homework was asked. Eleven students put speaking skills in priority for different purposes. The first reason was to communicate with foreigners and express their intention when they travel to a different country. The second reason was to talk about different subjects in the class, share their experiences and feelings, and improve their speaking as a basic skill because the speaking skill has been attended much in foreign language learning countries like Iran. The third reason was that the speaking skill was a comprehensive skill and students not only speak, but also listen to other people and can use different skills and sub-skills, such as listening, grammar, vocabulary and so on.

[Extract 18]: I like speaking skill first, and then listening skill because as we talk more and more we can improve our speaking. Also, when we go to a foreign language context, nobody asks us grammar, but we need to speak to communicate, I like listening skill because I can understand what the speaker says.

After the speaking skill, about eight students preferred the listening skill in their homework assignments. It was important for students to understand what their teacher says in the classroom or at least understand what people in the movies or songs say. Moreover, one of the students stated that she preferred the writing skill in her homework assignments because she had weaknesses in writing and one of them expressed that after the speaking skill, she likes reading story books, because she enjoys reading. Furthermore, one of the students had a neutral idea and considers all four skills fundamental:

[Extract 19]: I think all the skills are good. I think we should strengthen all the skills and master all of them simultaneously. None of skills has priority over the other. In my idea, all of them are important and students should reach proficiency in all of the four skills.

4. Discussion

Homework has been a controversial issue for several years. Teachers and students are constantly differing in their opinions on whether homework is actually an effective way to increase student performance. The first and second research questions helped the researcher focus the study on finding out just how students perceived homework. The answers to these research questions could help teachers and students identify what works and what does not, with respect to homework, so that it is as meaningful as possible for the learning of students.

When talking about homework, it seems that students have different attitudes toward homework with regard to its worth and purpose. It is essential to motivate students to develop a favorable attitude towards homework. Some students find it interesting and important, while others develop an unfavorable attitude towards it. Hence, it is important to find out their attitude, which will be of great help to teachers in handling homework issues easily. Generally, students' usual opposition and resistance toward homework led to the thought that students adopted a negative attitude toward it; however, after careful analysis of the tables and extracts from questionnaires and interviews, it was revealed that there was a positive attitude toward homework assignments in the minds of the learners. The results are in line with the findings that students' views about homework play an important role in their homework behavior (Cooper et al., 1998; Hoover-Dempsey et al., 2001; Warton, 2001; Xu, 2005). According to the learners in this study, homework plays a key role in their language learning process. 98.3 % of the students believed that homework assignments helped them learn better and 86.6 % of the students believed that homework increased their interest. Furthermore, 81.6 % of the students generally enjoyed doing homework and 78.4 % of the students stated that they were in better mood than other activities while doing homework. 94.1 % of the students stated that they did their homework regularly. Findings showed that even those students, as explained in extract 2, who disliked homework assignments, believed that it was beneficial for their learning and it helped them review, repeat, and stabilize what they had learned in the class. In line with these findings, "Attitude of school students towards homework", Letterman (2013) found that homework is seen as a valuable and crucial resource for teaching, allowing students to practice, and learn the unit material. Generally, it can be concluded that students have a high level of attitudes towards homework assignments. This can be supported by the study conducted by Shumow (2011) who had also found that students have positive attitudes towards homework and feel it is important in helping them to do well at school. The results of this study do not, however, support the ideas put forth

by scholars such as Mikk (2006) and Kohn (2006), who believe that homework has destructive effects. Based on the results of this study, almost all participants believe that homework has significant benefits for English learning, and the results supported the study done by Cooper and Valentine (2001), who suggested that homework has a positive impact on student achievement and students report positive attitudes to homework, and feel some homework is important in helping them do well at school. Furthermore, students who complete homework generally outperform students who do not on some measures of academic achievement.

The second research question discussed the difficulties of students and teachers in doing or assigning homework assignments. The study explored reasons for incomplete assignments by directly asking students to respond to questions about amount and quality of homework, difficulty, tardiness, lack of interest, and extracurricular activities – all have been considered in the literature as possible reasons for unsuccessful homework completion (e.g., Hong et al., 2011; Margolis, McCabe, 2004; Vatterott, 2010).

As a result of the research, it was determined that students face difficulties doing homework due to the problems of boredom and weariness "emotionally"; inability to understand the homework instruction, not paying attention to the explanations of the teachers, new untapped topics and difficulty in homework assignments 'cognitively'. According to the results, only 35 % of the students found their homework assignments difficult, and 50.8 % of the students asked their teacher for help when the homework assignments were difficult. 70.8 % of the students said that homework was difficult when they did not pay attention to the teachers' explanation in the classroom. 73.3 % of the students expressed that doing homework is difficult at home when they did not understand teacher's explanation in the classroom. 86.7 % of the students had difficulty doing their homework when they had not learned the required concepts well, and 69.2 % of them believed that doing homework is difficult when they dislike doing it. Qualitative results showed that one of the main difficulties of students that make them bored is to do assignments that are repetitious, meaningless, and lack creativity. The students stated that not all homework assignments are useful and are mainly time consuming and tedious; therefore, they are not in a mood to do homework and it is boring for them to do a lot of homework each session. The findings of this study are in alignment with Corno (2000) that homework often involves tasks that many view as boring, repetitious, irrelevant, difficult, or unimportant, which must be done without the structure present in the classroom. This finding is also consistent with Palardy´s study (1995) that students may not complete homework assignments which they feel are boring and routine. Teachers should make the homework relevant, but interesting and appealing to the students' learning style.

Some students mentioned specifically some parts of homework assignments including grammar, new vocabularies and their pronunciation, writing stories and sentences to become a major difficulty of homework for them. This finding is consistent with Paudel's (2012) study that the highest frequency of students who find English subject homework difficult is due to lack of word power and grammar. The other difficulty of homework is the anxiety and stress that has been imposed on students. The students got nervous when they postponed their assignments. Many students consider homework the chief source of stress in their lives (Kelley, Kahle, 1995).

Characteristics of the assignment are also important. According to Cooper (1989), variations in homework can be classified according to its (a) amount that can appear as differences in both the frequency and length, (b) skill area, (c) purpose of homework which can be divided into instructional and non-instructional objectives, (d) degree of choice for the student which refers to whether the homework assignment is compulsory or voluntary, (e) completion deadline which can vary from short term, meant to be completed overnight or for the next class meeting, to long term, with students given days or weeks to complete the task, (f) degree of individualization, which means homework can be designed for individual students or whole classes and whether the teacher tailors assignments to meet the needs of each student, (g) social context in which they are carried out. Some assignments are meant for the student to complete independent of other people. Assisted homework explicitly calls for the involvement of another person, a parent, or perhaps a sibling or friend.

On the other hand, 50 % of the students believed that their teachers always assign them the right amount of homework and 28.3 % of them stated that their teachers usually assign the right amount of homework. According to the interview results related to the average time spent on homework by students, most of them stated that they spent between thirty minutes to one hour for their homework assignments. The findings are in line with Cooper's (1989) meta-analysis that for

high school students, the positive relationship between homework time and achievement did not appear until at least one hour of homework per week was reported. According to the interview results, the amount and difficulty of the task was mentioned as the important aspect for the time spent on homework. Another aspect for spending more time on homework is teachers' care for homework. Students will pay more attention, spend more time, and do their homework carefully if their teacher checks the answers and values homework assignments. Furthermore, all students stated that they should do homework assignments twice a week. However, 40.8 % of the students stated that they always completed their homework assignments and 35.8 % of them expressed that they usually did homework. However, it is also clear from the surveys mentioned above that not all students complete the homework they are assigned. Overall, it seems that some homework is better than too much or none at all. This research indicates that the 'more homework, the better' view is misleading and should not be the basis of policy and practice.

The results of the questionnaire showed that 90.8 % of the students believed that homework helps them practice language items. 90 % of the students stated that doing homework helped them understand what is going on in the class. Furthermore, 74.1 % of the students believed that doing homework helped them develop a sense of responsibility and 80.8 % of the students stated that doing homework helped them work independently. 65.8 % of the students believed that doing homework created discipline. Furthermore, 87.5 % of the students indicated that doing homework helped them learn study skills, and 90 % of the students indicated that doing homework helped them prepare for the next lesson. 85.8 % of the students said that doing homework helped them review the materials. 85.8 % of the students stated that doing homework helped them understand their lessons better. 49.1 % of the students believed that doing homework consolidated their English knowledge and 80.8 % of them stated that doing homework helped them recognize their weaknesses and strengths. EFL learners around the world are also given homework to increase their exposure to English, to reinforce and help them retain their English knowledge, and to enable them to continue their language learning even outside educational institutions (Wallinger, 1997).

Furthermore, 65.9 % of the students believed that doing homework brought them teacher approval. 26.6 % of the students believed that doing homework brought them approval from their classmates. 53.4 % of the students said that doing homework made parents more aware of their learning. This finding is further supported by the outcome in which the students in this sample more likely agreed that they did homework for intrinsic rather than extrinsic reasons. As students go through school, their parent's involvement in their academics may decrease each year as students become more independent. The results are in line with interview and observation data from previous studies (Xu, Corno, 1998; Xu, Yuan, 2003), which showed that children perceived homework as a way to reinforce school learning (an intrinsic reason), as well as to seek approval from adults (an extrinsic reason). Researchers such as Xu (2011) along with Cooper et al. have also found that students at higher grade levels received less direct involvement from parents on homework (Cooper et al., 2000). Furthermore, 85.9 % of the students stated that doing homework helped them get a good grade. 89.1 % of the students believed that doing homework helped them prepare for English exams.

Another characteristic of homework is the social context in which they are carried out. Some assignments are meant for the student to complete independent of other people. Assisted homework explicitly calls for the involvement of another person, a parent, or perhaps a sibling or friend. About 82.7 % of teachers stated that their students did their homework individually. It means that they do most of their homework by themselves; however, the interview results revealed that the students got help from others and mainly siblings and then their classmates helped them with homework assignments. It is obvious that students get help from others during the different levels of their learning, and adult monitoring becomes less necessary as students get older and more experienced with homework. However, students who are in lower level or weaker than other students mostly get help.

The results of this study do not support the studies (Kackar et al., 2011; Warton, 2001) indicating that homework can help parents become involved and check their children's progress. According to the participants of the qualitative phase of the study, parents in countries such as Iran are either busy or unfamiliar with English and cannot get involved in their children's English homework to monitor and support their English learning. It seems reasonable to suggest that as students get older, the role of parent facilitation of homework may have a diminishing influence on grades. That would occur because parents become less able to directly instruct students as the material becomes more difficult. We might also expect that the importance of the student's own attitude towards homework would become

stronger. As students gain autonomy and as they approach upper-grade levels, they gradually prefer working without someone looking over their shoulder (Warton, 2001).

5. Conclusion

This study was an attempt to investigate Iranian language learners' perception, difficulties, and assignment characteristics of homework given to them. Concerning this, the mixed method design as a method of collecting data in both quantitative and qualitative way was used. Based on the results it seems that, when teachers design homework assignments, their understanding of students' homework problems would help them develop assignments that meet each individual student's readiness and needs. To generate homework more relevant to students, teachers need to have an understanding of homework difficulties that students are experiencing and the reasons students do not complete their assignments. The results showed that learners mostly agreed on the compulsory nature of their homework, besides, learners stated that homework should be completed until next session. Most of the learners do their homework individually; however, students who are in lower level or weaker than other students mostly get help. In addition, based on the perspectives of the majority of the participants of both the qualitative and quantitative phases of the study, homework assignments are done mostly for intrinsic reason such as, understanding the materials better, knowing their weaknesses and strengths, practicing language items, getting prepared for exams, reviewing the learned materials and elements, working independently, developing a sense of responsibility, consolidating their English knowledge, helping students learn study skills, understanding what is going on in the class, and developing good discipline. On the other hand, extrinsic reason of doing homework such as, teachers' approval, peer approval, parents' awareness of what is going on in the class, getting good grade, and getting prepared for English exams are paid less attention.

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Perceived Academic Stress and Social Support among University Undergraduate Students During COVID−19 Pandemic

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Abstract

University students have been affected by coronavirus outbreak and by the changing study conditions due to the multiple quarantine periods. This paper aimed at investigating the differences of perceived academic stress and perceived and received social support in university undergraduate students during the two waves of the COVID-19 pandemic. The current study utilized the quantitative longitudinal approach with the sample of 188 undergraduates whose participated on both stages of investigation (during the first wave and the second wave of the COVID-19 pandemic). The data of Perceptions of Academic Stress Scale, Multidimensional Scale of Perceived Social Support, and modified version of Received Support Questionnaire have been used for the analysis. The findings indicated that the level of social support among university undergraduates improved significantly during the second wave of COVID-19 pandemic compared to the level during the first wave. It was found that all perceived social support indicators levels were higher during the second wave of pandemic than during the first wave. The study results also revealed significant differences between key received social support indicators among university undergraduates during the first and second wave of the pandemic. Specifically, university undergraduates reported greater informational support, tangible support, and received social support−total during the second wave of the pandemic than during the first wave.

Keywords: perceived academic stress, perceived social support, received social support, Covid-19 pandemic, university undergraduate students.

1. Introduction

The COVID-19 pandemic has directly or indirectly affected almost every person either through the infection coronavirus or through the wide-ranging measures and their economic and

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social impact. Therefore, the impact of the pandemic on mental health outcomes has been frequently studied in the general population. Critical review by Manchia et al. (Manchia et al., 2021) highlighted that "the pandemic and the accompanying measures have led to changes in people's daily routines, limited social interactions, as well as formed tensions among families in lockdown together, and fear of getting ill and/or spreading the virus" (Manchia et al., 2021: 2). Meta-analyses revealed that lockdowns are mentally challenging periods for university undergraduates since stress levels are significantly increased and can reach clinical levels in this population (Damiano et al., 2021; Fischer et al., 2020).

"Stress can be defined as an experience when people perceive situational demands to exceed their coping resources" (Malinauskas, 2010: 747). Perceived academic stress among university students can be defined like stress, which „emerges out from experiencing stress due to factors such as scholarship requirements, family-related pressures, competition in the class and course-related stress and financial burdens" (Misra, Castillo, 2004: 133). Web-based learning, limited social interactions, and lockdown have changed lifestyle and learning habits, and have had an impact on students' academic stress levels and psychological well-being (Vulić-Prtorić et al., 2020). Coronavirus outbreak brought many additional sources of stress: „concerns about one's own health risks and those of loved ones, abnormally reduced social contacts with others, separation from friends and family, loss of freedom, closure of universities, online education" (Vulić-Prtorić et al., 2020: 1). Students were forced to stay away from the usual places for them (for instance, colleges, universities). Students especially missed their friends, colleges, universities, campuses, libraries, laboratories, face-to-face group assignments projects. Due to the increased stress among university students, educators have also had more challenges because they needed to move from the role of educator to the role of intellectual mentor. Psychological consequences of lockdowns during coronavirus outbreak had negative impact on mental health among university students and this influence can last for months (Brooks et al., 2020).

The present study explored three constructs (perceived academic stress, perceived social support and received social support) in the context of two different periods Covid-19 pandemic and strives to reveal how the undergraduates' perceived academic stress and social support (perceived and received) has been changed. Perceived social support is defined as the "social resources that persons perceive to be available or that are actually provided to them by non-professionals in the context of both formal support groups and informal helping relationships" (Cohen et al., 2000: 4). Received support typically could be interpreted like „the frequency with which an individual has received supportive resources during a specific time frame and is usually assessed with retrospective self-reports" (Gottlieb, Bergen, 2010: 512). We need to analyse both types of social support because perceived and received support generally differed in 12 % of the total variance (Haber et al., 2007).

The present study is based on the Theory of Stress-Buffering Role of Social Support (Cassel, 1976) in the context of the COVID-19 pandemic. The Theory of Stress-Buffering Role of Social Support highlights that social support plays a protective role against the negative effects of stress from negative life events on mental and physical health (Szkody et al, 2021). Social support or resources that a person has, or thinks they (resources) have available, can help the person feel more in control of a stressful situation or can lead to skilful processing of a negative event (for example during coronavirus outbreak) (Szkody et al, 2021). To sum up, perceived social support can help the person reappraise stressful events (Cohen et al., 2000), whereas received support can intervene in the effects of stress to help with coping (Lakey, Cohen, 2000). Researchers (Nelson et al., 2020) have found that higher levels of support are protective against social distancing, self-isolation and stress during the coronavirus outbreak among not only university students but also among adults age 20 and older.

According to Rogowska et al. (Rogowska et al., 2021a: 3) "changes occurred between the first and second waves of the COVID-19 pandemic in perceived stress, and coping styles, as a consequence of stressful person–environment transactional process". During the first wave of the pandemic, there was a lot of stress on the public, but when the lockdown was cancelled, people live with the hope that the pandemic would end. During the second wave, although the quarantine was cancelled, but "there was a lot of information about new strains of coronavirus, and predictions about the end of the pandemic were not clear" (Dumciene, Pozeriene, 6). Therefore, it was important to reveal how the undergraduates' perceived academic stress and social support has

been changed. Many investigations in this research field are based on cross-sectional study designs and they cannot identify the psychological impact during the different time points of the COVID-19 pandemic (for instance, during the first and second waves of pandemic). This means that longitudinal study design with investigation on the same participants at different waves of the COVID-19 pandemic are required. Consequently, we designed a longitudinal cohort study with the two waves of peak phases of the quarantine periods. Accordingly, the following research questions guided this study, which is based on the complex analysis of perceived academic stress and perceived and received social support in the context of two waves of the COVID-19 pandemic: 1) Does perceived academic stress differ in university undergraduate students during the first and second waves of the COVID-19 pandemic? 2) Do perceived and received social support differ in university undergraduate students during the first and second waves of the COVID-19 pandemic?

Study hypotheses – we hypothesize that (1) perceived academic stress levels among university undergraduates after the second wave of COVID-19 would be significantly lower than after the first wave and (2) social support levels after the second wave of COVID-19 would be significantly higher than after the first wave. Our hypotheses are based on university students' longitudinal studies (Amendola et al., 2021; Li et al., 2020), which indicated a decrease in stress symptoms with time, and increase in social support.

The aim of the study was to determine perceived academic stress and perceived and received social support in university undergraduate students during the two waves of the COVID-19 pandemic. In our opinion, it is very important to analyse these phenomena in the context of the COVID-19 pandemic because it can broaden our understanding where social support may decrease or increase, and how university teachers and significant others can help undergraduates during the coronavirus outbreak.

2. Methods

Sample and Procedure. A cohort study was conducted during the first (First Wave) and second (Second Wave) waves of the COVID-19 pandemic. We have chosen the random serial sampling method for this study. Two universities were selected using simple random sampling as they were similar according to the comparability of university size and their quality of undergraduate students. The selection of six academic student's groups from each one was conducted by a randomization software. The sample size recruited for the study from all 12 selected groups undergraduates from the two universities. E–mails with the invitation to participate in the investigation for all undergraduates were sent, and students participated voluntary on-line. In the on-line applied questionnaire undergraduates were also asked to provide demographics including age, gender, academic year, academic group code, and university affiliation.

The sample consisted of 196 undergraduates (102 females and 94 males) during the first wave of COVID-19 and of 188 undergraduates from the same chosen academic groups (99 females and 89 males) during the second wave of pandemic. The sample of 188 undergraduates whose participated on both stages of investigation and whose mean age at the start of the study was 20.65 years (SD = 1.41) has been used for analysis.

The first wave of coronavirus disease (lockdown) in Lithuania was from 16 March 2020 to 17 June 2020. The second wave (lockdown) was from 7 November 2020 to 30 June 2021. The first survey was conducted from 1 June 2020 until 20 June 2020. The second survey was administrated from 1 June 2021 to 30 June 2021.

The study was approved by the Committee for Social Sciences Research Ethics of Lithuanian Sport University. The research was conducted in accordance with ethical guidelines and the legal code of the country in which the study was conducted. The study used the three following instruments listed below.

Instruments. Perceptions of Academic Stress Scale (PAS) (Bedewy, Gabriel, 2015) is an 18-item, five-point Likert-type scale to measure perceived academic stress and its sources in students. This scale was standardized on students pursuing undergraduation and postgraduation. The responses ranged from (1 – "strongly disagree" to 5 – "strongly agree") measuring four dimensions with internal consistency. Four dimensions (components) are as follows: pressures to perform (0.6), perceptions of workload and examinations (0.6), self-perceptions (0.5) and time restrains/constraints (0.6). Pressures to perform "refers to the excessive stresses from the competitive peer pressures, parents' expectations, and teachers' critical comments on students'

performance" (Bedewy, Gabriel, 2015: 5). Second dimension "refers to stresses relating excessive workload, lengthy assignments, and worried about failing examinations (Bedewy, Gabriel, 2015: 5). Third component "refers to academic self-confidence and confidence for success as a student, in future career and confidence in making the right academic decisions (Bedewy, Gabriel, 2015: 5). Time restrains "refers to stresses as a result of limited time allocated to classes, inability to finish homework, the difficulty to catch up if behind, and the limited time to wind up or relax (Bedewy, Gabriel, 2015: 5). It has been also calculated total indicator of perceived academic stress (Total perceived academic stress). The internal consistency of whole scale was .72 for the present sample.

Individual perceptions of social support among university undergraduates were assessed using the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988). "The MSPSS has been shown to be psychometrically sound, with good reliability, factor validity and adequate construct validity" (Zimet et al., 1988: 33). The MSPSS consists of 12 items describing three different sub-scales: Family Support (4 items), Friend Support (4), and Significant Other Support (4). Respondents used a 7-point Likert-type scale (very strongly disagree to very strongly agree) with each item. Cronbach's alphas ranged from .91, .87, and .85, for the subscales of perceived support from family, friends and significant other respectively (Zimet et al., 1988). "The reliability of the total scale was .88, and these values indicate good internal consistency for the scale as a whole and for the three subscales" (Zimet et al., 1988: 36). The Lithuanian version of the MSPSS reported an internal consistency value of .61 for whole scale (Malinauskas, 2010). It has been also calculated total indicator of perceived social support (Perceived support–Total) by summing and averaging items in the present study. The coefficient alpha for whole scale was .71 for the present sample.

The Athletes Received Support Questionnaire (ARSQ; Freeman et al., 2014) was modified for students and used to measure received social support among university undergraduates. "The participants were asked to rate on a 5-point Likert (0 – none, 1 – once or twice, 2 – three or four times, 3 – five or six times, and 4 – more than seven times) using 22 items" (Freeman et al., 2014: 194). For each item, the participants rated the frequency of support they received respectively from teachers/lecturers and friends/classmates over the previous week. This instrument measures four dimensions of received social support among university undergraduates: emotional support (5 items: e.g., "cheer you up"), esteem support (5 items: e.g., "reinforce the positives"), informational support (6 items: e.g., "give you advice about what to do"), and tangible support (6 items: e.g., "help with time planning"). It has been also calculated total indicator of received social support (Received support–Total). Previous research "indicated acceptable level of internal consistency of the ARSQ (alpha =.89–.94)" (Katagami, Tsuchiya, 2017: 74). The reliability and validity of the modified version of ARSQ for students was confirmed in a pilot study for the present investigation. The modified version of ARSQ for students shows acceptable level of internal consistency (Cronbach's alpha coefficients ranged from .76 to .88) for the present study.

Statistical Analysis. Research data were statistically processed using SPSS 26.0 (Statistical Package for Social Sciences). Descriptive statistics, namely means, standard deviations, were calculated. Skewness (the symmetry of a distribution) and kurtosis (the homogeneity of a distribution) coefficients were calculated for the verification of the assumption of data normality because Student's *t*-test requires normally distributed data. Skewness and kurtosis coefficients were between +1 and -1. "When skewness and kurtosis coefficients are in the range from 2 to −2, the distribution of all variables does not significantly differ from the normal distribution and Student's *t*-test can be used for comparisons between means" (Dumciene, Pozeriene, p. 6). We calculated the reliability of each dimension given by the index of Cronbach's alpha internal consistence. Data analysis used the Student's *t*-test for paired samples, comparing means between the first and second surveys (during first and second waves). Effect sizes were expressed as Cohen's *d*. Cohen's *d* effect sizes are generally defined as small (*d* = .2), medium (*d* = .5), and large (*d* = .8). Statistical significance was set at $p < .05$ for all tests.

3. Results

The results obtained from the survey using the Perceptions of Academic Stress Scale are summarised in Table 1.

Table 1. The statistical indicators of perceived academic stress among university undergraduates during the first and second waves of the COVID-19 pandemic

Components	First Wave		Second Wave		*t*-test score	*p*	Cohen's *d*
	M	*SD*	*M*	*SD*			
Pressures to perform	3.52	0.558	3.34	0.490	3.63	0.000	0.34
Perceptions of workload	3.83	0.416	3.70	0.363	3.35	0.001	0.33
Academic self-perceptions	3.62	0.374	3.54	0.294	2.27	0.024	0.24
Time restraints	3.61	0.394	3.50	0.578	2.24	0.026	0.22
Total perceived academic stress	3.66	0.307	3.52	0.276	4.87	0.000	0.49

Notes: M – mean; SD – standard deviation; Cohen's d – effect size

Using the Student's *t*–test for paired samples, we found that with respect to all components of perceived academic stress university undergraduates during the first and second waves of the COVID-19 pandemic differed statistically significantly. As illustrated in Table 1, during the second wave of pandemic undergraduates indicated lower perceived academic stress than during the first wave of pandemic and reported lower scores of pressures to perform (t (187) = 3.63; p = 0.000), perceptions of workload (t (187) = 3.35; p = 0.001), academic self-perceptions (t (187) = 2.27; p = 0.024), time restraints (t (187) = 2.24; p = 0.026), total perceived academic stress (t (187) = 4.87; p = 0.000). Thus, all scores of components of perceived academic stress were rated higher during the first wave of pandemic than during the second wave.

The results of the paired samples *t*-tests also were used to reveal the differences between perceived social support among university undergraduates during the first and second wave of the pandemic. These results are presented in Table 2.

Table 2. The statistical indicators of perceived social support among university undergraduates during the first and second waves of the COVID-19 pandemic

Components of perceived support	First Wave		Second Wave		*t*-test score	*p*	Cohen's *d*
	M	*SD*	*M*	*SD*			
Family support	4.28	0.594	4.43	0.600	-2.52	0.013	0.25
Friends support	4.48	0.705	4.65	0.563	-2.64	0.009	0.27

Significant other support	4.36	0.613	4.50	0.579	-2.21	0.028	0.23
Perceived support–total	4.43	0.396	4.53	0.376	-2.41	0.017	0.26

Notes: M – mean; SD – standard deviation; Cohen's d – effect size

It was found that university undergraduate students' perceived social support indicators levels were higher during the second wave of pandemic than during the first wave. Statistical analyses revealed that university undergraduates reported greater scores of family support (t (187) = -2.52; p = 0.013), friends support (t (187) = -2.64; p = 0.009), significant other support t (187) = -2.21; p = 0.028), perceived support–total t (187) = -2.41; p = 0.017). These data reveal that the restrictions imposed during the second wave of COVID-19 pandemic, the decline in social contacts, isolation (quarantine), and changes in study conditions were possibly counterbalanced by perceived better social support.

The overall received social support among university undergraduates during the second wave of the COVID-19 pandemic was statistically significantly (p < 0.05) better than during the first wave in three from five indicators (Table 3).

Table 3. The statistical indicators of received social support among university undergraduates during the first and second waves of the COVID-19 pandemic

Components of received support	First Wave		Second Wave		*t*-test score	*p*	Cohen's *d*
	M	*SD*	*M*	*SD*			
Emotional support	2.55	0.469	2.57	0.383	-0.49	0.625	0.05
Esteem support	2.22	0.463	2.25	0.438	-0.63	0.527	0.07
Informational support	2.54	0.498	2.63	0.424	-1.99	0.048	0.19
Tangible support	2.38	0.428	2.46	0.364	-1.98	0.049	0.20
Received support–total	2.42	0.223	2.48	0.210	-2.47	0.014	0.28

Notes: M – mean; SD – standard deviation; Cohen's d – effect size.

There were the significant differences between received social support among university undergraduates during the first and second wave of the pandemic. University undergraduates reported greater informational support (t (187) = -1.99; p = 0.048), tangible support (t (187) = -1.98; p = 0.049), and received support–total (t (187) = -2.47; p = 0.014), during the second wave of the pandemic than during the first wave. Meanwhile, the paired samples *t*-test showed that there no significant differences between received social support among university undergraduates during the first and second wave of the pandemic in terms of emotional support (t (187) = -0.49; p = 0.625), and esteem support (t (187) = -0.63; p = 0.527). The results of this research reveal that

probably due to better received social support during the second wave of COVID-19 pandemic perceived academic stress levels were lower.

4. Discussion

This study aimed to analyze perceived academic stress and perceived and received social support in university undergraduate students during the two waves of the COVID-19 pandemic. We used the Student's *t*-test for paired samples, comparing means scores between the first and second surveys to reveal the differences between stress and social support indicators among university undergraduates during the first and second wave of the pandemic. We observed that all components of perceived academic stress changed and perceived academic stress levels after the second wave of COVID-19 were significantly lower than after the first wave. Our first hypothesis, that perceived academic stress levels among university undergraduates after the second wave of COVID-19 would be significantly lower than after the first wave, was confirmed.

The present study has revealed that university undergraduate students' total perceived academic stress levels were higher after the first wave than those of after the second wave of COVID-19 (effect size was week, Cohen's *d* = 0.49), what is in agreement with the data found by Rogowska et al. (2021b), where the differences between waves in perceived stress "were significant, with moderate effect size, $\chi^2(2) = 152.69$, $p < 0.001$, Cramer's V = 0.28)" (Rogowska et al., 2021b, p. 6) or with the data found by Panteli et al. (2021), where effect size was small (Cohen's *d* = 0.37). The present research data may be explained by the data of meta-analysis (Malinauskas, Malinauskiene, 2022), which emphasises that during the beginning of COVID-19 pandemic, undergraduates' perceived stress have only increased. "Students experiencing worsened depressive symptoms, diminished sleep quality, increased anxiety, social disconnectedness, an absence of peer support, loneliness, gloom, and outrage" (Malinauskas, Malinauskiene, 2022: 2). During the second wave the dynamic of the spread of the coronavirus and level of restrictions, duration of quarantine, as well as resilience and adjustment has changed the situation and perceived stress levels decreased.

Our results coincide with other studies on the university students stress, for instance, by Rogowska et al. (2021b), which indicate that there are significant differences in stress across three waves of the COVID-19 pandemic, and by Aslan et al. (2020), which determined that coronavirus outbreak has enforced social isolation, which is strongly related to high stress levels. Previous investigation indicates that the high levels of perceived stress among university undergraduates during the first wave of coronavirus outbreak "were associated with greater concern about school-related problems, such as worry about insufficient computer skills, poor quality of online classes, passing classes and exams online, academic performance, professional career opportunities, and future studies" (Rogowska et al., 2021b: 12). A reduction of perceived stress during the second wave of pandemic "may be linked to a relaxation of the restrictive measures, for which previous studies have highlighted a significant psychological impact" (Gori, Topino, 2021: 10)).

Our results support Hypothesis 2, that the perceived and received social support levels after the second wave of COVID-19 would be significantly higher than after the first wave. We established that effect size for observed differences in perceived social support–total was week (Cohen's *d* = 0.26) as well as for differences in received social support–total (Cohen's *d* = 0.28).

This finding on perceived social support was similar to the findings of Xu et al. (2020) whose results showed that people's perceived social support increased from period during the first wave to the second peak COVID-19 stage (second wave), and effect size was small (Cohen's *d* = 0.36). The findings of our study are in agreement with a study by Turska and Stępień-Lampa (2021), which supports our findings that social support increased during the second wave of COVID-19 pandemic (a trend was found). However, our results are not consistent, for instance, with previous research (Laham et al., 2021), which identified no differences between waves in social support among university undergraduates (Cohen's *d* = 0.01).

The current study determined the significant differences between two waves in terms of all components of perceived social support: (effect size was week, and Cohen's *d* ranged from 0.23 to 0.27), however the significant differences were revealed between two waves only in terms of two components of received social support: undergraduates reported greater informational support

(effect size was week, Cohen's *d* = 0.19) and greater tangible support (effect size was also week, Cohen's *d* = 0.20).

In conclusion, our findings could be explained by the fact that the supportive environment could play an important role, and undergraduates „could strengthen their emotional connection with others through network-based ways, which might lower their COVID-19 stress" (Xu et al., 2020: 9), as well as „mental health organizations and practitioners should consider developing online social support programs to cater to the public's need for more social connections" (Xu et al., 2020: 9). The protective role of social support in the mental health (for instance, in terms of perceived stress) among undergraduates has been proved in many studies (for example, Li et al., 2020). The results in the present study also highlight the important role of social support in facilitating university undergraduates' positive adjustment to the COVID-19 pandemic.

The significance of research. This study makes a novel contribution to the literature, because the present longitudinal study has compared perceived academic stress and social support among university undergraduate students in a new context. i.e. during two waves COVID-19 pandemic. The current research assessed multiple dimensions of perceived academic stress (pressures to perform, perceptions of workload, self-perception, and time restrains), three types of perceived social support (family support, friend support, and significant other support) and four dimensions of received stress (emotional support, esteem support, informational support, and tangible support) in order to provide a comprehensive assessment of these phenomena.

Strengths, limitations and future prospects.

This study has several strengths, including its longitudinal design. We gathered data on two different waves of pandemics, which provides a good opportunity to understand changes of perceived academic stress and social support among university undergraduates. By the way, data were collected in real time, thus reducing recall bias.

Our results were limited to undergraduate students. This analysis did not cover master students of other age, and as a result, the conclusions cover only peculiarities of this particular age of group students. It would be appropriate to conduct similar study by examining undergraduate and graduate students. The web-based (online) setting of the study resulted in a reduced number of participants between the first and second waves of data collection. Furthermore, the data were collected in a self-report manner, what might generate information bias. Future research can cover replication with the same sample after the peak of COVID-19 pandemic.

5. Conclusion

Statistical analysis showed that perceived academic stress changed in the time between the first and second wave, and perceived academic stress levels among university undergraduates during the second wave of COVID-19 pandemic were significantly lower than during the first wave. The level of social support among university undergraduates improved significantly during the second wave of COVID-19 pandemic compared to the level during the first wave. It was found that all perceived social support indicators levels were higher during the second wave of pandemic than during the first wave. The study results also revealed significant differences between key received social support indicators among university undergraduates during the first and second wave of the pandemic. Specifically, university undergraduates reported greater informational support, tangible support, and received social support–total during the second wave of the pandemic than during the first wave.

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Organization of Educational and Project Activities of Students to Create Chat Bots as a Condition to Train Future Teachers

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Abstract

The future teachers training involves the formation of competencies for the development of software for various purposes, design of automated systems for managing real objects. The development of relevant qualities in higher education is complicated by a number of problems of a different nature. The authors propose to organize the project activities of students to create interactive programs (training bots) to improve the training of future specialists.

Methodology. Project-based learning is used to form competencies in the field of informatization of education, to obtain in-demand soft skills, and to unite the team. The construction of a chat bot takes place in teamwork. The experiment involved 43 students of the North Caucasian Federal University in area of training 44.03.05 Pedagogical education with two training profiles. The assessment of the quality of educational results was carried out using the author's testing of 10 tasks ("passed"/"not passed"). Fisher's test was used to establish statistically significant differences.

Research results. Students study services for creating chat bots, analyze the didactic potential and functionality of the programs received, and apply them to solve problems. The features of the presented variant of the organization of educational activities on the creation of chat bots are described: teamwork, the use of templates and scripts, the choice of project topics.

In conclusion, problematic questions are formulated, the answers to which make it possible to determine the directions of work on the design of chat bots: discussion of the development goal and didactic goal, the use of blocks and actions, modeling interaction scenarios, etc.

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Keywords: project-based learning, dialogue program, scripting template, professionally oriented communication, design, BorisBot.

1. Introduction

The UNESCO Recommendations on the ethical aspects of artificial intelligence are a set of principles for the development and application of appropriate systems aimed at maximizing the benefits they provide to society and reducing the risks associated with such technologies (Proekt Rekomendacii..., 2021). These principles largely coincide with the provisions of the National Strategy for the Development of Artificial Intelligence for the Period until 2030, adopted in Russia in 2019 (Ukaz Prezidenta..., 2019).

Such systems, according to the indicated international recommendations, include chat bots. S. Sands et al. based on experimental data, they prove that because of automating the process of working with clients, the latter more actively turn to the services of companies through a chat bot or robotic support on the site (Sands et al., 2021). Y. Saadna, A. Boudhir, M. Ben Ahmed conduct an alternative study to analyze the frequency of students using social media messengers for educational purposes (Saadna et al., 2022). According to the conclusions of both scientific groups, representatives of the modern generation prefer precisely these methods of contact for obtaining advice, choosing a service, and organizing professionally oriented communication.

Achieving all these goals requires intercultural communication skills and digital skills from the participants in the interaction. R. Barac et al. state that work on the formation of appropriate skills must begin at preschool age and continue at all stages of education (Barac et al., 2014). Including teaching in the practice of university N. Yemez, K. Dikilitaş conclude that the learning model in the modern multicultural world should involve the formation of a creative personality that will be capable of an independent creative search for solving professional problems, the use of cyber-physical systems at various stages of professional communication (Yemez, Dikilitaş, 2022).

The level of scientific and technological achievements of recent years allows teachers to use not only social networks, video resources, interactive capabilities of Web 2.0 services, learningapps.org, but also new online technologies in teaching (Zlobina et al., 2020). Moreover, it is proposed to develop their own mobile applications, video blogs (Soboleva et al., 2020). A.S. Budnikova, O.S. Babenkova note that chat bots can radically change the nature of human interaction with the digital world: from reading and writing to listening and speaking. the authors point out that chat bots can be considered as "ideal partners" for learning languages, allowing you to learn several languages anywhere, anytime and at your own pace (Budnikova, Babenkova, 2020).

At the same time there are certain methodological difficulties: what kind of chat bot to use when teaching, how to organize effective educational and cognitive interaction in an automated environment, how to keep the interest of students. B. S. Goryachkin and ed. note that the danger of the effect of novelty and the rapid loss of interest in the study of the subject is one of the main didactic problems of the digitalization of education (Goryachkin et al., 2021). In the case of chat bots, for example, a celebrity-voiced conversational agent is used as an aid.

So, there is an objective need for additional study of the development and application of chat bots to enhance information interaction between participants in the didactic process in the modern educational environment. The relevance of the proposed direction of improving the training of future specialists is also due to the fact that the orientation of the processes of transformation of higher education involves the formation of a new management model that takes into account globalization processes, both in foreign economic activity and in the technological aspect of the digitalization of society.

The hypothesis of the study is that the participation of future teachers in the activity of designing chat bots will provide additional conditions for the development of popular digital skills (working with data, ability to work with information and make decisions, programming, digital interaction, use of modern means of communication, etc.).

1.2. Goals and objectives of the study

The purpose of the study was determined from the need to use innovative collaborative learning software tools to improve the quality of teacher training for future professional activities as important soft skills.

Research objectives:
- analyze the experience of using chat bots in the education and training of future teachers;
- to clarify the essence of the concepts of "chat bot for didactic purposes", "project to create a chat bot" in the context of the digitalization of education;
- specify the didactic potential of chat bots for the development of popular digital skills;
- describe the procedures and principles for measuring the formation of students' competencies in the design of chat bots;
- experimentally confirm the effectiveness of the proposed educational and project activities for the formation of the competencies of future teachers, development of demanded soft skills and experience of collaboration.

2. Relevance
2.1. literature review
2.1.1. Analysis of Russian scientific and pedagogical literature
The profile state program for the introduction of digital transformation technologies is the program "Digital Economy of the Russian Federation" (Lapidus et al., 2020). It provides support for the development of the following key end-to-end technologies: big data; neurotechnologies and artificial intelligence; distributed ledger systems; quantum technologies; new production technologies; industrial internet; robotics and sensor components; wireless communication technologies; technologies of virtual and augmented reality, automated messaging.

Artificial intelligence plays a key role in the implementation of the ideas of personalized learning, organization of project and joint activities. With the help of cyber-physical systems and software, learning, its content and pace are adapted to the specific needs of each student. Communication automation software provides the ability to obtain data from a variety of sources, validate it, and then analyze it using tools such as script template and link building.

According to the research of V.A. Kastornova, many educational institutions use artificial intelligence, including chat bots for teaching and organizing the educational process (Kastornova, 2022).

A chat bot is a special program which give answers to questions of the user.

E.V. Shirinkina, B.Sh. Sobirov describe the capabilities of a chat bot that supports the operation of service stations in Russia and Kazakhstan, which sends daily reports on key indicators, informs about critical situations during interaction (missed call, bad rating, unprocessed application, access violation) (Shirinkina, Sobirov, 2021).

Regarding education, as noted by S.S. Grechikhin, the use of chat bots should be understood as the acquisition by graduates of such knowledge and skills that provide them with awareness of the process of their own education and its real results (Grechikhin, 2020).

In the work of N.M. Chapaev, problems associated with the development of artificial intelligence in the educational and upbringing spheres are noted (Chapaev, 2021). The author considers issues related to the place and role of artificial intelligence and its potential. N.M. Chapaev clarifies the pros and cons of the distance learning process, and specifically artificial intelligence technologies (for example, the Internet of things, avatars and chat bots for consulting, testing and designing individual educational routes, machine learning, big data, blockchain and cloud computing and etc.) in the field of digital education (Chapaev, 2021).

According to the conclusions of L. V. Shevchenko, there is another area in which chat bots can have a huge potential, it is education (Shevchenko, 2022).

A.S. Budnikova, O.S. Babenkova describe the advantages of using chat bots for the formation of foreign language competence in future teachers in detail (Budnikova, Babenkova, 2020). The paper considers the experience of foreign and domestic researchers dealing with the use of chat bots as language partners. The authors provide a list of modern programs of this type, reveal their features.

Education in the modern digital environment, supported by online services and interactive resources, as defined by O. Kalugina, N. Tarasevich, is focused on revealing the identity of the student, maintaining interest in educational and professionally oriented communication activities, developing intellectual, creative abilities in the process of solving any problems (Kalugina, Tarasevich).

I.A. Shcheglova identifies the following characteristics of "soft skills" (including those relevant for the future teachers training): multifunctionality; oversubjectivity and

interdisciplinarity; intellectual development (abstract thinking, reflection, determination of one's own position, self-esteem, critical thinking, etc.); multidimensionality, i.e., they include various mental processes and intellectual skills (Shcheglova, 2019).

V.A. Chernov et al. understand a project as a purposeful activity of a temporary nature, designed to create a unique product or service (Chernov, 2020). O.V. Dubinina, L.D. Hrytsiak highlight the skills that, in their opinion, are the most important for future teachers in terms of participation and creation of their own resources (accounts in social networks, groups, blogs, video services), as well as management of educational projects (Dubinina, Hrytsiak, 2018):

- understanding of the real needs of society and the student himself/herself;
- the ability to plan, decompose and cascade large goals into understandable didactic tasks;
- management of objects (real and virtual) during interaction in the information educational environment.

E.A. Neretina, A.B. Makarets note that with the help of special software, you can easily manage all tasks – both project and personal; control the activities of the team and achieve more with less time and resources (Neretina, Makarets, 2013).

Project-based learning, as defined by E.V. Soboleva et al., is focused on revealing the personality of the student, maintaining interest in learning activities, developing intellectual, creative abilities in the process of solving a problem (Soboleva et al., 2020).

This circumstance is especially important for training and practice of solving future professional problems, reaching the level of professional competence.

So, the use of chat bots in teaching at the university allows to increase the level of digital skills, skills in information technology and artificial intelligence, maintain students' interest in the process of mastering fundamental theory, and contributes to the development of logical and associative thinking (Usoltseva, Usoltsev, 2020).

Analysis of the domestic scientific papers listed above makes it possible to identify a problem associated with the need for additional study of the development of students in the area of training of Pedagogical Education in demanded digital competencies.

2.1.2. Analysis of foreign studies

Under artificial intelligence A. Følstad et al. offer to understand information systems with the following characteristics (Følstad et al., 2021):

- support the ability to process data by methods that are as close as possible to intelligent behavior in terms of algorithms;
- contain aspects such as reasoning, learning, recognition, forecasting, planning and control.

In general, the interaction between a person and a chat bot should be aimed at the implementation of the goals that the UN has identified as priorities for sustainable development (Hong et al., 2021): development of linguistic diversity, support for a healthy lifestyle, quality education, gender equality, access to modern sources energy, rational models of consumption and production, etc.

Also in the work of P. Anki, A. Bustamam, R.A. Buyung, the functions of artificial intelligence technology in education at the present time are highlighted (Anki et al., 2021). They indicate that chat bots combine two important components: they are multitasking, as they allow to automate a number of processes (consulting, conducting control activities and exams, checking test results, conducting surveys of students to identify weaknesses in educational programs), and are convenient for interaction with the user due to a comfortable communication format that imitates a conversation with an interlocutor (Mateos-Sanchez et al., 2022). These qualities of chat bot applications make them an indispensable tool for conducting educational programs and bring the quality of education to a new level.

E. M. Mateos-Sanchez and ed. determine that in the formation of a single digital educational space, an important factor is the automation of information exchange processes (Mateos-Sanchez et al., 2022).

Due to cross-platform, chat bot applications are available on various operating systems, and, sometimes, do not require installation on a computer at all, since most of the functions can be performed on remote servers (Jackson, Latham, 2022).

In addition, chat bots help involve students in professionally oriented communication, interest students in mastering the material through constant communication with the user. With this option of

organizing educational and cognitive activities in the classroom at the university, a chat bot is an important means of obtaining feedback and, as a result, helps improve the quality of training.

C. Tan, I. Huet substantiate that there is an objective need to train highly qualified specialists who are able to control and manage the processes of data exchange between users in a virtual interaction environment (Tan, Huet, 2021). Therefore, automation of processing and recognition of messages is a logical and necessary step in the further digitalization of the work of an educational institution. The work of Y. Saadna, A. Boudhir, M. Ben Ahmed describes a variant of organizing students' project activities to develop an intelligent chat bot to automate the exchange of information in the service sector (Saadna et al., 2022). S. Wollny and ed. present a detailed analysis of online resources to automate the exchange of information between participants in network interaction, creation of dialogue programs (Wollny et al., 2021).

Chat bots, according to E. Vázquez-Cano, S. Mengual-Andrés, E. López-Meneses, are one of the promising areas for the development of information technology (Vázquez-Cano et al., 2021). These interactive programs are capable of processing natural language and offering answers to users' questions. The latter, however, do not always come in the form of text. Sometimes they are specific actions: showing a photo / video at the request of the user, making a purchase, making an appointment, etc.

S. Wollny and ed. explore the development of technology for developing chat bots (Wollny et al., 2021). They conclude that many international companies (such as Facebook) are launching APIs that allow brands to adapt and use bots in their messengers to communicate with customers. D. Jackson and A. Latham study issues related to clarifying the place and role of artificial intelligence, its didactic potential (Jackson, Latham, 2022).

E. Vázquez-Cano, S. Mengual-Andrés, E. López-Meneses note the advantages and disadvantages of using various types of artificial intelligence in e-learning (for example, Internet of things, avatars, chat bots, etc.) (Vázquez-Cano et al., 2021).

At the same time, both Russian and foreign researchers note that the use of chat bots as an assistant in the study of disciplines is often an element of game-based learning. At the same time, its didactic potential is significantly reduced and lost.

Thus, during the analysis of foreign scientific research, the need for research aimed at substantiating the organization of educational and project activities of future teachers when creating chat bots as an important condition for improving the quality of their training was also revealed.

3. Materials and methods
3.1. Theoretical and empirical methods

In the process of using automated interactive programs for studying an academic discipline, all participants in the didactic process are involved in various types of activities (cognitive, regulatory, innovative, collective, etc.). In the present study, interaction with a chat bot makes it possible to provide the most effective conditions for the formation of professional, general professional competencies of future teachers, development of demanded soft skills and gaining collaboration experience. At the same time the inclusion of chat bots in training is simultaneously considered as a technology for acquiring new knowledge and competencies, as a technology for professional communication.

In the ongoing study, at different stages of the organization of educational and practical activities on the use of the chat bot, the didactic resources of Robochat, BotVK, Eliza, Parry, A.L.I.C.E., Jabberwacky, SmarterChild, Watson, Siri, Alexa and Cortana, Alice were considered. Criteria to compare educational chat bots are: tariffs (paid/free), availability of help/support for self-learning, functionality for constructing a dialogue in various languages, didactic potential.

To design and develop their own dialogue program, the Borisbot service, a constructor of educational chat bots, was used. Its advantages: the ability to create 30 block options ("Clear text", "Buttons" (with one choice/with multiple answers), "Timeout", "Rating", "Predictive Question", "Carousel", etc.). In addition, the designer's YouTube channel has an official video with a detailed overview of the service's functionality. The bot allows to select tasks of different levels of complexity on various topics and in various formats.

But, of course, the most important criterion when choosing this particular constructor is the range of didactic functions: the possibility of independently obtaining new knowledge, application in extracurricular activities, support for gamification, and personalization of learning.

An experimental study was conducted on the basis of the North Caucasian Federal University while studying the course "Information and Communication Technologies in Education". 43 first-year students in the area of training of 44.03.05 Pedagogical education with two profiles (training level – bachelor's degree) were involved in the educational work on the design of chat bots. The average age of the respondents was 18 years (51 % girls and 49 % boys).

According to the results of solving specially designed tasks (tasks and principles of their design are described in clause 4.3.1), all students were divided into control (22 students) and experimental (21 students) groups.

Empirical methods (observation, analysis of the results of teamwork in the chat bot constructor) were used to obtain up-to-date information about real qualitative changes in planning skills; in assessing the degree of trust in each other; in the management of emotions in case of errors; ability to constructive dialogue, information interaction in the team and with the designer; mutual support; reflection in the team and individually, in the use of feedback mechanisms; protection of project results (chat-bot).

To diagnose the formation of competencies in the field of informatization of education, 10 tasks were formulated. For the control work, the student could get from 0 to 100 points. According to the results of measurements, the marks were determined as follows: from 0 (inclusive) to 55 points – "failed" and "passed" in all other cases. To assess the effectiveness of specially organized activities for the design of chat bots in terms of improving the quality of education, the Fisher criterion was applied.

3.2. The base of research

The main goal of the experiment was to test the effectiveness of the use of chat bots in the classroom at the university to improve the quality of future teachers training.

43 first-year students were involved in the area of training of 44.03.05 Pedagogical education with two profiles (training level – bachelor's degree). The average age of the respondents was 18 years (51 % girls and 49 % boys).

The BorisBot service (https://borisbot.com) is used as a software tool to support automated data exchange, communication and project work. The tools of this service allow to support a special organization of the learning process in the digital environment of the university. Its essence is expressed in a combination of creative pedagogical influence and a set of optimal pedagogical conditions, which should be based on the integration and interpenetration of modern achievements in pedagogy and psychology.

With the help of the results of the entrance test, it was possible to collect the required initial data on students. The sample was not random. To fulfill the rules of probabilistic selection, the same teacher supervised the practical activities of all students of pedagogical training. He also formulated systems of educational tasks, directed information interaction in the process of solving tasks of automated messaging by means of BorisBot by students. Work with BorisBot resources (with ready-made templates, questionnaires, menus and buttons, tests, sending files, setting a timer, tracking comments, adding files, team introspection and protecting projects) was performed in the same classrooms, on the same equipment and software. The materials for the test were developed by the authors in accordance with the current standard of higher education in the area of training.

3.3. Stages of research

The study was carried out in three stages.

At the preparatory stage of the experiment, various digital services (Robochat, BotVK, Eliza, etc.) and programming environments (Python, PHP, C#; Java; C++; JavaScript, etc.) for creating chat bots were considered and analyzed. The projects and innovative experience of Telegram, Facebook, WhatsApp, VK were also studied.

The didactic potential of chat bots for interaction in messengers and social networks (Telegram, Viber, Facebook, Vkontakte, WhatsApp and others), on websites, in mobile applications, control systems (Siri), voice assistants (Alisa) was studied.

Further, the didactic capabilities of the BorisBot tools for systematic professionally oriented teaching of students, the formation of digital skills and the establishment of quick contact with students and the transmission of information in a compressed form were specified.

For the control work, the student could get from 0 to 100 points. According to the results of measurements, the marks were determined as follows: from 0 (inclusive) to 55 points – "failed" and "passed" in all other cases.

Thus, it was possible to collect data on 43 first-year students of the North Caucasus Federal University in the area of training of 44.03.05 Pedagogical education with two profiles (training level – bachelor's degree). The average age of the respondents was 18 years (51 % girls and 49 % boys).

The second stage of the study was devoted to determine the course structure in accordance with the purpose of the study. The teacher of the course "Information and communication technologies in education" organized the activities in the experimental group in the following stages: "Studying the theoretical material"; "Breaking the study group into teams, choosing the topic of the project to create a chat bot"; "Students' activities in designing a chat bot"; "Protection of projects and operability of dialogue programs by commands".

The third stage of the study covers experiential teaching and the use of BorisBot tools in learning to develop students in the area of training Pedagogical education of demanded digital competencies.

4. Results
4.1. Clarification of the essence of the basic concepts

During the analysis and generalization of the scientific literature, the author's positions were determined regarding the key concepts of the study: chat-bot, "educational project" and "project activity".

A chat bot is a program which simulates a real conversation with a person.

The concepts of "educational project" and "project activity" are studied in science from various positions (philosophical, psychological, pedagogical). At the same time for university training, various activities of students are described as part of the development of the educational program (workshops, theater reports, design shows, etc.).

Under the educational project we mean the activities of students organized and directed by the teacher:

- subordinate to the solution of a certain practically/theoretically significant problem;
- designed in the form of a final product that can be seen, applied in real future professional activities;
- satisfying the requirements: availability of an order for the result, clarity of didactic tasks, criteria for achieving the result and deadlines, originality and independence of the solution, involvement in professionally oriented communication, taking into account the limited resources (financial, time, etc.).

The draft professional standard of the Ministry of Labor of Russia for teachers determines that the teacher must participate and create his/her own resources (accounts on social networks, groups, blogs, video services, and also work on other educational digital materials). To implement these requirements for the training of future specialists in the Federal State Educational Standard of Higher Education in the area of training of Pedagogical Education, a new competence (OPK-9) has been added. It is expected that the teacher in his/her professional activity will be:

- able to create information products for their subsequent inclusion in a single digital educational space;
- ready to use modern information technologies in solving various problems: in the development of software for didactic purposes, in managing projects and real objects (training bots); for experimenting with computer models; to search for information, its collection, storage, processing and transmission; accompanied by intellectual leisure of students.

So, the modern digital educational environment should: be focused on new realities of didactics; provide opportunities for adaptation to specific conditions; support the interconnected communicative and social and cultural development of students; encourage the participant of the didactic process to be creative; use information technologies (multimedia, electronic resources, software) at all stages of education.

Thus, we note that any educational project includes not only the image of the desired result (in the presented study, the model of the dialogue program), but also the organized activity for its design/modeling (from the inception of an idea to its implementation).

4.2. Educational and project activities of students to create chat bots

The review of digital services and programming environments made it possible to determine the range of common functions that chat bots can perform: statistics on working with users, dialogue constructor, templates for responses and scripts, etc. Such functions can be provided through the use of online constructors for simulating interactive dialogue programs. The main advantage of which is that they:

- do not require special programming skills. The creation of the bot takes place in the constructor window – the user himself/herself selects the desired steps of the bot and connects them like Lego;

- contain ready-made templates: questionnaires, menu with buttons, test with scores, design customization, subscription to mailing lists;

- determine the automatic reaction of the bot to keywords, requests and certain events: subscription and unsubscription from the community, the first message, sending files, timer;

- support the ability to send media: photos, videos, music, documents;

- load dynamic data from the user profile: name, city, social network ID, gender;

- perform automatic collection of interaction statistics, segmentation of the audience through tags.

Based on the results of the analysis of the supported didactic functions and the range of tasks performed, the BorisBot service (https://borisbot.com) was chosen.

The second stage of the experiment was devoted to determine the structure of the course in accordance with the purpose of the study. The teacher of the course "Information and Communication Technologies in Education" organized the activities in the experimental group in the following stages:

I stage. The study of theoretical material (trends in the development of artificial intelligence technology, chat bots based on artificial intelligence, educational bot as a variant of informatization of education (examples, didactic properties and functions), principles for developing interactive programs, ethical standards of application, etc.).

II stage. Dividing the study group into teams, choosing the topic of the project to create a chat bot.

A feature of the proposed option for organizing educational and project activities is that the Wheel of Fortune service (https://ru.piliapp.com/random/wheel/) is used to divide the study group into teams. This is an interactive program that allows you to automate the random selection of a participant.

Another feature is that the students of the experimental group could determine the topic for the project themselves, or use the order of a potential employer, or the teacher's options. For example, students developed an educational project for a healthy lifestyle chat bot. The program interactively motivated the participants to bake cakes and sent the recipe; asked to conduct a morning workout and record it on video; reminded of the need to organize a meeting on ZOOM and write about the results; recommended to watch movies or books.

There was an order from a potential employer to make a chat bot for remote interaction of company employees. The main areas of activity that were automated by the chat bot were: personnel management, sales of goods and related accessories, technical support, consultation, etc. For the initial testing of the chat bot, it was necessary to create a scenario for automating the interview for the vacancy "HR specialist". First, the applicant was asked to fill out a questionnaire (name, city, contacts), choose a vacancy. Then the chat bot offered to pass two tests: an assessment of qualifications and personal characteristics. In the first case, the bot asked ten questions about professional competencies (depending on the vacancy). Time for answers is limited – ten minutes. The second case: the bot helps find out the characteristics of the character, inclinations and interests of the individual based on a combination of personal factors.

Project variant from the teacher: implement a chat bot to support the study of the string data type. The logic of the program:

1) asks for a username;

2) suggests studying the string data type. If the user answers "yes", then the chat bot displays information about the string data type, otherwise it displays a completion message. According to the information studied, the program offers to answer one question and, in accordance with the answer, displays information about its correctness;

3) offers to continue studying and learning about the syntax of the string data type. If the user answers "yes", then the program displays information about the syntax of the string data type, otherwise it displays a completion message.

4) offers to study what operations can be performed on the string data type, etc.

III stage. Student activities for designing a chat bot:

- designing dialogs and their modeling in a graphical user interface;
- customization of the initial design or selection of an existing template;
- use of blocks "Timeout" (time delay for a response), "Channel selection" (transferring a dialogue to a messenger or mail), "Buttons", "Rating", "Geolocation", "Carousel", "Notification", "Repost links" etc.;
- setting up transitions to the block when choosing another answer option, ability to ask again;
- performing actions (create a survey, go to the site, etc.);
- testing, debugging and refinement of dialogue scenarios.

The development of the chat bot was accompanied by the following types of tasks: analysis of the professional field of activity of the future teacher, setting the task (objects and subjects of control, problems of data exchange, areas of interaction, evaluation criteria/efficiency of the programmable system); selection of blocks for the technical implementation of the chat bot; experimental verification of the computer model performance; testing and updating the information model; using the constructor to solve real problems.

IV stage. Protection of projects and operability of dialog programs by commands.

4.3. Experimental evaluation
4.3.1. The ascertaining stage of the experiment

At the first stage of the experiment, materials specially developed for the test-paper were used to evaluate the input. There are examples of tasks below.

1. The home designer is testing a system to secure entry into the house. Every second the program sends a signal (0 or 1) to the control panel. This signal is an alert about whether there is someone else in the house or not. While the program sends "0", no action is necessary. As soon as a unit appears, the program should signal and report that "Reinforcements are leaving!". Help a specialist develop an appropriate technical system.

2. The curator of collective creativity needs to divide the group (N people) into two parts. But he/she wants to do it in an unusual way. The participant of the experiment must go to the terminal and enter his/her name. The program must determine the appropriate subgroup according to the following rule: if the person's name begins with the letters "A-K", then the student is sent to the first subgroup, otherwise – to the second. Help a specialist develop an appropriate technical system.

3. There are two lists: a list of communication situations (with an employer, manager, colleague, parents, friends, network interlocutors, etc.) and phrases from the appeal ("Would it make it difficult for you to tell me ..." , "I'm sorry to bother you, you won't tell me...", "Listen, you know where...", "Dear host, let me...", "Ladies and gentlemen, a moment of attention...", "Dear ladies and gentlemen!", "Welcome aboard!" etc.). The student needs to correlate the situation and phrases of communication.

4. To implement by means of information technology (for example, MS Excel) the project "Choice of the future profession". The program must perform an analysis of professions according to the proposed parameters and determine the most optimal option for the user. Task modification: write down the parameters of the criteria by which you want to compare, in a separate text file.

Approximate criteria columns: demand (in percent), wages (in roubles), tuition fees (in roubles), training costs (in roubles), number of working days. Approximate lines-professions: teacher, process engineer, IT specialist, economist, builder.

For example, an interactive program should select a profession suitable for the user according to the following parameters: salary of at least 100 thousand roubles, training budget should not exceed 150 thousand roubles.

For the test-paper the student could get from 0 to 100 points. According to the results of measurements, the marks were determined as follows: from 0 (inclusive) to 55 points – "failed" and "passed" in all other cases.

4.3.2. Forming stage of the experiment

This stage of the experiment was devoted to determine the directions for including BorisBot tools in online information interaction, project activities of students.

The initiator of the project activity carried out preliminary methodological work with all participants in the didactic process to master the functionality of the designer.

To organize joint work on a chat bot, the following activity algorithms were considered: how to recognize and interpret requests, how to make money transfers, how to book a table in a cafe, how to make an appointment in beauty salons, how to buy a movie ticket, tell the rules of the Russian language (for example, "zhi-shi" – write with the letter "i").

Examples of other tasks using chat bots.

Task 1. Read the text and make a family tree of the Coppola family. What other famous families do you know? Tell the bot about one of them.

Task 2. Make a memo "Rules for safe online communication."

The students of the control group during the project activities were not purposefully involved in the creation of chat bots for educational purposes. With the help of ready-made bots (for example, StepicBot), they completed spell check tasks, search for the meaning of a word, studied concepts from mathematics and programming, and a foreign language.

There is an example of a task in the @ucheba_bot environment. With the help of a ready-made bot, organize a dialogue that will help you choose a university, college or courses in accordance with your requirements. In addition, the program should send you a selection of educational institutions of the requested subject on a daily basis. The bot should inquire about the search object (university, college or courses), then specify the form of study (full-time or online) and ask what you want to study. If there are no current courses for the requested topic, the bot will offer a new search or subscription. By subscribing, the chat bot will notify you when a course is available.

At the control stage of the experiment, a verification work was also carried out on the course materials.

4.3. 3. Control stage of the experiment

Test-paper was also carried out at the fixing stage of the experiment.

The validity of the experimental results was verified using the Fisher criterion. The control measurement data before and after the experiment are presented in Table 1.

Information about the levels of formed skills in project management before and after the experiment is presented in Table 1.

Table 1. Results of the control event

	Before the experiment		After the experiment	
	Control group	Experimental group	Control group	Experimental group
Proportion of students with the mark «not credited»	50 % (11)	52,4 % (11)	45,5 % (10)	14,3 % (3)
Proportion of students with the mark «credited»	50 % (11)	47,6 % (10)	54,5 % (12)	85,7 % (18)

Calculations were made using an online calculator (https://www.psychol-ok.ru/statistics/fisher/). The critical value of the Fisher criterion for a significance level of 0.05 (φ_{crit}) is 1.64.

The following hypotheses were accepted:

Н0 – the level of educational results in the experimental group is statistically equal to the level of the control group;

H1 – the level of learning outcomes of students in the experimental group is higher than the level of the control group.

The empirical value of the Fisher criterion before the start of the experiment is 0.157 (φ_{emp} = 0.157 < φ_{crit} = 1.64). Therefore, before the start of the experiment, the hypothesis H0 is accepted. The value of the Fisher criterion after the experiment is 2.311 (φ_{crit} = 1.64 < φ_{emp} = 2.311), so the hypothesis H0 is rejected and H1 is accepted.

In other words, the participation of future teachers in the activity of designing chat bots made it possible to provide additional conditions for the development of popular digital skills (working with data, ability to work with information and make decisions, programming, digital interaction, use of modern means of communication, etc.). Corresponding changes in the pedagogical system are not accidental, but regular.

5. Limitations

The sample of students was not probabilistic, since the experimental and control groups were formed in such a way as to guarantee the presence in each group of the same skills and personality traits that form the basis of the competencies of future teachers, their identical distribution.

For diagnostics, the results of the input control measure were taken into account. The selection of participants for the experiment and the sample size are justified by the specifics of the investigation: the study of theoretical material on artificial intelligence technologies, design features of chat bots based on artificial intelligence, use of educational bots as an option for informatization of education, dividing the study group into teams, choosing the topic of the project to create a chat bot.

The problem is that the use of chat bots for educational purposes is included in the training program for a limited number of specialties. Throughout the experiment, practical activities to solve the described problems, supported by digital technologies, were carried out by the same teacher, using the same software equipment in special classrooms. During the implementation, the main principles and stages of the development of an educational project, the functionality of the service for modeling a dialogue in the constructor environment were taken into account.

6. Discussion

Performing a quantitative analysis of the data in Table 1, we can conclude that educational results in the experimental group after studying the course "Information and Communication Technologies in Education" in accordance with the proposed structure of the organization of educational and project activities of students to create chat bots increased. The share of students with the mark "passed" increased by 38.1 %. In the control group the increase was only 6.9 %. When discussing the didactic potential of chat bots, it was found that the formation of competencies in the field of informatization of education occurs due to the fact that:

- in the process of developing a training bot secretive, uncommunicative and shy team members become more free in interaction;
- the process of decision-making and choice is supported ("predictable question", "timeout", time delay for an answer);
- the distribution of resources is optimized within the existing restrictions (for example, for asynchronous communication – the possibility of interaction by e-mail; entering text or choosing from available answers);
- there is an acceptance of the need to comply with "virtual" rules, follow patterns and scenarios;
- the fear of making a mistake in the answer is minimized (for example, by choosing the most convenient channel for communication);
- a joint effort to model a dialogue with a chat bot contributes to the formation of professionally oriented communication skills.

In general, the pedagogical experiment allows us to conclude that the simulated educational and cognitive activity contributes to the formation of such sought-after competencies in future teachers as computer and technical literacy, teamwork, communication with people and an automated program, and the willingness to manage several tasks/projects. Activities for the development of chat bots for educational purposes provide additional opportunities for training

specialists for joint creativity, ability to interact and resolve conflicts in a team, ability to empathize and motivate, and adapt to the challenges of society.

The materials of the work confirm the conclusions of E. V. Soboleva et al. (Soboleva et al., 2020) about the didactic possibilities of modern interactive resources in terms of the formation of in-demand skills of future professionals. The data obtained by the authors during the study generalize and develop the conclusions of A.S. Budnikova, O.S. Babenkova (Budnikova, Babenkova, 2020) and E. Vázquez-Cano, S. Mengual-Andrés, E. López-Meneses (Vázquez-Cano et al., 2021) about the didactic possibilities chat bots for learning in the information educational environment. In addition, a variant of solving those problems of using chat bots in education, which are formulated by S. Wollny et al. (Wollny et al., 2021).

7. Conclusion

At present artificial intelligence technology is actively used to improve the performance of employees, manage innovation, motivate personal development; support operational interaction with customers; in the field of education. Artificial intelligence provides tools to support decision making, choice, and operational feedback.

A chat bot is one example of the implementation of artificial intelligence technology in the field of communication, information collection and analysis, and decision making. At the same time experiments are conducted in world didactics that prove that chat bots contribute to the intensification of research activities, increase cognitive activity and support professional self-determination.

The inclusion of project activities to create chat bots in the didactic process stimulates the development of students' trans-professional competencies that are mostly in demand by the market and therefore attractive to employers.

Designing a chat bot as a dialogue scenario contributes to the development of professionally oriented communication skills (listen to the alternative opinions of other team members, accept the standards and values of others, follow the rules and regulations).

When creating educational chat bots, reference points were formulated – directions for project work.

1. Consider the well-known educational chat bots:
- What is the purpose of creating such a bot?
- Do the tasks solved by the bot and didactic tasks coincide?
- Are there ready-made templates and dialogue scripts or is there necessity to develop your own projects right away?
- Are programming skills required to write scripts?

2. Consider the impact of the chat bot topic chosen for implementation on the training of a specialist to perform labor functions: monitoring the readiness of teachers to use digital technologies, choosing a teaching method, organizing students' intellectual leisure, etc.

3. Before creating a chat bot, do the preparatory work: compose a text for messages, a list of questions and possible answers, select illustrations and videos.

4. An obligatory stage of the described educational and project activity is the analysis of the result obtained (chat bot) and the didactic purpose of its creation.

As a direction for improving the proposed variant of the organization of students' activities in the design of educational bots, it was proposed: more active involvement of potential employers in formulating the topics of projects; inclusion of programming elements to develop unique scripts and increase the originality of the product; creating chat bots to help with paperwork and resource planning.

The results of the study allow to state the advantages of project activities for the development of chat bots to motivate students for group forms of classes, for collective creativity and professionally oriented communication.

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Distance Learning Activation in Higher Education

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Abstract

This article discusses the pedagogical features, problems and directions of development distance learning organization. Comparative characteristics of preparation for traditional and distance learning are covered, and strategies for activating distance learning are described. The authors conducted research to improve the quality of distance learning for university lecturers. The aim of the study was to create an optimal environment for improving the quality of education by stimulating the activity of students in the context of distance learning. It is implemented through the active introduction of information, software, technical and methodological environment for distance learning in the relationship between learner and lecturer. Active methods, software, platforms, which played a special role in the study, were identified and recommendations for use in distance learning practice were described. The pedagogical conditions for the activation of distance learning and "mixed learning" are formulated. Although there is research on the problems of distance learning, there is a lack of methodological training of lecturers and learners, and even readiness of the educational organizations. This was revealed during the transition to mass distance learning under the influence of the COVID-19 pandemic. In this regard, the study complements the work on the formation of digital competencies of lecturers and learners of higher education. Research methods are focused on the adaptive use of teaching and learning strategies, teaching materials in distance learning in higher education.

Keywords: distance learning, content, synchronous learning, asynchronous learning, active learning methods, activation, digital competence, pedagogical conditions.

1. Introduction

Digitization has become a tool that accelerates the development of the world economy and improves product quality. In the changing period of human history, digital technology has raised

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all spheres of society to a radically new level. This is evidenced by the adoption of the state program "Digital Kazakhstan". According to the program, in 2022 the share of content of information technology services will increase by 70 %, the share of services in the market will increase by 32.5 % compared to developed countries. The digitization of education cannot be left out of the process of achieving such targets (State program "Digital Kazakhstan", 2017).

Over the last ten to fifteen years, significant changes have taken place in the structure of the education system in Kazakhstan. Learning and educational technology has become an effective tool for understanding the richness of the financial fund, the struggle for market development.

Digital education is formed and improved under the influence of mobile Internet, artificial intelligence, machine learning, large amounts of data, continuous economic development. Since the spring of 2020, due to the spread of the COVID-19 pandemic, the traditional teaching process of higher education in Kazakhstan, as well as in the world, has been transferred to distance learning.

At that time, distance learning, based on modern technological advances, played a leading role.

The Law of the Republic of Kazakhstan on Education clearly states that "distance learning is learning that takes place when teachers and students interact remotely, including through the use of information and communication technologies and telecommunications". In Article 37-2 of this document, this definition is supplemented with the following definitions:

1. "Distance learning is carried out in organizations of secondary, additional, technical and vocational, post-secondary, higher and (or) postgraduate education in the manner determined by the authorized body in the field of education.

2. In case of emergency, restrictive measures, including quarantine, declaration of emergencies in the relevant administrative-territorial units (individual facilities), local executive bodies and educational organizations introduce distance learning for all learners in the manner determined by the authorized body in the field of education (Law of the Republic of Kazakhstan, 2007).

Distance learning is a special learning technology that has many differences and advantages over conventional full-time or distance learning. It offers a different form of interaction between lecturer and learners, different educational content and different forms of teaching.

The possibility of activating the relationship between learner and lecturer of distance learning is studied, and the quality of education can be improved by adapting traditional methods of teaching to distance learning. Although this problem is in the spotlight of scientists around the world, it has not yet been fully resolved. Let's review the literature to clarify.

2. Literature review

The main purpose of the literature review is to support current educational initiatives in higher education. In particular, the identification of teaching and learning strategies for the development of personal flexibility through the organization of active participation of learner in distance learning. It helps to identify research methods and distance learning environments, content and digital activities.

The use of distance learning technology in Kazakhstani educational institutions and the issue of activating its participants are covered in the literature. It is studied in terms of technical, software, information (content), methodological support.

A.A Andreev considers distance learning as a system consisting of subjects ("digitalnatives") and objects (Figure 1) (Andreyev, 1999).
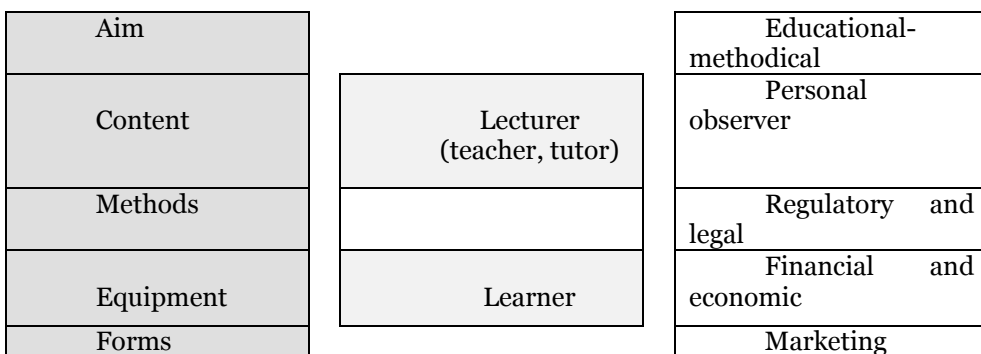
Fig. 1. The structure of the didactic system of distance learning

As shown in Figure 1, the interaction between the subjects of distance learning depends on the purpose of teaching the subject, the content and methods of teaching. In turn, it is carried out in close cooperation with the material and technical base, regulations, financial and marketing support. It is obvious that the implementation of such a didactic system in the territory will cause problems for lecturers and learners or the institution.

Aiming to solve the problems of distance learning, scientists began to consider teaching in higher education in more detail. Distance learning is combined with e-learning, mobile learning. There are no fundamental differences in these studies, they only complement each other (Table 1). Our research is aimed at activating the activities of distance learning participants. Because distance learning is developing rapidly. Distance learning has bridged the gap between "distance instructor" and "distance learner". Bilateral relations with the scheme "from lecturer to learner" and vice versa "from learner to lecturer" developed the educational system of the technological revolution, and the word "distance" ceased to be a literary word and became a metaphor (Bervell et al., 2021).

Referring to the problems of distance learning, the Minister of Education and Science of the Republic of Kazakhstan A. Aimagambetov said: "We must recognize that distance learning is not equal to the traditional format of learning" (Distantsionnoe obuchenie oshchutil na sebe…, 2021). According to the Minister, the level of education of learners during distance learning has decreased. The questions "Can the use of active traditional teaching methods in distance learning not contribute to the decline in the quality of education?", "Should methods be adapted or transferred?", "What should be done to activate distance learning?" needed to be answered.

Table 1. Representation of the research problem in the literature

Direction of analysis	Content and features	Authors
Technical support	Bangladeshi scientists plan to conduct online training at the university using mobile devices. Currently, the world has introduced not only mobile applications for distance learning, but also social networks.	M.S.H. Khan, B.O. Abdou, J. Kettunen, S.A. Gregory (2019)
Software	Italian researchers have found that while traditional teaching focuses on learners' perception and understanding of the lecture by observing them, distance learning has very little control over it. In order to solve this problem, software installed on the learners personal computer and running in the background architecture	G. Bonnin, D. Dessì, G. Fenu, M. Hlosta, M. Marras, H. Sack (2022)
Information environment	Opens in connection with STEM. Comparing the possibilities of using a remote virtual laboratory with laboratory work in traditional learning, it has been proven that learners can control and manage computer objects, data and phenomena in an interactive mode to achieve the learning objectives of laboratory practice in a virtual laboratory. The results of the study showed that distance learning strategies have a viable, meaningful educational approach.	L.O. Flowers, E.N. White, J.E. Raynor, S. Bhattacharya (2012)
	The e-learning publication ensures that the content is relevant and understandable to the curriculum.	V.Yu. Shurygin, L.A. Krasnova (2016)

Methodological support	Digital activity has a special place in distance learning. Because interactive, constructive, active, passive forms of learning are used systematically. For example, it is provided that the learner gets acquainted with the video content presented as educational material before the lesson and analyzes it during the online lesson	A. Lohr, M. Stadler, F. Schultz-Pernice, O. Chernikova, M. Sailer, F. Fischer, M. Sailer (2021)
	Emphasis is placed on teaching the "inverted class" method in connection with gamification.	A.Y. Gündüz, B. Akkoyunlu (2020)
	Arto O. Salonen, Annukka Tapani, Sami Suhonen believe that in pedagogical schools it is better to combine distance online learning and traditional learning and move to "mixed learning".	A.O. Salonen, A. Tapani, S. Suhonen (2021)
	Blog writing, question-answer, the use of psychological and pedagogical bases of formation of the media background in the Internet (three-dimensional tour design), the use of Internet images, emozi, and the impact of standardization of digital educational resources in the educational process between teachers, students and their parents are descried.	E.A. Sorokoumova, E.I. Cherdymova, E.B. Puchkova, L.V. Temnova (2021)

Based on the research, it can be assumed that if the activation of relations between the participants involved in distance learning will improve the quality of education, it is necessary to prepare for technical, software, information (content) and methodological support.

3. Research methods

The research was conducted by analyzing educational publications on the topic, questionnaires and experimental control methods. Adaptation of active methods of traditional learning was considered as an effective means of activating distance learning. These methods were considered effective in proving the research hypothesis and due to the diversity of teachers' digital competencies.

Based on the analysis of theoretical and experimental work, changes in the program, technical, informational, methodological training of lecturers and learners' motivation for distance learning and the quality of education were identified, and the types of educational activities were associated with increasing student activity.

Scientific and methodological research was analyzed in accordance with the topic. Pedagogical works were considered to define the concept of activation of distance learning. However, complementary views prevailed over contradictions.

Surveys and interviews were conducted to identify the gap between traditional and distance learning, to assess the activity of university learners and to determine lecturer training. The study was conducted in accordance with the educational programs of physics and computer science, mathematics and computer science, computer science for 2019–2021. The study was conducted on the basis of the M. Utemisov West Kazakhstan University. It was attended by 59 lecturers who participated in the study, 14 were professors and associate professors, 23 were senior lecturers, and 22 were lecturers and assistants.

Teachers involved in the experiment were divided into two groups according to their digital competence. Experimental group consisted of 2 professors, 3 associate professors, 10 senior

lecturers, 11 lecturers from the Informatics department and Control group consisted of 1 professor, 8 associate professors, 13 senior lecturers, 11 lecturers and assistants from the Physics and Mathematics departments. Lecturers of the Department of Informatics have been believed that they can adapt to distance learning in a short time due to fluency in digital technology. The average age of the experimental group is 35. Lecturers of Physics, Mathematics departments have different digital competence levels and form a control group. They were considered to develop guidelines for preparation for distance learning, and methodological seminars and trainings should be organized. This is because the transition to distance learning requires special training for the control group, and requires a lot of time. Average age in the control group is 50.

In order to organize distance learning, it is first necessary to accumulate information resources. That is, there is a need to create an information educational space. Training materials are provided in the form of scanned electronic versions of traditional textbooks, electronic textbooks, video lectures, audio recordings, online courses, websites. Different educational platforms can be used in combination. According to the information readiness of the lecturer who participated in the study, 39 % of the distance learning materials in the form of text, modified and updated compared to the information provided in traditional teaching, 27.1 % based on Internet resources, supplemented with video material and increased the number of resources by 33.9 %.
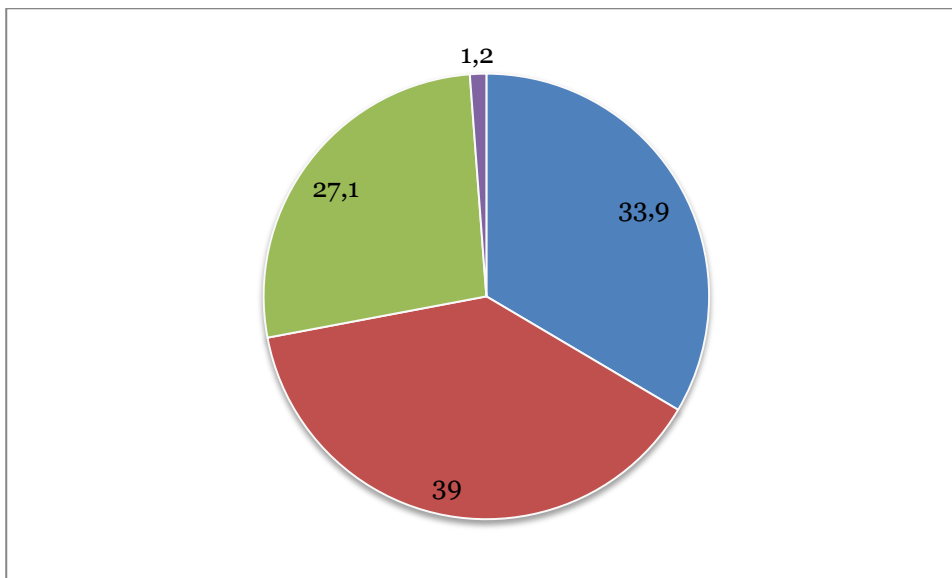
Fig. 2. Content preparation

Technical and software training includes the creation of favorable conditions for lecturers and learners. The administration of the university should pay attention to the normal functioning of the network environment, the stable operation of a common software platform available to students and lecturers. During the mass transfer to distance learning, the university helped to provide lecturer and learners with the necessary information technology and facilitated stable and mobile operation of the software platform and portal.

Psychological training refers to the digital competence of the lecturer and the learner involved in the educational process, the attitude to the combination of physical and mental activity with information and communication technologies (Chorosova et al., 2020). Special methodological seminars and trainings were held to help elderly lecturers to work with programs for content development and online lectures.

Another feature of distance learning in higher education is step-by-step learning. Registration of learners in the course of step-by-step training, determination of the lecturer's workload, semester planning, scheduling, monitoring of tuition fees, exam scheduling and administrative work, etc. The learner's self-study, research, development of joint projects are organized through the integration of synchronous and asynchronous modes (Distance education, 2021).

Synchronous communication is a type of educational activity in which real-time lessons are conducted via the Internet.

Asynchronous communication is a type of educational activity performed offline, when the Internet is disconnected.

Integrated or combined learning is a technology for organizing the learning process, which includes the combined use of traditional learning and e-learning, mobile learning, distance learning formats (Weindorf-Sysoeva et al., 2017).

At present, the university has a combined curriculum. According to Russian researchers, in the future 40 % of teaching will be devoted to distance learning. 20 % of all hours are independent work, 40 % are in the form of traditional training (Pavlutskaya, Dubitskaya, 2016). This requires the development of distance learning competencies of the lecturer.

Methodical training began with the lecturer's use of traditional teaching methods for distance learning, the search for ways of active learning. Preparation for quality distance education for learners begins with the lecturer's distance learning. Lecturers (in 2019 – 50 %, in 2020 – 90 %) during the transition to mass distance learning Coursera, Lektorum, Intuit, Stepik, Microsoft, OpenU, etc. Lecturers took a subject online course on popular platforms and strengthened his professional competence. According to the survey, during traditional training 71.4 % of lecturers often use the active method, 5.1 % do not use it, and the rest rarely use it.

Table 2. Readiness of teachers for distance learning, 2020, February

Question	Traditional teaching	Distance learning	Combined learning
What is your opinion on learning technologies?	Results-oriented learning, direct communication	Communication is carried out remotely, the quality of education decreases, it is difficult to learn in Moodle	Practical lessons can be conducted in the classroom, the problem of network communication often arises
What teaching methods have you used?	Board work, group work, colloquium	Project, web conference	Online lectures, file sharing, essays
In your opinion, how do teacher competencies develop?	Participation in advanced training courses and seminars at the university	Take a distance learning course	Internet resources, use of Youtube materials

As shown in Table 2, despite the fact that teachers conducted distance learning for half a year, there is a low level of training (technical, software, methodological, psychological). If lecturers' knowledge of distance learning was compared with Bloom's taxonomy, it corresponded to the level of knowledge and understanding.

The readiness of learners and undergraduates for distance learning was tested by interview. As a result, 25 % of them say that it is possible to study part-time, which saves time, 45 % say that it is inefficient, traditional teaching is desirable, and the remaining 30 % prefer mixed education.

Methodical webinars in the Republic of Kazakhstan were organized at the ENIC-KAZAKHSTAN Bologna Process and Academic Mobility Center (ENIC-KAZAKHSTAN, n.d.), in each educational institution, online courses "Online technologies in teaching" (Medeshova et al., 2021b), "Methods of teaching computer science" (Medeshova et al., 2021a), "Learn distance learning" were developed, Distance learning courses: "Development and improvement of IT competencies of lecturers", "Learning distance learning", "Online technologies in teaching", "Modern technologies of education and training", "Digital tools for distance learning". The impact of such measures on the learning process is clear from the results of the following survey (Table 3).

Table 3. Preparation of lecturers for distance learning, September 2021

Question	Traditional teaching	Distance learning	Combined learning
How would you describe the features of teaching technology?	Human communication, psychological atmosphere enhances activity	Allows to study online, offline, spends time on scientific and practical research	Classroom and online consultations, online resources, laboratory work improve the quality of education
What teaching methods are the most effective?	Individual and group work, seminars, lectures, active methods, control work, full-time training	Online course, presentation, screencast, group online project, online testing, computer game, dual training, self-study	Webinar, video lecture, group work, laboratory work, testing, exam, part time training
What problems do you think are there in the process of mastering learning technology?	Time constraints, material base	Technical, professional skills	Insufficient level of information competence
How did you improve your digital skills?	With the help of my colleagues	Distance learning course, Youtube channel	Webinar, scientific-methodical seminar

The experience of distance learning and the development of teacher competencies are shown in Table 3. The practice has improved the teaching methods of lecturers.

Ways to effectively combine distance learning with traditional learning:

- determination of the expected result (the expected result is clearly stated in the syllabus)

- identify ways to evaluate the results (learning objectives, criteria for evaluating the results are clearly presented)

- creation of inclusive learning environments (use of optimal distance learning environment for learners)

- identification of teaching methods and equipment (selection of learning environment and resources) (Osobennosti organizatsii..., 2020).

The most important issue is the choice of educational environment. It is planned to use the world-famous platforms Moodle, Sakai, BlackBoard. Moodle platform for asynchronous learning software (https://moodle.wksu.kz/, https://estudy2122.wku.edu.kz/), Google Classroom (https://classroom.google.com/h) , Platonus (http://platon.wksu.kz/), e-mail, cloud technology were used. Cisco WebEx, Zoom, Google Duo, WhatsApp software applications were used for synchronous learning. Edmodo forum, analysis, Emaze, Canva, ProShowProdesk presentation, Cloud school lecture, test environment observations, iSpring web page slides and tests, master tests, online test pad tests.

The possibilities of technical support of learners reaching different social groups (network, computer, telephone) were taken into account.

Information support of distance learning. The availability of electronic library resources has made it convenient to work independently. During the preparation of abstracts, drawings, project works, it was possible to obtain materials from the funds of the Republican Library, and also to learn. Not only lecturer learned the difference between an e-book and an e-textbook, to learn to use them. Get acquainted with the programs for the production of audio and video recordings. Learned how to download and use screencast and podcast programs from a virtual disk.

Methodological support depends directly on the active distance learning. The most commonly used methods are inverted group, online station (Figure 3; Dammer, 2020). Here students got acquainted with the educational material in the syllabus. In asynchronous mode, the lecture was presented in the form of a video lecture, text or presentation, web page. References to Internet sources are provided for additional information. Unclear questions of the lecture were analyzed in synchronous mode. Practical work was carried out in a mixed mode.
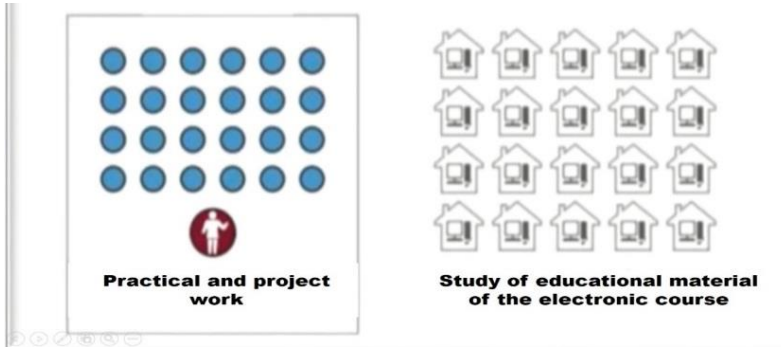
Fig.3. Distance learning methods

The analysis of the lecture used the methods of minilessons (mini-lessons), educational partnership, Highlighted print materials, video recorders, missing paragraphs, random headings, puzzles, angles.

Methods of performing practical tasks have been updated. For example, chamomile flower, PechaKucha (Figure 4), Bloom's cube, Fishbone method (problem, cause, facts and arguments, conclusion), etc. (Zhebrovskaya, 2017).

To draw conclusions on the topic, "mirror / mirror", three questions (what is good? What is bad? What is interesting?), Insert methods are effective.

Active feedback methods can be used in the analysis of the lecture. sent a photo abstract/photo thesis or video comment. Everyone presented their thoughts in full or in the form of a short synopsis of what they know on the topic. Video feedback allowed the teacher to get acquainted with each student individually (speech style, speed of systematization, appearance, etc.) during distance learning.
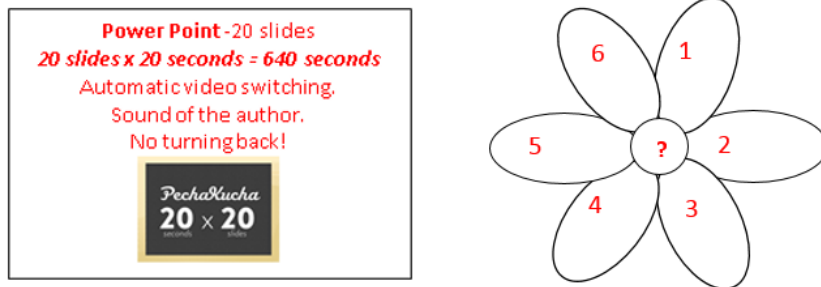
Fig. 4. Tasks
Questions of chamomile (1 – simple, 2 – refinement, 3 – practical, 4 – interpretation, 5 – creativity, 6 – assessment)

The harmonious combination of synchronous and asynchronous learning and active methods and software platform played an important role for both the teacher and the student.

Synchronous teaching requires a great deal of training from the teacher. After all, the development of lectures, video lectures, tests and communication scripts, testing, mass surveys, clusters, etc. Systematization of methods should be prepared for results-oriented learning. However, as a result of its combination with asynchronous learning, a "small jump" or "transition from solitary to general" was made. This showed the professional competence of the teacher.

The professional competence of a teacher is combined with information and communication competence in digital education. A teacher is called a tutor in traditional teaching and a facilitator in distance learning. Facilitator (English facilitator, from Latin facilis "convenient") – a person who provides fruitful group communication, ie, collaboration of students (Facilitator, 2021). A competent teacher is free to play his role, regardless of the technology.

Pedagogical principles and conditions of traditional teaching are also observed in distance learning. This develops the key competencies of the learner (Boronenko et al., 2017; Imashev et al., 2020). The use of active methods in distance learning does not preclude the interpretation or use of traditional learning technologies such as business games, role-playing games, training, teamwork, brainstorming, heuristic storytelling, research, etc. computer design, virtual master class, online discussion, electronic case, online lecture, electronic portfolio.

It is impossible to use in distance learning without knowing the order of discussion, debate, round table, master class. Each active method requires different training (Grigorash, Trubilin, 2014).

One of the most important directions is the active distance learning of gifted learners. Talented learner has a high propensity for independent learning, intellectual, learning activity. Such learners require special attention in distance learning (Abakumova et al., 2019, Dabletova et al., 2017; Dabletova et al., 2018).

The gamification contributed much to activating distance learning. Students formed LearningApps, Educandy, Wordwall, Kahoot platforms to compile thematic games and paid attention to their graphic decoration. That is, they focused on the content and design of the game. While decorating digital, communicative competencies with the use of an interaction the graphic editor has been formed; blog, question-answering were formulated in the processing of video.

The students used a computer graphic flash games, using independent work tasks when performing asynchronous mode. The subject competence of students has also been developed.

In distance learning, learners select and analyze the proposed multimedia work, educational materials presented in the learning environment, depending on their digital competence. This, in turn, contributes to the activation of asynchronous learning (Dabletova et al., 2017; Dabletova et al., 2018).

This study was conducted as part of educational and practical activities, where learners assessed the formation of their own special digital and pedagogical competencies according to Bloom's taxonomy. Thus, the technical, software, information, methodological support of distance learning revealed that the quality of education is lower than that of traditional learning and led to the definition of pedagogical conditions for the activation of distance learning.

3. Results

In the study, learners' mastery of learning materials through active distance learning did not show a lower level than traditional learning. Active methods have increased learners' interest in learning. The lecturer's efforts to transform online lessons and increase learner engagement showed a high level of academic achievement. It also depends on the fact that the lecture material in different forms assigned to asynchronous learning is understandable to the student and the task is given with a link to Internet resources.

We present the results of the study on mathematical statistics.Traditional study of "Computer Graphics" by learners in the 2019–2020 academic year, indicators for distance learning in 2020–2021, combined learning in 2021–2022 were analyzed in Figure 5 by the method of statistical analysis (Figure 5).

Here the experimental and control groups were divided into "internal group" forms. That is, students studying subjects were divided into two groups with their own discretion. Active methods have been used in the first year (traditional training), second year (distance learning), in the last year – combined training classes in the experimental group, and traditional methods have been used in the control group. The syllabus, educational materials (content), software and software were presented equally.

The results of the experiment with numerical characteristics were faster than in the control group. The quality of education has increased by 4-10 % (Figure 5).
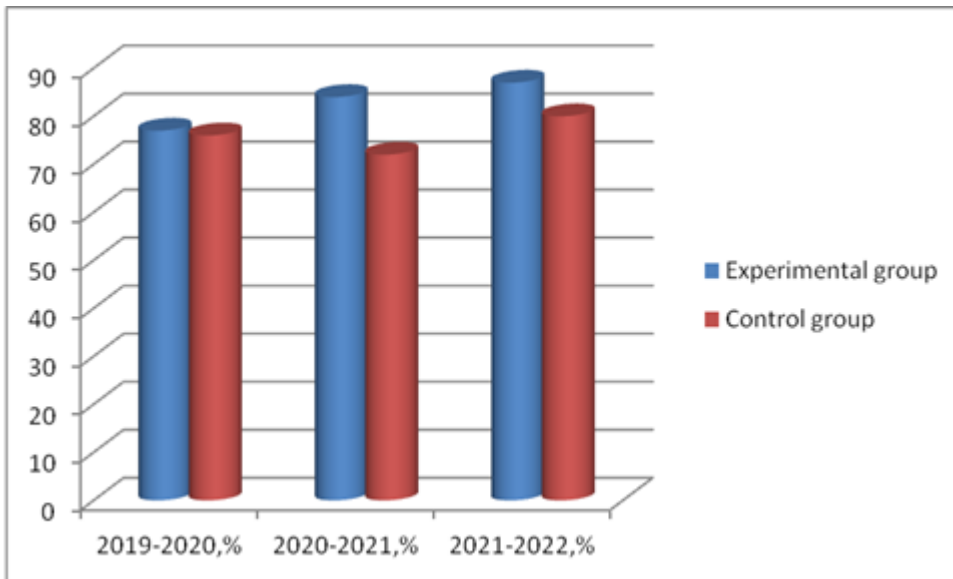
Fig. 5. Changes in the quality of education

The effectiveness of activation of training was determined by a 1 % difference during traditional training. Interaction in distance learning showed a high level of studying and systematization, analysis and systematization of learning material. This was clearly shown by the improvement of the education quality. The effectiveness of distance learning was revealed due to the difference in the quality of education.

The results of the experiment in comparison with the control group were more intense than the digital characteristics. According to our research, compared to the beginning of the experiment and the quality of education at the end of the education, it has increased by 10 % (Figure 6).
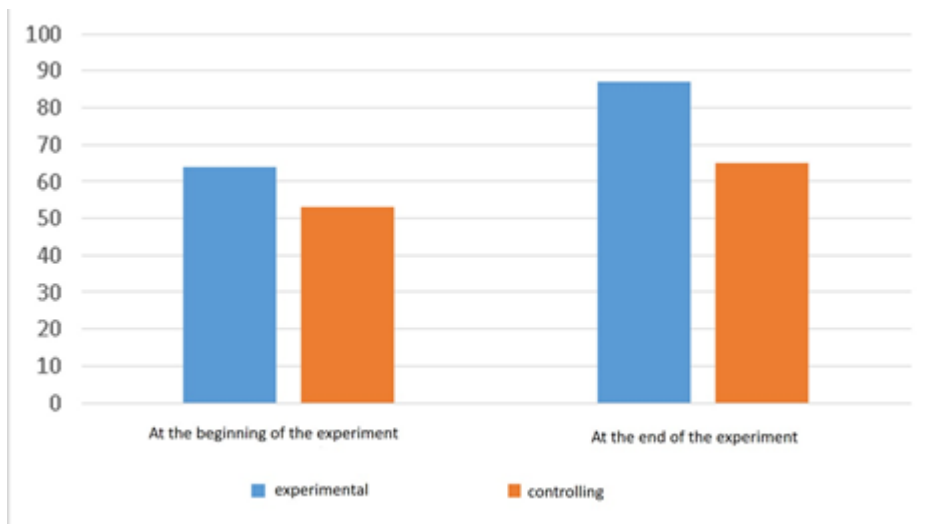
Fig. 6. The results of the study

As a result of theoretical and experimental research, based on pedagogical principles, it was concluded that the following conditions must be met in order to activate distance learning:
- selection of the optimal hardware and software for training (hardware and software conditions),
- development of educational information, ie content in various forms (information provision conditions)

- the use of active methods of traditional learning, adaptation to distance learning (conditions of methodological support),
- be prepared to implement a culture of working with digital technology (a condition of having a digital culture).

Distance learning can be effective only if these conditions are met. Interviews with learners (17 learners) showed that the lecture was interesting, increased interest, enthusiasm, access to content outside the lecturehalls, videos, podcasts, web pages, game tasks lead to the analysis and organization of the topic. Therefore, the training of lecturers (Medeshova et al., 2016, Medeshova et al., 2020) had a significant impact on the development of content, the choice of software environment, the active conduct of distance learning. The quality of education has improved when lecturers use active teaching methods freely in traditional, distance and mixed learning.

This has constantly enhanced the digital competence of every lecturer. In order to organize distance or traditional learning, a lectyrer must first take on the role of a learner. Because today's technology is full of innovative approaches. An open online course, video lectures are effective not only for distance learning, but also for traditional learning. Coursera, Stepik, Microsoft, Lectoruim, etc. are involved in improving the methods of distance learning. Open online courses are offered. Author's courses "Online technologies in teaching", "Methods of teaching computer science" became the basis for planning and organizing distance learning.

4. Discussion

The intersubjective relationship between lecturer and learner in traditional teaching (Figure 7) began by the end of the twentieth century and are also a topical issue in the research of the XXI century (Bervell et al., 2021).
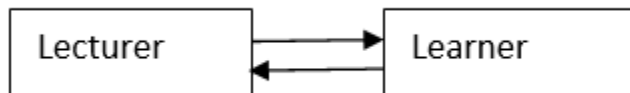
Fig. 7. The relationship between lecturer and learner

The use of distance learning at the university is expanding. However, we noticed from previous studies that its terminology has not been formed yet. In particular, Dr. Angel Smrikarov (2020), professor of Bulgarian University, considered integration of synchronous and asynchronous mode of distance learning with traditional teaching of remote learning, Salonen et al, (2021) used "mixed training". The next work provides for "mixed training" to convert traditional facial education with distance learning (Bervell et al., 2021).

In our study in accordance with the latest literature, the compatibility of traditional learning with synchronous and asynchronous modes of distance learning was considered as "mixed training" (Hrastinski, 2019; Ashraf et al., 2021; Xu et al., 2021). During traditional training we considered the synchronous training of some students through a remote video conferencing as a "hybrid training". Proper use of terminology, describing their meaning is one of the most important issues in improving the methods of distance learning.

The following analysis says that all scientific and methodological works (brief, ICT) are conducted in all scientific and methodological works of the traditional learning in relation to figure 7 above. We systematized them and offered in the form of a drawing (Figure 8).

Fig. 8. Interdisciplinary communication in digital education

This relationship reflects the technical support of distance learning. The distance learning management system (LMS) used in many universities (LMS) covers issues of inter-subjector

communication, ICT infrastructure. The solution of these issues is not carried out only through technical support, which has a significant influence on the software environment.

Research work conducted in recent years on the program of distance learning complement each other.

Bervell has developed a reception scale (Blas) of mixed education in higher education. The study on the reception of distance learning was carried out only on tutors and data was processed on the basis of the Likert scale. Factors influencing distance learning are grouped as performance, expected efforts, social impact, facilitation, independence, self-efficiency, experience, behavioral and operational voluntariness (Bervell et al., 2021). Some factors in our study are considered from the pedagogical point of view in the methodological support of distance learning.

In the methodological support of distance learning,"an upside down class" is of special attention. Gündüz (2020) proposed to conduct actively feedback through game elements. The use of gamification in the "Inverted class" has increased schoolchildren's motivation to study. In our study, the use of game elements in the "Inverted class" was considered for students of the pedagogical specialty at the university. That is, it was used to adapt to future teachers. As a result, the games applied to distance learning awakened the study of students to increase the quality of education. To Gündüz, Akkoyunlu's opinion (2020) it is important to use research results in pedagogical educational institutions and create a methodological portfolio of students.

E. Sorokoumova (2021) has considered digital communication of students in the Internet environment. In the scientific work digital technology and digital products are considered as their positive attributes, such as leading ability to think about and dangers, as the addiction on the Internet, and traditional training of teachers can be used to develop the Internet environment for the development of subject competencies. It was proved that it can use active learning methods in online training.

The role of design and smart technology is very important in activating distance learning. Astashova et al. (2021). Has considered the spread of interactive technologies and ICT tools in higher education to improve the skills of interactive technologies as a key component of training and professional development, if technological resources are considered as a key component of educating and professionalism, remote learning in the study of distance learning; the transmission was carried out as a digitalization process and adaptation of ways to develop a digital competence of teachers and adaptation to the student's learning technologies in distance learning. In particular, students were able to prepare integration projects using the knowledge they have received at the university. Using teachers' attitude to design, smart and cloud technology (QR-CODE, Google Disk, Google Classroom, etc.) students' knowledge has been studied from the technological point of view.

In terms of information support of distance learning, Lohr et al. (2021) studies the role of video content in online training. The video was considered as a part of the study that can be supplemented to use offline. For the availability of video content, the useful value of the YouTube channel was taken into account.

Our study clearly showed that it can improve the quality of education through the adaptation of active methods of traditional learning to distance learning. In general, the living and professional competence of entities involved in distance learning will be strengthened in the digital society. In addition, distance learning was considered as a single process, regardless of traditional training. Our study clearly showed that the adaptation of active methods of traditional learning to a distance one can improve the quality of education. The results of our research complement the previous works and recommended for use.

6. Conclusion

One of the main goals of the development of distance education around the world is to create conditions for learners (students, pupils, undergraduates) to study in any college or university curriculum. This will allow the learner to move from one country to another, to develop new promising projects in the context of mutual exchange of educational resources, armed with a unified approach to ideas. Therefore, the technical, software, information, methodological support of training is the core of the activation of distance learning. As a result, the fulfillment of these pedagogical conditions leads to the validity of the research hypothesis.

Communication between each lecturer and learner will be qualitative only if it is based on the principles of reliability, accessibility, openness, transparency and includes effective methods and

equipment. The lecturer of the university strengthens his own preparation for the organized use of traditional, distance, mixed teaching methods. To do this, the pedagogical conditions formulated as a result of the study are satisfied:

- It is necessary to pay special attention to the equipment of the subjects involved in the educational process with digital equipment and the convenience and accessibility of the software platform;

- It is necessary to update the subject information space, the curriculum, the syllabus on the subject results, the expected results, understandable to the student;

- Methodologically, taking into account the student's interest in the subject, psychological and social readiness, profile of professional activity, it is necessary to improve their professional skills by applying the acquired knowledge in practice;

- In order to have a digital culture, teachers must constantly improve their knowledge and be equipped with innovative educational technologies.

Activation of distance learning is constantly being improved. The results of the study showed a positive result in the introduction of active methods of distance learning in the educational process. In order to increase the digital competence of university lecturer, it is necessary to take measures to improve their skills. Methodological requirements for the development of content, information space, the choice of software learning environment, the organization of services to improve the technical and psychological readiness of learners were met. The pedagogical features of distance learning in higher education are not limited to the training of a professionally competent person in the digital state, it is aimed at becoming a qualified specialist of tomorrow.

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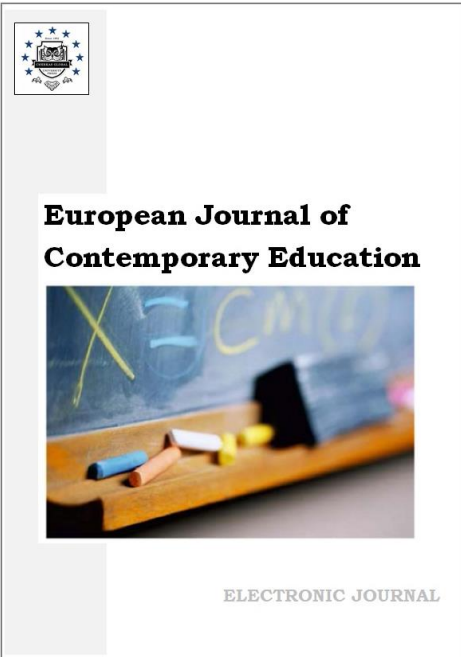
Perceived Quality Educational Practice for Children at Risk of Social Exclusion and Its Relation to Teachers' Training

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Abstract
The benefits of high-quality Early Childhood Education and Care (ECEC) as a prerequisite and opportunity for development, especially for children and families at risk of social exclusion, are widely recognized. High-quality educational practices for children at risk of social exclusion (RSE) should be flexible and aligned with their individual needs. This study uses a national stratified random sample of 1,142 Croatian preschool teachers to examine how they perceive the quality of educational practices regarding children at RSE. Preschool teachers perceive conditions and opportunities for quality education of children at RSE in ECEC by providing activities that promote diversity, building partnerships with parents, and children's development and learning. Perceived conditions and opportunities for children with RSE were related to teachers' formal education level: their master's degree and prior participation in training on developmentally appropriate practices for children with RSE. Only one-fifth of the teachers had recently participated in in-service training on children with RSE, indicating the need for high-quality teacher in-service training to acquire skills to support this group of children and their parents. Teacher in-service training can improve the perception of better conditions and opportunities for quality pedagogical practice that addresses the individual needs of each child at risk of social exclusion.
Keywords: ECEC, children at risk, preschool teachers, quality education, teacher training, inclusion.

1. Introduction

Social exclusion is a complex concept that encompasses the previous notions of poverty, disadvantage, and marginalization and refers to social inequalities in the availability of education,

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economic, sociocultural, health, and other social resources (e.g., Levitas et al., 2007). European social policy emphasizes the importance and opportunities of investing in high-quality early childhood education and care (ECEC) to reduce social inequality and exclusion (European Commission, 2014; European Commission, 2019).

The quality ECEC provides an opportunity for early equality in educational opportunities and minimization of all forms of exclusion associated with discrimination, cultural segregation, and poverty (Bove, Sharmahd, 2020), as a potential equaliser of opportunities (Peleman et al., 2020).

While ECEC plays a significant role in the development of all children, its importance is even greater for children at risk of social exclusion (Council of the European Commission, 2019). The children at risk of social exclusion are the most vulnerable social groups that may encounter barriers to resources, as transgenerational transmission of positions of social exclusion. Ensuring equal educational opportunities at an early age may span the gap in intergenerational inequality and the socioeconomic position of parents and their children and prevents adult social exclusion. (e.g., Backman, Nilsson, 2011).

Child participation in quality ECEC has a significant impact on children's well-being and development (e.g., Loeb et al., 2004, Bartolo et al., 2016), cognitive development, and academic performance (Pianta et al., 2009), socio-emotional development (Barnett, 2011), with long-lasting benefits for quality of life in adulthood (e.g., Camilli et al., 2010; Heckman et al., 2013). The cognitive and socio-emotional development of children participating in ECEC (e.g., Loeb et al., 2004) is higher among the most disadvantaged children than among "average" children (European Commission, 2014: 14).

Quality of service is related to better developmental outcomes for children and constitutes an important policy tool to address social inequality and promote social justice (e.g., Jensen, 2009; Bartolo et al., 2016). Only high-quality, affordable, accessible, and inclusive ECEC services are related to those benefits, which are a necessary start for children from all backgrounds (Murray, 2012: 569). While low-quality services negatively impact children and society (Review of Research on the Effects of Early Childhood Education and Care on Child Development, 2015), high-quality provision is the focus of the legislation, reforms, and research.

The quality ECEC provision is a child-centered and tailored to the individual needs of each child (e.g. ISSA, 2010, Antulić Majcen, Drvodelić, 2021; Skočić Mihić, Sekušak Galešev, 2016; Skočić Mihić et al., 2016). The high-quality educational environment enables every child to full participation in learning activities, following its interest in a safe and enriching environment with a range of possibilities for developing child potential.

The central aspect of high-quality ECEC is the quality of teaching, instructional practice and teacher behavior, teacher-child interaction, and relationships (e.g., Hamre et al., 2007; Cadima et al., 2018). The quality of interactions between staff and children is related to teachers' competencies. Complex knowledge of child development in the early years and pedagogy, as well as an understanding of a unique opportunity and the factors that contribute to child development, are closely related to the quality of teacher preparation. Quality pedagogy and excellence are inextricably linked to teachers' competencies to respond to higher levels of social diversity. International Step by Step Association (2010) defined the competence profile of teachers of the 21st Century in areas of (1) Interactions, (2) Family and Community, (3) Inclusion, Diversity, and Values of Democracy, (4) Assessment and Planning, (5) Teaching Strategies, (6) Learning Environment, and (7) Professional Development.

Teachers' competencies in creating a nurturing and supportive environment for the development of children at RSE and their parents in all mentioned areas are critical (e.g., Bagdi, Vacca, 2005). For those children and families facing barriers in social inclusion, ECEC services should provide an integrated approach to the child and family, building a partnership with parents based on trust and mutual respect (Magnuson et al., 2006).

Teachers' professional development and devotion to the profession are closely related to the quality of pedagogical practice (Melhuish, 2004; Nasiopoulou et al., 2021; Peeters, Sharmahd, 2014). Teachers' in-service training is fundamental to developing positive attitudes, complex knowledge, and skills to respond to children and families from disadvantaged backgrounds. It is a significant predictor of a higher perception of the importance of the quality of inclusive pedagogical practice regarding children at RSE (Visković, 2021).

Croatia is becoming a multicultural society with increasing diversity in ECEC, although there is very little literature and research on this topic (Višnjić-Jevtić et al., 2021). Recently, theoretical and empirical studies have been conducted within the MORENEC project, focusing on the quality of pedagogical practice concerning the educational needs of children at RSE in Croatian ECEC (e.g., Bouillet, Domović, 2021, Višnjić-Jevtić et al., 2021; Visković, 2021; Antulić Majcen, Drvodelić, 2021).

Knowledge about how the diversity of children and their families is recognized and respected in Croatian ECEC and how their educational needs are addressed is limited (Bouillet, Domović, 2021), as is the paucity of research on teachers' perceptions of the quality of inclusive educational practice (e.g. Shevlin, et all., 2013; Visković, 2021).

Operationalization of the concept of quality in ECEC services is complex, dynamic, and multidimensional. It is based on integrating interdependent factors that contribute to children's development and learning. Quality is not an internationally agreed concept with uniform measurement. There are different approaches to measurement. The frequently used one refers to structural quality, process quality, and outcome quality (Donabedian, 1980; according to Sheriman, 2007; European Commission, 2014). Council of the European Union (2019) identified five broader areas of quality: access, staff, curriculum, monitoring and evaluation, and governance and funding. The principles of high-quality ECEC provision refer to (1) promotion of children's development and learning due to raising their educational chances; (2) parents' participation as partners, and (3) child-centred services that acknowledge child perspective and their active involvement (Council of the European Union, 2019).

In this article, the operationalization of the concept of quality of ECEC services for children at RSE refers to (1) process determinants of quality of educational practice in seven areas (International Step…, 2010) and (2) principles for quality ECEC provision (Council of the European Union, 2019). The first research question started from the concept that perceptions of the opportunities and conditions for ensuring quality educational practice for children at RSE cover different areas of teachers' professional responsibilities that promote children's development and learning, respect for diversity, and social inclusion in groups, and partnership with parents. In line with this, higher perceptions of opportunities and conditions for ensuring quality educational practice for children at RSE would correlate with teachers' professional development (e.g. Visković, 2021), socio-demographic data and characteristics of the working environment.

Thus, this study aimed to examine teachers' perceptions of the conditions and opportunities in ensuring quality preschool educational practices for children in RSE, as well as the correlation with independent variables: (1) teachers' sociodemographic data (age, years of work experience), formal education level, number of children in classes, and participation in special programs/curricula), and (2) type of in-service training on children in RSE.

The following hypotheses were formulated:

H1. There is a positive correlation between all three dimensions of perceived condition and opportunities in providing quality education to children at RSE.

H.2. Higher level of perceived condition and opportunities in providing quality education to children at RSE correlate with teachers' sociodemografic features and pre-service training.

H.3. Higher level of perceived condition and opportunities in providing quality education to children at RSE correlate with teachers' in-service training regarding children at RSE.

2. Method
Sample

The representative national stratified sample contain 1142 preschool teachers (female = 1037; male = 11) from 66 Croatian ECEC. It represents 10,4 % of all 635 ECEC institutions in Croatia[1]. The random samples of the institution were taken in equal proportions forming a total sample according to the following four criteria: geographic location and the type of settlements, the founder, and the size[2].

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[1] According to data provided by the Croatian Bureau of Statistics. Available at: https://dzs.gov.hr/en.

[2] (a) regions of the Republic of Croatia (proportion of six region) [2], (b) the founder of ECEC (ratio of 82.6 % public, 14.8 % private, and 2.6 % religious), (c) the type of settlements (81 % cities and 19 % municipalities), and (d) the size of the facility (50.6 % small, 40.1 % medium, and 9.3 % large).

The average age of preschool teachers was 41.08 years (SD = 10.90; range = 22–68), with an average working experience of 14.98 years (SD = 11.45; range = 0–43). A high percentage of the classrooms were in public ECEC settings (78 %).

More than half of the teachers (52 %) had a completed two- or three-year study program, 23 % had a bachelor's degree, 20 % had a master's degree, and 4 % had a high school degree. Group size varied, with an average of 20.26 children in an educational group (SD = 5.15). The majority of teachers (78.2 %) had not participated in any in-service training regarding children at RSE in the previous year, while 10.2 % had participated once, 7.9 % two or three times, and only 2.0 % four or more times.

Instrument

The Quality Education Practice Regarding Children at RSE Scale was constructed by the project team members: Sandra Antulić Majcen, Dejana Bouillet, Vlatka Domović, Maja Drvodelić, Marina Panić, Monika Pažur, Ksenija Romstein, Sanja Skočić Mihić, Esmeralda Sunko, Ivana Visković and Adrijana Višnjić Jevtić. The scale examines how teachers perceive ECEC institutions' conditions and opportunities to provide educational activities and interventions on 22 items.

Theoretical framework is based on ISSA (International Step…, 2010) standards of quality educational practice and activities for children at RSE in dimension of respect for diversity (e.g., 'Implementing specific activities focused on embracing diversity in the ECEC classroom'), building partnerships with parents (e.g., 'Involving family members of children with at in decision making related to the ECEC classroom, such as curriculum development, activities, assessments, etc.'), and children's development and learning (e.g., 'Guiding children at RSE in assessing the behavior and work of children, preschool teachers, and other adults'). Each item is rated on a 4-point Likert scale with the following response options: 1 (none), 2 (to a small degree), 3 (somewhat) and 4 (completely).

The independent variables were teachers' age, work experience, degree, and participation in continuous professional training for children at RSE.

Procedure

The study protocol, as part of the project Models of Response to Educational Needs of Children at Risk of Social Exclusion in ECEC Institutions, was approved by the Ministry of Education. The initial approval for participation was obtained from the administrative director of the selected kindergarten. All participants provided consent to participate in the study, and anonymity was guaranteed. Data were collected through both online and paper questionnaire formats.

Data analysis

To determine the construct validity of the scale, exploratory principal component analysis and oblimin rotation were performed. The scree plot and Kaiser-Guttman criteria were used to identify the latent dimensions of the instrument. Cronbach's alpha internal consistency coefficient of each subscale was calculated to establish reliability. Descriptive statistics (mean and standard deviation) are presented for the items and subscales. Kolmogorov-Smirnov test was performed to test the normality of the distribution. Spearman's Rho coefficient was calculated to establish correlations between the subscales and independent continuous variables. P value of <.05 was considered to be statistically significant.

3. Results
Descriptive data and factor structure
Demographic data and factor structure of the instrument are presented in Table 1.

(a) Regions: Nord Croatia (Međimurska, Varaždinska, Krapinsko-zagorska i Koprivničko-križevačka County), Middle Croatia (Zagrebačka, Karlovačka, Sisačko-moslovačka i Bjelovarsko-bilogorska County), Istra I Primorje (Istarska, Primorsko-goranska, Ličko-senjska County), Dalmacija (Zadarska, Šibensko-kninska, Splitsko-dalmatinska i Dubrovačko- neretvanska County), East Croatia (Virovitičko-podravska, Požeško-slavonska, Osječko-baranjska, Brodsko-posavska i Vukovarsko-srijemska County), and City of Zagreb.

Table 1. Basic statistical data and saturation factors

Conditions and opportunities for ECEC quality in my institution for children at RSE for …	β	h²	Range	M (SD)
Respecting diversity			*2.20−5*	*4.32(0.50)*
… conducting specific activities directed toward accepting diversity in ECEC classroom	.801	.579	1−5	4.34 (.731)
… making opportunities for learning diversity acceptance among children	.789	.616	2−5	4.54 (.611)
… conducting activities directed toward gaining an insight into effects of biases on emotions of members of socially vulnerable groups	.706	.552	1−5	4.10 (.838)
… active work on development of group culture and togetherness of all children in the ECEC classroom	.680	.505	1−5	4.47 (.680)
… conducting dialogue with children about various conditions of growing up in families (single parent families, poverty in the family, etc.)	.607	.447	1−5	4.28 (.822)
… classroom arrangement with illustration on diversity of children (identity, race, physical appearance, developmental disabilities, etc.)	.540	.360	1−5	4.18 (.883)
… addressing the unsubstantiality of attitudes based on prejudice and biases towards cultural, gender, and other minorities (e.g., with own example)	.537	.440	1−5	4.19 (.881)
… encouraging children at RSE to express own opinions	.360	.324	1−5	4.56 (.596)
… equal respect of religious customs, co-existing in the society	.358	.331	1−5	4.22 (.941)
… encouraging initiatives, autonomy and independency of children, regardless of their developmental, health, family, social, cultural and other specificities	.349	.347	1−5	4.33 (.709)
Building partnerships with parents			*1−5*	*3.57 (0.78)*
… including family members of children at RSE in decision making regarding ECEC classroom (development of the curriculum, activities, assessments, etc.)	.759	.634	1−5	3.12 (1.095)
… making opportunities for connecting families with different backgrounds, cultures, and views	.742	.622	1−5	3.50 (1.056)
… involving family members of children at RSE in curricular activities in the ECEC classroom	.724	.584	1−5	3.53 (1.048)
… integration of different family identities and cultures in the curriculum of ECEC classroom	.719	.644	1−5	3.82 (.958)
… usage of language and activities devoid of gender and other biases	.495	.483	1−5	3.91 (1.008)
Children's development and learning			*1.17−5*	*3.87(0.66)*
… directing children at RSE in the assessment of behavior and work of others (children, preschool teachers, and other adults)	-.793	.654	1−5	3.46 (.986)
… introducing children at RSE with educational goals and encouraging children to think about process of own learning	-.711	.674	1−5	3.95 (.838)
… encouraging children at RSE to document own learning process	-.692	.576	1−5	3.49 (.980)
… encouraging the higher mental processes and problem-solving skills of children at RSE	-.607	.644	1−5	3.96 (.806)
… applying strategies that facilitate self-regulation behavior of children at RSE	-.521	.573	1−5	4.07 (.754)
… offering children at RSE choices and support in understanding consequences of the choices made	-.468	.552	1−5	4.25 (.716)

The factor analysis yielded three factors: respect for diversity, building partnerships with parents, and children's development and learning (eigenvalues=8.156, 1.685, and 1.30), explaining 53 % of the variance (38.84 %, 8.92 %, and 6.19 %, respectively). The Kaiser-Meyer-Olkin value was .924. Factor loadings on respecting the diversity dimension were between 0.801 and 0.349; on parental partnership dimension between 0.759 and 0.495, and on enhancing development and learning in children at RSE between -0.793 and -0.468. The metric characteristics indicated an adequate degree of reliability for each dimension (Cronbach's alpha coefficients were 0.848, 0.810, and 0.859, respectively). Descriptive data showed good discriminative features for all dimensions. The Kolmogorov-Smirnov test was performed to assess the normality of the distribution, and it was found that the empirical distribution deviated from the normal distribution for all three subscales ($z_1 = 3.374$, $p = 0.00$; $z_2 = 2.065$, $p = 0.00$; and $z_3 = 2.175$, $p = 0.00$, respectively). Therefore, Spearman's coefficient was calculated to determine the correlation.

Regarding the diversity dimension, preschool teachers reported that in their kindergartens, they mostly had conditions and opportunities for practice that support diversity and children at RSE. In addition, they mostly agreed that they had adequate conditions and opportunities for pedagogical practice toward children at RSE in the children's development and learning dimension. Similarly, they reported that conditions and opportunities were adequate for building partnerships with parents. Interestingly, the lowest assessments concerned conditions and opportunities for the involvement of family members of children at RSE in decision making regarding curriculum, activities, and assessments. Evidently, preschool teachers assess comparatively lower levels of conditions and opportunities for pedagogical practice in the aspects of partnerships with parents of children at RSE and encouraging the development and learning of children at RSE.

Correlations between sociodemographic variables and the dimensions of teachers' attitudes

After identifying the dimensions of preschool teachers' attitudes toward conditions and opportunities of ECEC quality practice for children at RSE, correlations among the dimensions and with sociodemographic variables were calculated (Table 2).

Table 2. Intercorrelations among the dimensions and sociodemographic variables

		Respecting diversity	*Parental partnership*	*Enhancing development*
Factors	*Respecting diversity*	1.000	**.600*****	**.684*****
	Parental partnership		1.000	**.598*****
	Enhancing development and learning			1.000
Preschool teachers	Age	-.043	**-.102****	**-.075***
	Working experience	-.036	**-.095****	**-.087****
	Formal level of education	-.058	**-.123****	**-.062***
Institution	Number of children in ECEC classroom	**-.075***	.027	**.063***
	Special programs/curriculum	.046	**.083****	**.054***

Legend: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; N, number of preschool teachers

The results indicated that the correlations were high and statistically significant ($\rho = .600$; $\rho = .684$; $\rho = .598$; $p < .001$) for all domains. Preschool teachers with fewer years of work experience and lower levels of formal education perceive higher levels of conditions and

opportunities for ECEC practice to promote parental participation and enhance the development and learning of children at RSE.

To identify the correlation between preschool teachers' assessments of conditions and opportunities for quality ECEC practice and in-service training regarding children at RSE, Spearman's Rho coefficient and Kendall's Tau correlation for binary variables were calculated.

Table 3. Correlation of preschool teachers' assessments on in-service training regarding children at RSE

In-service training on the topic of children at RSE	N (%)	*Respecting diversity*	*Parental partnership*	*Enhancing development*
Participation in training last year [S]	230 (20.1%)	.056	**.093****	.044
Once [K]	*117 (10.2%)*			
Two to three	*90 (7.9%)*			
Four or more	*23 (2%)*			
PD: exchange examples of good	680 (59.5%)	.057	**.085****	**.092****
PD: reflection on own practice [K]	470 (41.2%)	.048	**.121****	**.140****
PD: specific programs [K]	282 (24.7%)	.048	**.068***	.035
PD: literature use [K]	774 (67.8%)	**.124****	**.099****	**.110****
PD: research data use [K]	149 (13%)	**.082****	**.156****	**115****
PD: participating in learning	166 (2.8%)	.010	**.093****	**.114****

Legend: * p < 0.05; ** p < 0.01; *** p < 0.001; N, number of preschool teachers; S, Spearman's Rho coefficient; K, Kendall's Tau for dichotomous variable; PD, Professional development

As can be seen from Table 3, only a fifth of preschool teachers reported that they had participated in in-service training related to children at RSE within the past year. Approximately 70 % of preschool teachers reported using professional literature, while 60 % relied on exchanges of good practice. Less than half of the preschool teachers reflected on their own practice, while a quarter participated in specific training, and less than 15 % used research and scientific data and relied on the learning community. Further, very low, albeit positive, correlations were found between all types of professional development and two dimensions: parental partnership and children's development and learning (except training in specific programs).

4. Discussion

Given that RSE has scarcely been researched in Croatian ECEC, especially from teacher's perspective, the findings of this study explicitly indicate teachers' perception conditions and possibilities to respond to the needs of children at RSE and their parents in accordance to theoretical framework and quality standards. Teachers recognize the conditions and opportunities for quality pedagogical practice for children with RSE in organizing group activities toward accepting diversity in the ECEC classroom, enhancing the development and learning of the child with RSE, and building partnerships with families. The first two dimensions cover quality pedagogical practice by (1) group activities that promote and respect diversity, (2) arranging a learning environment suitable for every child with RSE, while the third one parental involvement. The conditions and opportunities for parental involvement of children in RSE from the teacher's perspective are lower than in the previous two. Opportunities for family involvement in curricular activities or decision-making related to the curriculum development, activities, and assessments in ECEC classroom, as well as creating opportunities for connecting families with diverse backgrounds, cultures, and views, are presented but should be observed at higher levels in the context of quality educational practice. Similar, moderate self-perceived competencies to build a partnership with parents using counseling skills are found (e.g., Skočić Mihić et al., 2015, Skočić Mihić et al., 2019).

As expected, teachers perceive quality ECEC to be associated with different process-related and structural factors, as described here: 'overall welcoming atmosphere, inclusive social environment, child-centered approach, child-friendly physical environment, materials for all children, opportunities for communication for all, inclusive teaching and learning environment and family-friendly environment' (European Agency..., 2017: 3). In quality pedagogical practice and ECEC, an interdisciplinary approach involving highly qualified professionals with all stakeholders in the child's immediate environment is required (Antulić Majcen, Drvodelić, 2021).

Further, the results point to educational institutions' obligation to provide an inclusive environment to shapes children's experiences toward the development of their full potential.

Quality ECEC practice has predictive value for children at RSE. Preschool teachers are of great importance, while their attitudes and knowledge of RSE are crucial to ECEC quality. They should facilitate developmental, cultural, language, and other diversity amongst children and portray them through educational approaches (Bouillet, Domović, 2021). As designers of ECEC instructional processes, preschool teachers may directly reduce the potential for further social exclusion of children at RSE and ensure fairer conditions for the well-being of all students, regardless of their individual capabilities and socioeconomic backgrounds (e.g., Miškolci et al., 2021).

Inclusive ECEC is based on adults' responsiveness toward children's needs and the acceptance of family backgrounds. Quality ECEC provides appropriate support through an individualized approach for children at RSE due to their developmental level, socioeconomic status, cultural background, or adverse family dynamics (e.g. Kumpulainen, 2018; Pianta et al., 2009). Acknowledging cultural and individual diversity and the cultural backgrounds of families is a crucial element for teachers' professional work, as their cultural frameworks shape their work with families (Jørgensen et al., 2020).

The findings also suggest a lack of teacher training related to children at RSE, which is fundamental to understanding the current state of ECEC. First, Croatian initial teacher education programs do not adequately prepare teachers to work with children at RSE (Bouillet et al., 2021). Moreover, initial teacher training in the last two decades in Croatia has transformed from two – to five-year study programs, as well as from professional to university degrees, as can be seen from the sociodemographic data of teachers, which shows wide variations in educational qualifications, ranging from high school to master's degrees.

The research revealed that preschool teachers' enrolment in in-service training for children at RSE was inadequate. Bouillet and Domović (2021) found that teachers were not sufficiently familiar with the full complexity and diversity of the needs of children at RSE. Approximately 30 % of preschool teachers stated that they had gained competencies for practice through literature and exchanges of examples of good practice, as well as reflection on their own pedagogical practice, that is, through informal channels. Participation in professional development training results in teachers having more positive attitudes toward inclusive education (e.g., Holmqvist, Lelinge, 2020). However, considering that less than a quarter of the preschool teachers reported developing professional competencies for educating children at RSE through specific programs, such as through a learning community or consulting scientific data, it may be concluded that Croatian preschool teachers lack opportunities for formal education on quality ECEC for children at RSE.

Continuous professional development presupposes the presence of quality lifelong programs and training for preschool teachers that are locally available as well as affordable. The need for ongoing training is recognized by students before they enter the labor market. However, themes regarding children at RSE, that is, the developmentally appropriate practice for children at RSE, must be included. To achieve quality ECEC in in-service training, it is useful to channel Bynner's (2001) thoughts on children and the interactive nature of their development —children are the most vulnerable social group, incapable of complete self-care; the socio-economic context of a child's development has a long-term impact on their cognitive development, and subsequently, academic achievement; risk and protective factors in the child's immediate surroundings interact with the child's biological characteristics, defining their resilience; and children's development is dynamic and unpredictable, rather than linear. These findings suggest that quality ECEC practice toward children at RSE should be flexible and closely connected to preschool teachers' meta-knowledge.

In the micro-system, preschool teachers are a structural factor enhancing ECEC quality, which can be seen in their level of engagement derived from their value system, attitudes, and opinions regarding pedagogical practice (Gormley et al., 2005; Kelley, Camili, 2004). Quality ECEC practice is

oriented toward designing an inclusive environment and curriculum, enabling optimal support for child development, starting from their interests, abilities, and functioning. Preschool teachers' competence in securing adequate support and inclusive ECEC practice opens up opportunities for resilience building in children at RSE, which can be seen as a critical tool for life. However, the findings of this research confirmed that ECEC institutions lack adequate conditions and opportunities to meet the needs of children at RSE, leaving preschool teachers in a conundrum.

Protective factors closely related to the prevention of social exclusion are the quality of ECEC, availability of resources within the community, and well-established mechanisms of social support for families. Considering that 'the gap between policy recommendations that highly support inclusive education and obstacles still exists' (Bouillet, Domović, 2021: 962), and owing to the diversity in ECEC organization, law regulation, and other structural aspects, preschool teachers bear the responsibility to be the propellers of change. Preschool teachers play a crucial role in high inclusive quality education, and their beliefs, knowledge, experiences, self-efficacy, mental health, and social-emotional competence directly influence their ability to support children's social-emotional development (e.g. Blewitt et al., 2020), with long-term outcomes. Finally, the results point to the need of ECEC institutions to ensure greater accessibility, quality, and fairness of services to encompass more children at RSE.

5. Limitations

First, this study used a self-report measure to assess teachers' attitudes; such measures are known to be affected by various types of response biases. Second, the concept of risk of social exclusion is very broad and somewhat vague in nature. Although the terminology is widely used in ECEC practice, the epistemology is still uncertain. This is probably because of its close connection to the axiology and declarative level of societal values present in legislation. Social exclusion is a complex, multidimensional process, which involves a lack or total absence of 'resources, rights, goods and services, and the inability to participate in the normal relationships and activities, available to the majority of people in society, whether in economic, social, cultural or political arenas' (Levitas et al., 2007: 9). Thus, a large proportion of people are expected to face disadvantages and social exclusion, suggesting that the same situation exists in ECEC classrooms. Notwithstanding the limitations of this research, there is a need for quality in-service training. Longitudinal and cross-cultural studies should be undertaken for ECEC in-training programs for children at RSE. Further, mixed method approaches with participative methodologies, such as photovoice or double photo voice in real-life situations (Romstein, 2019), should also be considered.

6. Conclusion

Preschool teachers perceived the conditions and opportunities for quality ECEC toward children at RSE to be mostly adequate; however, their attitudes were not related to different forms of in-service training with quality ECEC. Positive attitudes toward ECEC conditions and opportunities were related to preschool teachers' level of formal education. Preschool teachers with master's degrees and those who had previously participated in formal in-service training about developmentally-appropriate practices for children at RSE had positive attitudes toward the conditions and possibilities of quality ECEC for children at RSE. The implications of these results are twofold. First, preschool teachers perceive the importance of continuous professional development for quality ECEC oriented toward the individual needs of each child, suggesting the need for quality in lifelong learning programs for preschool teachers. Second, the conditions and opportunities of ECEC institutions have to be studied, since kindergartens are places for child development in the most sensitive period of their life. Therefore, ECEC institutions must shape themselves into places of support and opportunities, places for unlocking children's true potential.

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Key Pedagogical Universities and Restructuring Teacher Education Institutions: A Case Study of Vietnam

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Abstract

The paper presents an overview of the teacher education institutions in Vietnam and examines the capacity of some key pedagogical universities. Based on the actual survey, analyzing the opinion of educational experts, the authors proposes some solutions for restructuring the teacher education institutions based on analyzing the limitations and shortcomings in the distribution of these institutions. The paper also points out the capacity of some key pedagogical universities, local pedagogical colleges and their role in training teachers for the whole country. The functions of key pedagogical universities and their "satellite" pedagogical colleges were determined in the teacher education system. As a result, the paper shows the urgency of restructuring the network of pedagogical universities and colleges that contributing to training high-quality human resources for the educational sector. The restructuring solution based on some core principles that stem from of analyzing international experiences and the current context of higher education renovation. The research results show that some key pedagogical universities should be built for leading the teacher education system and improving the quality of teacher training in Vietnam. Furthermore, the paper proposes a plan to merge local pedagogical colleges into local multidisciplinary universities or community colleges in order to maximize resources, improve preschool teachers training quality, at the same time, strengthen the cohesion between pedagogical universities and colleges in the teacher education system of the country.

Keywords: restructuring, teacher education institution, teacher education system, teacher training, key pedagogical university.

1. Introduction

The fundamental and comprehensive renovation of education and training poses urgent requirements in the renewal of general education programs and training programs of universities

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in Vietnam (Pham, 2013; Pham, Nguyen, 2020a). Teaching in schools is no longer the only source of information, mainly for each person. In that context, although general education still plays a decisive role, it is not only about imparting knowledge but forming in students the capacity for self-study, self-development and self-adaptation in a sustainable way. The role of general education is to make the younger generation acquire knowledge purposefully, selectively and systematically. In the context of science, engineering, and technology, which rapidly changes the economy and society, leading to the transfer of values, teachers not only impart knowledge but also develop emotions, attitudes, behavior, and know how to apply that knowledge (Darling, 2000; Lawrence, 2013; Nguyen, 2013; Prakash, 2014; Paul, 2015; SME, 2015). Therefore, the pedagogical labor characteristics of teachers have changed according to the trend of general education innovation with high requirements for quality and competence, requiring high-quality human resources in education (Lee, 2000; Chen, 2003; Vidovich, 2008; Susan, 2015; Saba et al., 2020). Therefore, teacher education institutions need to renovate training programs, diversify training models, training methods and international integration. Teacher education institutions play an important role in training, scientific research in education and fostering teachers to meet the radical innovation requirements.

The quality of teachers is the deciding factor for the quality of education. Currently, there are 111 teacher education institutions nationwide, including 14 teacher education universities, 48 multidisciplinary universities with teacher education, 30 teacher education colleges, 19 multidisciplinary colleges with teacher education programs, and 40 multidisciplinary pedagogical schools that are training preschool teachers (Pham, Nguyen, 2020b). In recent years, teacher education institutions have performed the task of training and fostering teachers and educational management staff, actively contributing to the cause of education and training renovation and socio-economic development of the country.

However, in the process of development, the system of teacher education institutions has revealed many limitations and shortcomings (Pham, 2013; Nguyen, 2013; Lu et al., 2019; Pham, Nguyen, 2020b). The expansion of time scale focused on quantity but did not pay enough attention to the quality assurance conditions; the distribution of teacher education establishments is too scattered and small; many establishments in the same area are duplicated in their functions and tasks; teacher education curriculum is not consistent; training has not been linked to user demand, and many graduates cannot find a job, causing waste and frustration; insufficient human resources for teachers between localities and levels; state budget is scattered, low efficiency; failing to attract best students to attend teacher education universities.

2. Literature review

Teacher education is an issue that has attracted the attention of many scientists around the world because teachers are an important factor determining the quality of a country's education. Currently, there are many models of teacher education in the world. In some countries teachers are trained in pedagogical universities according to a separate program, in other countries some excellent bachelors of science will receive specialized classes in training pedagogical skills to become teachers and some other countries combine both models (Pham, 2011; Nguyen, 2011; Pham, 2013).

In China, the teacher education system consists of 141 teacher education institutions, including 37 pedagogical universities. There are three types of teacher education that are independent of each other: pedagogical universities/colleges, provincial universities of education and vocational technical pedagogical schools. In addition, China has a number of multidisciplinary universities also engaged in teacher education (Chen, 2003; Lixu, 2004; Zhu, Fang, 2011). Currently, China is implementing solutions to improve the position of the pedagogy and teacher profession and focus on investing resources for 6 key pedagogical universities. The Ministry of Education renovates the university administration system towards enhancing the autonomy and sharing resources of pedagogical universities, renovates the teacher education program, develops standards of training programs and reconstructs teacher education institutions (Zhu, Han, 2011).

In Taiwan, teachers in high schools are mainly trained at three national pedagogical universities: National Taiwan Normal University, National Changhua University of Education and National Kaohsiung Normal University. These universities, in addition to training teachers, also train students in other specialties. Furthermore, there are a number of teachers trained in the

education departments of other multidisciplinary universities. Teacher education programs are developed by training institutions and approved by the Ministry of Education of Taiwan (Sun, Zhao, 2004; Kai et al., 2012; Cheryl, 2016). Thus, teacher education institutions in Taiwan are multi-disciplinary, multi-vocational, multi-field schools, unlike Vietnam. This model helps to have a diverse source of pedagogical students. Students studying pedagogy can transfer or study another major, students from other majors can also study pedagogy. Taiwan has a centralized State management of the annual teacher education quota to ensure the supply to meet social needs, this is chaired by the Ministry of Education, allocating the quota to the universities that based on regional capacity and conditions (Lixu, 2004; Zhu, Han, 2006). Teacher training centers of multidisciplinary universities have the task of training teacher and make vocational training professionally. Taiwan free tuition for pedagogical students, has a policy regime, supports spiritual and material life for teachers.

In Germany, before 2000, the German model of teacher education was characterized by being trained in a pedagogical university. Since 2000, single-disciplinary universities have been merged into multidisciplinary universities. Currently, there exist only pedagogical universities in the state of Baden Wuertemberg. In other states, pedagogical students are trained at a teacher education institute or faculty of a multidisciplinary university. Teachers are trained by grade level and by type of school. Secondary school teachers are trained for two subjects, in which the first and second subjects are distinguished with different proportions of training time. The training content has a high integration between educational science and specialized science (Adele, 2009; Ries et al., 2016; Cheryl, 2016). In Germany, there are different models of teacher education. *Teacher education for primary schools:* The training period is four years, of which the basic training program (bachelor) is three years. In the final year, students receive intensive training (master) and spend 18 months "practicing" at a primary school. Passing the teaching exam, students are granted a "certificate" to work as teachers in primary schools throughout Germany. *Teacher education for junior high schools:* The training period is five years, of which three years of basic education (bachelor) and two years of intensive study (master). This is followed by a period of 18 to 24 months of teaching practice in a junior high school depending on the state. Upon passing the teaching preparation exam, students are granted a "certificate" as a teacher in junior high schools. *Teacher education for high-quality secondary schools:* The training period is five years, of which three years of basic education (bachelor) and two years of intensive study (master). Students then have 24 months of teaching practice at a high-quality high school (Gymnasium). Students must practice teaching at least two subjects as they have been trained in depth. If students pass the exam, students will be granted a "certificate" as a Gymnasium teacher.

In Japan, there are many teacher education institutions in Japan. Satisfactory training institutions may be allowed to issue a teacher's license (about 500 training institutions are granted). Pedagogical universities are also allowed to issue teacher's license, but do not have priority in granting teacher's license (Iwata, 2004; Eva, Yoko, 2015). Types of teacher practice licenses include: (i) type II: Two-year study after high school (kindergarten teacher, primary school teacher, junior high school teacher); (ii) type I: Bachelor's degree (four years after high school) (kindergarten teacher, primary school teacher, junior high school teacher, high school teacher); (iii) advanced degree: Master's degree (four years, then two years after high school) (kindergarten teacher, primary school teacher, middle school teacher, high school teacher). For primary school teacher license, teachers can teach all subjects in an elementary school. By practicing as a teacher at high schools, they can teach a subject such as mathematics, social studies, science, home economics, English, etc.

There are two models of teacher education in Japan: Training at schools and faculty of pedagogy; training at other universities and colleges. For teacher education at schools and pedagogical faculties, before 1949, each province in Japan had a pedagogical school, specializing in training teachers of lower secondary schools (normal school). After 1949, these pedagogical schools gradually became pedagogical universities (university of education). Students of these schools or departments will be awarded a teacher's license upon graduation. However, they can do other jobs after graduation, not required to become teachers. For other colleges and universities, offers elective courses for students who want a teacher license. Unlike the schools and pedagogical faculties mentioned above (students are required to study and be granted a teacher's license), students of these universities and colleges are not required to study modules to be awarded a

degree practice as a teacher (if they do not want to be a teacher) (Iwata, 2004; Eva, Yoko, 2015; James, 2018). The percentage of teachers graduating from the two training models above is as follows: At primary level, 65 % of teachers study at schools and pedagogical faculties; 35 % studied at other universities and colleges. At the lower secondary level, 40 % of teachers study at schools and pedagogical faculties; 60 % studied at other universities and colleges. At the upper secondary level, there are 15 % of teachers studying in schools and pedagogical faculties; 85 % studied at other universities and colleges.

In the United States, there is no separate teacher education university. All faculties with teacher education programs are affiliated with some university (Adele, 2009; Barbara, 2015; John, Mary, 2016). To become a teacher, students need to go through the following two stages: i) studying a bachelor's degree at a university with a certain discipline. ii) after studying and obtaining a bachelor's degree, in order to become a teacher, students must first pass the 'Praxis I' exam to be admitted to the teacher education program with three basic subjects of primary school are: reading, writing and mathematics. After passing the exam, the student will enter a teacher education program. Normally, the duration of a teacher education program, especially for primary school teachers, is two years, including classroom time and pedagogical practice. If students want to teach at the secondary level, they must take some additional courses suitable to their teaching expertise. Regarding the organization of training, the states have a high degree of autonomy in allocating budgets, granting teacher licenses, accrediting teacher training institutions and setting educational quality standards (Barbara, 2015).

There are currently two models of teacher education in the world: parallel training model and consecutive training model with its own advantages and limitations. The parallel or concurrent model is a traditional training model, where learners earn a bachelor's degree in education or a bachelor of teacher education. This is a parallel training model of two blocks of basic scientific knowledge and pedagogy. According to the process of this model, students are pedagogically oriented right from the moment they enter the university, the subject program at university follows the subject program at the school level (from kindergarten to high school). The advantage of this model is the high integration between the two blocks of basic scientific knowledge and pedagogy. Students are "hands-on" in teaching, easy to have good pedagogical manipulations right after graduation (Pham, Nguyen, 2020b). The disadvantage of parallel training model, one is that students' subject knowledge is not in-depth, the other is rigidity, it is difficult for students to change careers when there are fluctuations in the labor market. This model is often implemented in single-field and self-contained pedagogical universities. In Vietnam, the parallel model has been developed for more than 60 years with the following basic advantages: (i) a favorable pedagogical environment in the formation of the personality of a teacher or an education specialist; (ii) the program is relatively stable; (iii) highly professional faculty and management staff; (iv) management experience – reputable school. There are also other advantages such as higher benchmarked entry and students' mechanical motivations determine careers in the first place (Nguyen, 2011; Nguyen, 2013; Pham, Nguyen, 2020a). However, reality in Vietnam shows that this model also has limitations such as: (i) slow to change the program to adapt to reality; (ii) there is little screening in the training process, and students do not have the opportunity to change training majors; (iii) need a large investment for the system (Pham, Nguyen, 2020b).

Consecutive model is a training model for basic scientific knowledge first, then pedagogical knowledge block. If in the traditional model, students will enter a university or college of pedagogy after graduating from high school and study for a bachelor's degree in teacher education, then in this new model, after obtaining a Bachelor of Science, students will study a graduate course in education/pedagogy to earn a Master of Education or Master of Teaching. The advantage of the consecutive model is that it provides learners with a solid foundation of scientific knowledge to help teachers deepen their understanding of the subject as well as the knowledge of educational science to apply effectively throughout teaching process, while creating an "open" input to the teaching profession. The limitation of this model is the lack of integration between the two blocks of basic scientific knowledge and professional pedagogy, especially at the early stage of the training process, which has a clear career orientation (Nguyen, 2011; Pham, 2013). If considering the market orientation, training teachers according to the consecutive model is more appropriate and effective. Therefore, this model is chosen in countries that train teachers in multidisciplinary

universities, or in countries where there are no universities of pedagogy but only education faculties in multidisciplinary universities.

In Vietnam, the consecutive model has been applied for nearly 20 years at the University of Education – Vietnam National University, Hanoi. Students study the basic program or graduate with general knowledge and continue to train teachers in the last two years. This model has advantages: (i) increased competitiveness, career choice of students; (ii) select good students with research ability as lecturers with deep competence in basic research; (iii) small investment, moderate scale, effective (Nguyen, 2011; Nguyen, 2013). However, this model has some limitations such as: (i) there is no pedagogical and professional environment in the first two years; (ii) fluctuating and difficult recruitment sources; and (iii) there is a tendency that good students do not want to study pedagogy (Nguyen, 2011).

In summary, the teacher education models of some countries in the world, although there are different points, they all have the following common points: (1) the majority of teachers are trained in multidisciplinary universities; (2) teacher education is carried out in two models (parallel model and consecutive model); (3) special attention is paid to professional skills development activities at schools; and (4) educational accreditation always ensures that teacher education institutions exist and train teachers of high quality.

3. Research methods

In this study, we conducted a survey in more than 20 pedagogical universities and colleges in Vietnam. A questionnaire designed to examine the restructuring of the teacher education system in the context of radical and comprehensive education renovation. Additionally, more than 20 workshops and academic forums also organized to collect lecturers' and specialists' ideas about some measures to restructure the teacher education system at some localities. In-depth interviews with 60 educational experts also recorded and analyzed to evaluate the training capacity of teacher education institutions. As a result, some recommendations in this study based on these experts' points of view. The study also examined international experiences from developed countries to suggest a teacher education model for Vietnam as well as the solutions for restructuring the teacher education system for the whole country.

The collection of information for the research was, firstly, based on desk research in which information collected from the participating universities and colleges through reviewing their curriculum design products and other documents related to the teacher education development process. Secondly, seven groups of stakeholders at each university/college interviewed using structured questionnaires, specially designed for each group. In total, 108 lecturers from these universities and colleges participated in the interview and survey. The group consisted of 8 university rectors, 8 faculty leaders, 8 heads from academic affairs, 31 lecturers, and 38 leaders of new curriculum development teams. The opinions of the interviewees were synthesized by taking notes, analyzed and presented by the authors in the issues discussed in this paper.

4. Results
4.1. The network of teacher education institutions

This research has conducted a survey and analysis of data in the last five years of 111 teacher education institutions across the country (see Table 1) to assess the status of network planning, which focuses on analyzing the arrangement, the distribution, organization, resources, scale, and quality of these institutions in the educational system. From there, we propose some orientations of restructuring and reorganizing network of teacher education institutions and establishing some key pedagogical universities in Vietnam.

Thus, it can see that the distribution of pedagogical universities and teacher education institutions is to spread geographically, evenly in all regions, regions, and localities throughout the country. The Red River Delta and southeast regions clustered with many pedagogical universities, other regions, and provinces, and cities, which have training institutions for teachers and general education managers at the university level. However, the connection between universities/institutions is not good or not forming a unified network of teacher education institutions and has effective coordination in training and retraining courses. Therefore, it is necessary to develop a network of teacher education institutions with a specific mechanism of responsibility and coordination of each university/institution, focusing on the role of the focal

point responsible for connecting and developing training and retraining courses of some "leading" pedagogical universities. These leading universities play very important role in supporting other teacher education institutions in the economic region (Pham, Nguyen, 2020a).

Table 1. Number of pedagogical universities and teacher education institutions by economic regions of Vietnam

Economic regions	Total number of teacher education institutions			
	Pedagogical University	Comprehensive University	Pedagogical College	Comprehensive College
Northeast (including 7 provinces)	1	2	4	3
Northwest (including 7 provinces)	0	2	4	4
Red River Delta (including 11 provinces/cities)	6	12	6	2
North Central (including 5 provinces)	1	5	2	2
South Central (including 11 provinces/cities)	2	13	4	2
Southeast (including 9 provinces/cities)	3	7	6	3
Mekong River Delta (including 13 provinces/cities)	1	7	4	3
In total	**14**	**48**	**30**	**19**

The expansion of training scale, lack of control of quality assurance factors (facilities, professional qualifications of lecturers, student/faculty ratio, entry-level, training programs) and lack of forecasts of supply and demand, leading to the fact that many graduates cannot find jobs, which means that the relationship between supply and demand for human resources in education. This also led to the consequence that some provinces dissolved the pedagogical college (for instance, Ca Mau Pedagogical College); others must merge into some key universities (Ha Nam Pedagogical College becomes a campus of Hanoi National University of Education, DakLak Pedagogical College becomes a campus of Ho Chi Minh City University of Education, Ha Giang Pedagogical College becomes a campus of Thai Nguyen University) or change the form of training to multidisciplinary colleges (19 colleges); many other colleges turn to perform the main task of linking teacher training and retraining regularly.

The above inadequacies have been happening in the entire pedagogical training system of Vietnam. Therefore, it is necessary to have a specific mechanism, both ensuring the autonomy of the university, and building uniform and strict mechanisms to ensure that the teachers' resources meet the requirements of the national education development in the current context (Pham, 2013; Pham, Nguyen, 2020a). Teacher education institutions should be managed and oriented according to the national strategy. If teachers are trained in a closed model, it is necessary to set up the order mechanism of the State, local needs, or other stakeholders. However, the current recruitment of teachers in localities is undertaken by the Department of the Interior Office under the current regulations on decentralization while the Department of Education and Training is the unit that manages and employs teachers. Therefore, choosing the method of training teachers according to the ordering mechanism should consider adjusting policies at a macro level.

According to the teacher education demand survey data, the demand for recruiting new primary teachers is not so urgent every year, the next phase focuses on preschool and primary teachers. Statistics show that the number of preschool pupils increases by 7.22 % per year on average, the number of primary pupils increases by 1.3 % per year on average, the number of junior and senior pupils increases slowly 0.5-1.0%, even some years have not increased (Pham, Nguyen, 2020b). With that requirement, it is possible to arrange and reorganize key pedagogical

universities and accompany them with their satellites (pedagogical colleges) in the direction of forming from seven to eight key pedagogical universities. The capacity of these universities can train 15,000 to 20,000 students each year, meeting the requirements for educational human resources. Other teacher education institutions, pedagogical colleges have become campuses and practice institutions, acting as a decisive impact factor to develop local education.

The annual enrollment statistics show that high school students tend to enroll in teacher education courses at the key pedagogical universities in the region and the number of students moving to the surrounding area is very small (see Table 2).

Table 2. Number of students enrolled from more than 30 provinces/cities nationwide of Thai Nguyen University of Education period 2015–2019

Provinces	Year 2015	Year 2016	Year 2017	Year 2018	Year 2019
Ha Giang	63	75	48	14	9
Tuyen Quang	38	58	14	8	15
Lang Son	132	118	35	24	18
Bac Kan	68	102	71	53	46
Thai Nguyen	616	623	368	238	189
Quang Ninh	142	163	64	52	21
Bac Giang	253	324	138	98	74
Other provinces	486	589	312	202	102
Total	**1.798**	**2.052**	**1.050**	**689**	**474**

According to Table 2, among students from more than 30 provinces/cities across the country enrolled in teacher education course of Thai Nguyen University of Education, students in Thai Nguyen Province accounting for 34.5 % in 2018 and 39.8 % in 2019. The number of students from Bac Giang province – the province adjacent to Thai Nguyen province also accounts for 14.2 % in 2018 and 15.6 % in 2019. The number of students from nearly 30 other provinces accounted for only 29.3 % in 2018 and 21.5 % in 2019. Thus, the tendency to study in pedagogical universities in the area of students is very high. Therefore, this is the basis for selecting in each region a key pedagogical university to train high-quality human resources for the region, which is relatively reasonable and suitable to the labor market demand of each province, especially some remote areas were lacking lots of teachers.

4.2. Capacity of teacher education institutions
Pedagogical universities

Many pedagogical universities have not yet paid attention to invest in training quality assurance conditions to meet enrollment scale, lecturers have not yet met the qualification requirements, scattered financial resources investment and lacking forecasts of labor market demand. Therefore, the teacher education system was overlapping in one region. Many localities that open the teacher education major still rely on their inherent capacity and experience, leading to the areas where there is a shortage of teachers who do not train (for example, teachers of music, fine arts, natural sciences, psychological counseling school, teachers who teach specialized subjects in English, etc.) (Pham, Nguyen, 2020a). These are the reasons why the quality of training is limited and does not meet the requirements of renovating the general education curriculum. The problem of lacking local teachers is also reflected in the regional structure, especially in remote areas, borders areas, islands. Thus, it can be said that the disciplines of teacher training develop unbalanced, excessive teachers in some subjects. Therefore, the current teacher training does not meet the needs of the labor market, especially the labor market in Southeast Asian countries. The situation is difficult to control in the training scale, there is a mismatch between the demand and supply of human resources in the field of teacher education in localities. Moreover, teacher education institutions have not yet made up the network in the whole country, there is no connection, support, consistency, and decentralization. The institutions operate independently, each of them is still only the components arranged next to each other in teacher education sector.

Regarding teaching staff, pedagogical universities currently have 4,481 lecturers; of which 352 professors and associate professors (7.9 %); 942 hold doctorate degrees (21 %), and 2,731 hold master degrees (60.9 %). At the pedagogical colleges, there are 3,498 lecturers; of which 60 hold doctor degree (6.7 %) and 1,913 hold master degree (54.7 %). The professional qualifications of pedagogical lecturers between training disciplines and universities across regions are uneven. The limited capacity of foreign languages, information technologies, educational scientific research, curriculum development, and teaching methods innovation, especially the lack of leading experts and key qualified lecturers. Most professors, associate professors, and doctors are concentrated in key pedagogical universities in big cities, especially in Hanoi Capital and Ho Chi Minh City. The local teacher education institutions and pedagogical colleges lack leading lecturers with high qualifications but an average of low and medium-level lecturers.

Table 3. Number of lecturers of some key pedagogical universities

Pedagogical Universities	Numbers of lecturers	Prof.	Assoc. Prof.	PhD	MSc, MEd	BSc, BA	The ratio of lecturers with a PhD degree
HNUE	749	17	167	235	324	6	**55.9 %**
HPU2	346	0	22	89	194	41	**32.1 %**
TNUE-TNU	338	1	42	121	167	7	**48.5 %**
Vinh Uni.	1,078	4	72	245	505	252	**29.8 %**
UED-UDN	245	1	7	79	153	5	**35.5 %**
HUE-HU	258	2	43	83	118	12	**49.6 %**
HCMUE	509	1	29	137	287	55	**32.8 %**
Can Tho Uni.	1,130	7	114	247	700	62	**32.6 %**

Note: HNUE (Hanoi National University of Education), HPU2 (Hanoi Pedagogical University 2), TNUE-TNU (Thai Nguyen University of Education), Vinh Uni. (Vinh University), UED-UDN (Da Nang University of Education), HUE-HU (Hue University of Education), HCMUE (Ho Chi Minh City University of Education), Can Tho Uni. (Can Tho University), Prof. (Professor), Assoc.Prof. (Associate Professor), PhD (Doctor of Philosophy), MSc (Master of Science), Med (Master of Education), BSc (Bachelor of Science), BA (Bachelor of Arts).

Table 3 shows that key pedagogical universities have highly qualified teaching staff with lecturers hold doctorate degree account for over 30 % (Vinh University is approximately 30 %), of which pedagogical universities have a high percentage of lecturers with doctoral degrees such as Hanoi National University of Education (55.9 %), Hue University of Education (49.6 %), Thai Nguyen University of Education (48.5 %). It is forecasted that by 2025 these key pedagogical universities will reach the proportion of lecturers with doctoral degrees of approximately 60 %. With favorable conditions for highly qualified staff, some key pedagogical universities may be focused to invest in regional and international integration, towards building high-quality training programs that based on international standards.

Table 4 below also shows that, for key pedagogical universities with highly qualified teaching staff, the number of postgraduate training (masters and graduate students) has been increased, for example, Hanoi National University of Education with postgraduate training accounts for 12.7 % of the total students, Thai Nguyen University of Education accounts for 8.3 %, Ho Chi Minh City University of Education accounts for 4.7 %. However, this figure is still modest compared to China's key pedagogical universities (postgraduate training accounts for 70 %). This is because key pedagogical universities in Vietnam still participate in joint training with localities (in-service teacher training courses), for example, Hanoi National University of Education with in-service training accounts for 54.9 %, Vinh University accounts for 46.1 %, Ho Chi Minh City University of Education accounts for 45.9 %, Can Tho University accounts for 26.3 %.

Table 4. Number of students in some key pedagogical universities
(data for the school year 2018–2019)

Pedagogical Universities	Students	In-service teachers	Master students	PhD students	Total
HNUE	8,563	14,546	2,720	644	**26,473**
HPU2	7,470	7,729	500	10	**15,709**
TNUE-TNU	6,220	3,662	773	123	**10,778**
Vinh Uni.	19,095	17,433	1,218	47	**37,793**
UED-UDN	6,661	2,140	169	2	**8,972**
HUE-HU	3,837	2,180	928	71	**7,016**
HCMUE	12,998	12,084	1,076	152	**26,310**
Can Tho Uni.	32,502	12,769	2,799	385	**48,965**

Regarding teacher education courses, the key pedagogical universities account for a relatively low proportion of students compared to the local multidisciplinary universities and pedagogical colleges. This fact occurred for many years when the Ministry of Education and Training has not yet controlled the target of teacher training, which led to some institutions cannot forecast the number of pedagogical students for training each year satisfying the needs of the localities.

Table 5. Admission quota of some key pedagogical universities (from 2017 to 2019)

Pedagogical Universities	The year 2017		The year 2018		The year 2019		The ratio of total pedagogical students of the whole country (percent)		
	Pedagogical students	Ratio (%)	Pedagogical students	Ratio (%)	Pedagogical students	Ratio (%)	2017	2018	2019
HNUE	1,925	80.7	1,610	63	1,415	48.8	2.9	3.1	4.0
HPU2	1,230	71.1	1,224	51	1,500	62.5	1.9	2.4	2.6
TNUE-TNU	1,480	100	900	100	900	100	2.3	1.7	4.3
Vinh Uni.	810	16.2	650	13	750	16.7	1.2	1.3	2.1
UED-UDN	555	26.6	444	17.6	434	17.4	0.8	0.9	1.2
HUE-HU	1,550	98.1	1,288	97.7	1,345	97.8	2.4	2.5	3.8
HCMUE	1,840	55.8	1,430	37.2	1,400	37.0	2.8	2.8	4.0
Can Tho Uni.	640	6.7	512	6.8	520	5.7	0.9	1.0	1.5
Total of the whole country	10,030	15.4	8,058	15.5	8,264	23.6	15.4	15.5	23.6

Table 5 above shows that the total enrollment quota for key pedagogical universities only accounted for 15.4 % in 2017, 15.5 % in 2018, and 23.6 % in 2019, after having an allocation of targets of the Ministry of Education and Training. A total number of pedagogical student indicators in the country, of which some key pedagogical universities such as Hanoi National University of Education and Ho Chi Minh City University of Education only accounts for 8.0 % of the total target. This implies that most of the remaining enrollment quota belongs to multidisciplinary

universities, pedagogical colleges, and multidisciplinary colleges with teacher education major. Therefore, it is necessary to reorganize the network of these institutions towards merging or reducing enrollment quotas to focus resources for key pedagogical universities to improve the quality of teacher education. Table 5 also shows that the trend of non-pedagogical training of some traditional pedagogical universities, for example, in 2019, the target of non-pedagogical training of Hanoi National University of Education accounted for 51.2 %, Ho Chi Minh City University of Education accounts for 63 %, Vinh University accounts for 83.3 %, Da Nang University of Education accounts for 82.6 %, which means that these universities develop lots of non-pedagogical training programs. Therefore, in the process of arranging pedagogical universities, it is also necessary to review teacher education programs of these universities in the network.

Pedagogical colleges

There are currently 30 pedagogical colleges and 19 multidisciplinary colleges with teacher education major. However, the capacity of these colleges is still limited, the size of enrollment is problematic due the need to upgrade the training standard for primary school teachers. Therefore, at present, lecturers of pedagogical colleges face many difficulties due to the reduced training scale, the lack of teaching hours, the association of training with universities also decreased, many lecturers were transferred to teaching at high schools in the region. Some pedagogical colleges establish more schools and practice experience centers for high school students and organize other educational services in order to create jobs for lecturers. However, the number of lecturers who have no teaching hours is still high. Faced with this situation, many lecturers at high-level pedagogical colleges have transferred their jobs, leading to a shortage of staff at these colleges. This is a factor that makes it difficult for the merger or conversion into a branch or satellite of the key pedagogical universities.

Table 6. Number of lecturers and training scale of some pedagogical colleges
(data for the school year 2018–2019)

Pedagogical Colleges	Number of lecturers	Number of students	PhD	MEd, MSc	BSc, BA	Others	The ratio of lecturers with PhD degree (%)
Dien Bien	141	726	6	93	42	0	**4.3**
Thai Nguyen	120	988	7	82	12	4	**5.8**
Ha Giang	104	562	3	70	31	0	**2.9**
Lang Son	149	573	2	84	63	0	**1.3**
Bac Ninh	115	2,060	6	89	14	6	**5.2**
Thai Binh	184	1,196	8	128	48	0	**4.3**
Nghe An	168	2,378	10	145	13	0	**5.9**
Quang Tri	92	387	11	65	16	0	**11.9**
Thua Thien Hue	129	1,812	5	103	21	0	**3.9**
Gia Lai	119	1,441	4	81	34	0	**3.4**
Dak Lak	109	150	3	77	28	1	**2.8**
Da Lat	94	1,371	4	69	21	0	**4.3**
Tay Ninh	86	615	3	53	30	0	**3.5**
Ba Ria – Vung Tau	82	1,234	12	56	14	0	**14.6**
Kien Giang	117	1,012	6	56	36	19	**5.1**
Soc Trang	73	855	5	51	17	0	**6.8**
Vinh Long	42	729	0	22	20	0	**0**

Pedagogical Colleges	Number of lecturers	Number of students	PhD	MEd, MSc	BSc, BA	Others	The ratio of lecturers with PhD degree (%)
Long An	59	1,020	02	37	20	0	**3.4**
Ho Chi Minh City	98	2,033	08	69	21	0	**8.2**

Table 6 shows that the percentage of lecturers with doctoral degrees in pedagogical colleges is not high, mainly from 2 % to 5 %, the highest index of the Quang Tri Pedagogical College is 14,6 %. The enrollment scale has rapidly decreased, in which there are colleges with the number of pedagogical students equivalent to high school students in the region. For example, in the school year 2018–2019, Dak Lak Pedagogical College can enroll only 150 students, Quang Tri Pedagogical College enrolls 387 students, Ha Giang Pedagogical College enrolls only 573 students. Therefore, it is very difficult for these pedagogical colleges to transfer to multidisciplinary colleges or become a multidisciplinary university.

4.3. Restructuring the teacher education system
The restructuring of the teacher education system of the whole country is urgent and based on consideration of economic, cultural, historical factors and especially the need for teacher education by regional territory and locality. In particular, the restructuring of pedagogical universities and colleges must be associated with the needs of number of teachers in each locality following the requirements of the curriculum. In the new general education system, the state assigns enrollment quotas to teacher education institutions to ensure pedagogical quality standards. The restructuring must be overcoming the overlap, spread, inefficiencies of the current teacher education system, maximizing the available resources of each establishment to form an effective teacher education network. It is very important to invest on setting up some key pedagogical universities with the role of leading the system and converting some pedagogical colleges into branches of key pedagogical universities or provincial multidisciplinary universities. Besides, the restructuring implementation must be appropriate, inherited, and feasible roadmap so that teacher education establishments have time to reorganize and work out plans to settle policies towards laborers after the rearrangement in strict compliance with regulations and to ensure employees' rights.

The restructuring pedagogical universities/colleges and the establishment of some key pedagogical universities are based on the following main principles. Firstly, encouraging voluntarily the pedagogical colleges to merge into key pedagogical universities in order to improve the quality and efficiency of their operations. Secondly, assessing the quality assurance conditions of pedagogical colleges according to standards and regulations. If these colleges do not assign training targets for the training disciplines or do not meet the requirements of teacher education quality standards, they must have a specific roadmap to plan for merger, consolidation, or dissolution. In this study, we suggest three ways for restructuring pedagogical colleges. The first option for pedagogical colleges is merging with local colleges to become a multidisciplinary college or merging with the pedagogy department, or a local pedagogical university. The second option is that pedagogical colleges become the branches or satellites of key pedagogical universities, incoordination in training preschool teachers, primary school teachers with university degrees, coordinating in regular training of teachers and educational management staff for the localities. The third option is to merge with the provincial continuing education centers to become a training, retraining center for teachers and educational managers for localities.

By 2025, the scale of teacher education will account for 10 % of the total newly recruited students of about 560,000. According to the population projections, by 2025 the population of Vietnam in the corresponding regions will be 12,822 – 13,014 million people in the North; the Red River Delta ranges from 22,268 – 22,564 million; North Central and Central coastal areas from 21,065 to 21,349 million people; Central Highlands from 6,232 – 6,333 million people; the Southeast region accounts for 18,114 – 18,351 million people and the Mekong Delta from

18,663 – 18,887 million people. The analysis of the current situation of teachers, the trend of population growth, and the number of students of different ages show that in the next 10 years Vietnam needs to add about 275,000 teachers at all levels from preschool to high school. Thus, on average, there are about 27,500 pedagogical students nationwide to be recruited every year (Pham, Nguyen, 2020a). The results of this statistical research, analysis, and forecast show that in recent years we have been massively recruiting and lacking control of the demand and quality of training, wasting the State budget. Specifically, according to the research results of Hanoi National University of Education and Ho Chi Minh City University of Education in 2016, the demand for teacher education of the whole country until 2026 is given in the following table (see Table 7):

Table 7. Demand for training teachers at all levels throughout the country till 2026

Economic regions	Number of teachers according to needs				Total
	Kindergarten	Primary schools	Lower secondary schools	Upper secondary schools	
Northeast	20,203	8,724	4,563	495	**33,985**
Northwest	23,885	8,201	10,823	1,041	**43,950**
Red River Delta	61,807	15,679	59,166	11,181	**147,833**
North Central	21,294	7,704	2,064	-1,268	**29,794**
South Central, Southeast and Mekong River Delta	167,880	194,421	115,436	96,617	**574,354**
Total of the whole country	**295,069**	**234,729**	**192,052**	**108,066**	**829,916**

Table 7 shows that the total number of teacher training needs of the next four years is 829,916 teachers at all levels. From 2022 to 2026, it is necessary to train about 103,740 teachers, of which about 36,000 preschool teachers, 29,000 elementary school teachers, 24,000 lower secondary school teachers, and 13,500 upper secondary school teachers are trained annually. Thus, with the need of 36,000 preschool teachers needing annual training, the mission of pedagogical colleges can still be sustained. Moreover, it is necessary to reduce the number of multidisciplinary universities with teacher education major, thereby focusing resources for six to eight key pedagogical universities to train teachers with enrollment targets of about 3,000 students per year, accounting for about 70 % of the target of university training for teacher education in the whole country. Therefore, key pedagogical universities are responsible for training the high quality teaching staff for the country. Provincial universities and pedagogical colleges will directly foster and re-train teachers in the area according to the general education program.

5. Discussion
The identification of key pedagogical universities is necessary in the context of higher education renovation. Zhu and Han (2006), Zhu and Fang (2011) also gave similar research results. The mission of these universities is to focus on postgraduate training and research. These universities should be under the Ministry of Education and Training and be given priority in making key investments to meet the mission requirements of each university. This strategy has been very effectively implemented by China when organizing and rearranging universities throughout the country. In this study, we also suggest that Vietnam can consider the planning of six to eight key pedagogical universities, stretching across regions of the country and based on the capacities of the universities. At the same time, the Government should encourage key pedagogical universities to become multidisciplinary universities and have a plan to merge pedagogical colleges into multidisciplinary colleges or merge into a university in the same locality.

Multidisciplinary universities provide training courses for both pedagogical and non-pedagogical students. These students, after graduating from any direction, can be a teacher if they are granted a practicing certificate. This certificate is set by the Ministry of Education and Training and consists of a written examination and an oral exam. It is proposed that pedagogical students of key pedagogical universities will be exempted from tuition fees and committed to work arrangements. If a graduate student does not fulfill his/her commitment as a lecturer, he/she may reimburse a training fee for changing to another career. Teacher education programs in Vietnam are currently developed by key pedagogical universities and the Ministry of Education and Training is responsible for promulgating standards for teacher education programs for all universities. Moreover, the Ministry of Education and Training of Vietnam promulgates standards for training programs, including teacher education programs. The purpose of promulgating program standards is to improve the quality of teacher education in the whole country, thereby gradually integrating internationally in the field of teacher education.

6. Conclusion

In summary, the situation of local pedagogical colleges in the current context is very difficult, requiring the education sector to renew the system of teacher education institutions to meet the requirements of society. It is necessary to study and forecast changes in the structure and training needs of future teachers. On that basis, restructure pedagogical universities and colleges accordingly. Moreover, teacher education in the current context should focus on streamlining and training quality instead of training with a large number of pedagogical students. Therefore, it is necessary to enhance the capacity of pedagogical universities to improve the quality of training and fostering teachers. It is a fundamental solution to ensure the quality of education as well as the successful implementation of the reform process of general education. In addition, it should be considered to the problem of planning the network of pedagogical universities in order to enhance the capacity of teacher education institutions, change teacher education policies, and promote international cooperation in teacher education.

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Math Anxiety: Its Characterization and Its Conceptual Model

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Abstract

Mathematical anxiety has been studied frequently over many years, so different scales have been developed for that purpose. The aim of this study is to assess the five-factor model of Muñoz and Mato (2007) within the context of a public school. Therefore, the scale designed by these authors, which consists of 24 items integrated in five dimensions, in a 5-point Likert format, is used. Hence, 200 Mexican high school students were surveyed from a non-probabilistic self-determination sample. The data gathered showed a Cronbach alpha score of 0.751, reflecting acceptable internal consistency and reliability. However, it showed kurtosis of 9.521, indicating the lack of normality. As a consequence, the Bootstrap technique was used for this study in addition to the exploratory factor analysis. The data were analyzed using the IBM Statistic SPSS 25 for descriptive analysis, and the AMOS 24 software was used to determine the validity of the model. The findings report that the results turn out to be different from those expected by the original authors of the scale since a significant model was obtained explaining math anxiety configured by a four-factor structure instead of a five-factor one. Given that these findings could be a consequence of the socio-cultural conditions of the students in the sample, further studies are recommended.

Keywords: Math anxiety, evaluation, temporality, numerical operations.

1. Introduction

Mathematics anxiety is still under continual analysis in several countries by many researchers. In this study, we focused on analyzing those aspects that explain math anxiety levels in students.

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The study of mathematics has led human beings to develop advances in different fields of knowledge. However, its learning implies a long road full of challenges and difficulties. In order to achieve this competence, theoretical knowledge must be transferred to practice, and therefore, the thoughts and feelings that are produced around this process continue to be of great interest since they are appreciated both positively and negatively. Among the negatives, the feeling of anxiety towards mathematics stands out, which develops in their learning.

Even though mathematics is introduced from the first years of study in primary education, generations continue to manifest irruption in their cognitive processes and associate this practice with discomfort, boredom, helplessness, frustration, anguish, stress, among other negative aspects that result in poor academic performance (Schultz, Heuchert, 1983; Wigfield, Meece, 1988; Hembree, 1990; Mato, 2006; Moreno-García et al., 2017). For this reason, it is necessary to understand how this phenomenon occurs and how it affects students in the different stages of their lives in which they absorb this knowledge. In this way, it has been identified in several studies that primary education is of great relevance to consolidate or lose any iota of confidence in mathematical skills, whose insecurities will come to light in the next stage of their education before reaching higher education (Betz, 1978; Tobías, 1980; Cockcroft, 1982; Frary, Ling, 1983; Karp, 1991; McLeod, 1993).

Due to the preceding, the following research question is posed, the objective and the hypothesis to be demonstrated: in the cultural context of a public school in the municipality of Veracruz, Mexico, does Muñoz's and Mato (2007) model of anxiety towards mathematics can be explained by the five factors on anxiety before the evaluation in Mathematics; anxiety about temporality; anxiety before understanding problems; anxiety about numbers and mathematical operations; and anxiety about mathematical situations in real life? Therefore, the study's objective is to verify that, in the cultural context of a public school, the model of Muñoz and Mato (2007) can be explained by the five factors they propose.

The hypothesis to be tested is: In the cultural context of a public school, the Muñoz and Mato model (2007) can be explained by the five factors on evaluation anxiety in Mathematics; anxiety about temporality; anxiety before understanding problems; anxiety about numbers and mathematical operations; and anxiety about mathematical situations in real life.

2. Literature review

The OECD Program for International Student Assessment (PISA) has evaluated the knowledge of compulsory formal education since 2000 in three areas of knowledge: reading, mathematics, and science. The results on mathematical knowledge indicate that Mexicans students fail to demonstrate proficiency in basic activities and to achieve level 2 (OECD, 2012).

Furthermore, even though two cycles of that evaluation have been carried out with a specific focus on the mathematical area, and whose time intervals were significant for the results to reflect a positive change, they continue to be far from going better. On the other hand, the Center for Research in Public Policy (IMCO, 2021) has reported that the current contingency for COVID-19 generated a delay in the development of student learning, equivalent to two years of schooling. Therefore, it would be interesting to know how the current population responds to the PISA test corresponding to 2021 that is expected to be carried out in 2022 when students are more present in the classrooms.

Anxiety is a feeling that produces the desire to avoid it, hence reducing in mathematics, to those interested, the possibility of entering professional careers related to this area. In addition, various studies associate the presence of this feeling to school failure and poor performance in the student community (Schultz, Heuchert 1983; Marsh, 1988; Puteh, 2002; Mato, 2006; Immordino-Yang, Damasio, 2007; Swars, Daane, Giesen, 2010). Additionally, anxiety towards mathematics has for some years now presented substantial differences in terms of gender in the different stages of study (Ernest, 1976; Hilton, 1980; Tobías, 1980; Shibley et al., 1990). Furthermore, anxiety towards mathematics has been widely studied since the concept took shape in the middle of the 20th century (Gough, 1954), finding a clear relationship with the original concept of anxiety since it is characterized by somatic and cognitive factors given as a result of an aversive stimulus (American Psychiatric Association, 2013). Specifically, for anxiety towards mathematics, the meaning of anxiety is transferred to the specific rejection stimulus that occurs when facing a situation related to said subject.

So it is not surprising that over the years, a series of scales have been developed on the subject that has attempted to measure the phenomenon with two, three, and even five dimensions that explain the influence of anxiety towards mathematics in aspects related to assessment, number operations, and mathematical learning, among other components (Richardson, Suinn, 1972; Rounds, Hendel, 1980; Plake, Parker, 1982; Resnick et al., 1982; Alexander, Cobb, 1984; Suinn et al., 1988; Alexander, Martray, 1989; Brown, Gray, 1992; Kazelskis, Reeves, 2002; Hopko et al., 2003; Muñoz, Mato, 2007; Nuñez-Peña et al., 2013).

Therefore, at present, the phenomenon of anxiety towards mathematics has been consolidated as a multidimensional construct that is closely related to the negative cognitive/affective attitudes that are formed in the face of this matter (Fennema, Sherman, 1976; Frary, Ling, 1983; Wigfield, Meece, 1988). In addition, it highlights the relevance of the evaluation of mathematics, as the most important dimension to give an explanation to this type of anxiety (Muñoz, Mato, 2007; Zeidner, 2007; García-Santillán et al., 2014; García-Santillán et al., 2015; Moreno-García, Larracilla-Salazar, 2016; García-Santillán et al., 2017; Larracilla-Salazar et al., 2019).

Likewise, the demographic aspects of the population studied should be considered due to the existence of evidence that opposes the fact that evaluation is the most crucial dimension (García-Santillán et al., 2016). Finally, emphasis is also placed on differentiating the evaluation process from the application of an exam, that is, separating what pertains to the type of evaluative process used and the exam to evaluate knowledge since this also implies a different symbolic load in the students to identify what the detonation of anxiety towards mathematics itself would be implying (Larracilla-Salazar et al. 2019; Soneira, Mato, 2020).

3. Method and procedure

This non-experimental design study is approached from the hypothetical deductive paradigm. For this, a quantitative approach, the statistical methodology of structural equations (SEM), was used, which adopts a confirmatory approach with "causal" processes that generate observations on multiple variables (Bentler, 1988). In this idea, Byrne (2010) states that the hypothesized model in this methodology is statistically tested in simultaneous analysis of all the variables to determine to what extent it is consistent with the data (p. 27). If the goodness of fit is adequate, the model is defined by the relationships between postulated variables; if it is inappropriate, the viability of such relationships is rejected.

In addition, the Bootstrap Technique was used, which allows the researcher to create multiple sub samples of an original database. The importance of this action is that the parameter distributions relative to each of these generated samples can then be examined. The bootstrapping sampling distribution is concrete and allows the comparison of parametric values on repeated samples that have been drawn (with replacement) from the original sample.

3.1. Population and sample

The study was carried out in mid-2021, and the information was obtained in the third quarter of that year. The type of sampling is non-probabilistic by self-determination since it was considered to apply the sample for convenience to the groups of the first and second grades of high school, which were previously agreed with the campus authorities and the research group. The sample size consisted of 200 students, who were duly enrolled in the school year, one of the inclusion criteria being that they were regular students to be able to participate in this study.

Of 200 participants, 50.5 % were male students, and 49.5 % were female. The age ranged between 13 and 16 years, with the highest concentration being 13 and 14 years (40.5 % and 43 % respectively). Most of the participants were in the first year (69 %), and the remaining 31% were in the second year.

3.2. Instrument

For data collection, the scale designed by Muñoz and Mato (2007) comprises questions about the participant's profile and 24 items on a five-point Likert scale ranging from 1 totally disagree to 5 totally agree.

The 24 items of the test are integrated into five dimensions or factors: anxiety before the evaluation in mathematics, anxiety about temporality, anxiety before understanding problems, anxiety about numbers and mathematical operations, anxiety about mathematical situations in real life.

Table 1 shows the factors of the scale and the items associated with each one. The conceptualization of each of the constructs is defined as follows according to Muñoz & Mato (2007):

- Anxiety about the evaluation: Feelings of anxiety when being evaluated; fear of exams and having to do math in public.
- Anxiety about temporality: It is related to the time left to take an exam or to take exercises done for class.
- Anxiety about understanding math problems: The student fears not understanding math problems.
- Anxiety about numbers and mathematical operations: The student manifests anxiety when doing exercises, operations, and when working with numbers.
- Anxiety about real-life mathematical situations: Having to face Mathematics in everyday life.

Table 1. Anxiety toward mathematics scale (factors)

Factor	Items
Anxiety toward evaluation (AE)	1, 2, 8, 10, 11, 14, 15, 18, 20, 22 and 23
Anxiety toward temporality (AT)	4, 6, 7 and 12
Anxiety toward understanding mathematical problems (ATUMPM)	5, 17 and 19
Anxiety toward numbers and mathematical operations (ATNMO)	3, 13 and 16
Anxiety toward real-life mathematical situations (ATRMS)	9, 21 and 24

3.3. Data collection and statistical analysis

The data were collected through a questionnaire and analyzed using the IBM Statistic SPSS 25 for descriptive analysis, and the AMOS 24 software was used to determine the validity of the model. The data gathered showed a Cronbach alpha score of 0.751, reflecting acceptable internal consistency and reliability.

4. Results

This section presents the results that contrast the proposed hypothesis, reported in two parts. The first one reports the results of the exploratory factor analysis based on the theoretical model of Muñoz and Mato (2007) on anxiety towards mathematics. The second part checks the model's validity through structural equations and the Bootstrap Technique.

4.1. Exploratory factor analysis

To validate the model proposed by Muñoz and Mato, in the context of high school students from a school in Veracruz, Mexico, exploratory factor analysis was carried out in order to define the factors that are highly correlated with each other, according to the perception of the students who participated in this study. Table 2 shows the results in four factors, each grouping the intercorrelated items, which are at the same time relatively independent of the remaining items.

The Bartlett test of Sphericity values are significant, p is less than 0.05, and the Kaiser-Meyer-Olkin Measure (.837), both tests they corroborate that the variables are not correlated. Of the 24 items proposed in the Muñoz and Mato (2007) scale, only 14 were estimated. The total variance (61 %) of the factors is greater than .500, which indicates that the model would be explained to 61 % by these variables.

4.2. Exploratory Factor Analysis with the Bootstrap Technique

It is important to note that the Bootstrap technique is used because the data from this research do not conform with normality. This fact was observed when evaluating the multivariate normality of the data, finding that the critical value of kurtosis was 9,521, while according to Byrne (2010), a value greater than 5 indicates that the data does not behave normally. Hence,

bootstrapping was used to test the hypothesis that the model extracted from Muñoz and Mato (2007) fits the data. Figure 1 depicts the model.

Table 2. Factorial weight, commonalities and variance

| Variables | Component | | | | Commonalities |
	A2	A3	A4	A5	
item5	.801				.700
item6	.771				.628
item7	.749				.659
item3	.621				.659
item2		.814			.728
item1		.780			.673
item11		.693			.620
item22			.726		.649
item14			.720		.643
item20			.693		.554
item23			.683		.566
item9				.771	.608
item21				.691	.491
item24				.621	.569
Eigenvalues	4.535	1.772	1.259	1.032	
% Variance	18.181	15.729		15.611	11.894
% Total variance			61.415		

* A5 (Anxiety toward real-life mathematical situations), A4 (Anxiety toward evaluation of the mathematical problems), A3 (Anxiety toward evaluation of the test), A2 (Anxiety about temporality)
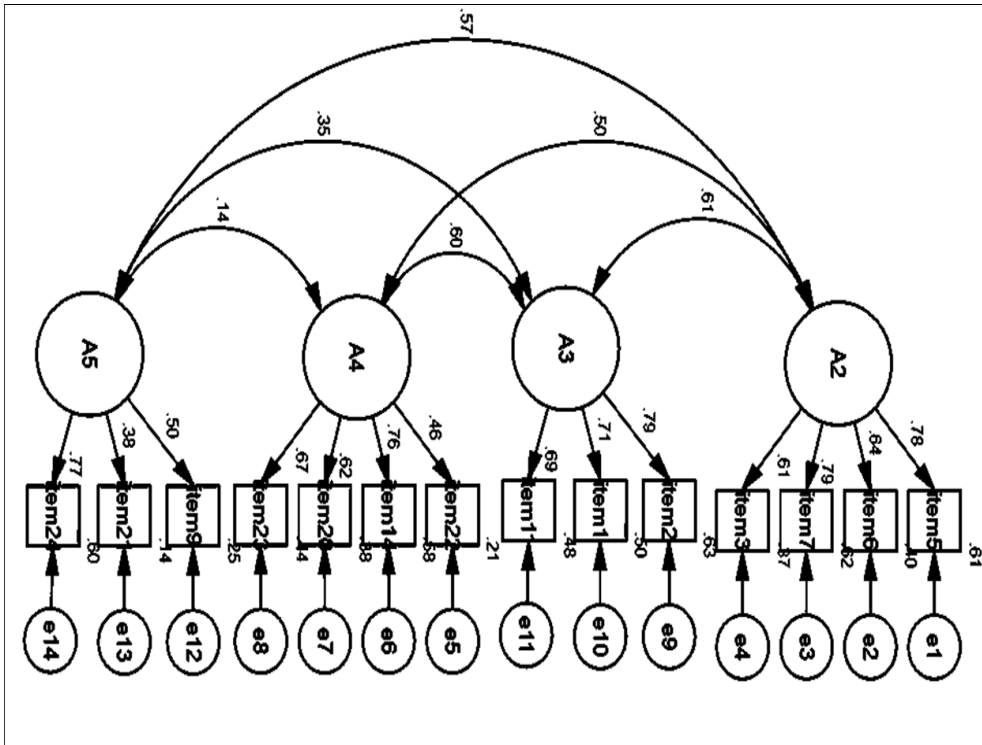
* A5 (Anxiety toward real-life mathematical situations), A4 (Anxiety toward evaluation of the mathematical problems), A3 (Anxiety toward evaluation of the test), A2 (Anxiety about temporality)

Fig. 1. Adjusted model of anxiety toward mathematics

If the data is assumed to behave normally, the χ^2 values of the model are: $\chi^2 = 91.974$ with 71 degrees of freedom and a probability of 0.48, which is less than 0.50, indicating that the null hypothesis and that the model data do not fit the data would be rejected. However, since the data is not normal when doing a Bootstrap ML and the Bollen-Stine Bootstrap with a sample of 2000, the values provided by this test yield a value of p = .389, which shows that the model is correct since the value of *p* is greater than 0.05.

		`|--------------------`
	37.616	`|*`
	46.505	`|*`
	55.395	`|***`
	64.284	`|**********`
	73.173	`|**************`
	82.062	`|*******************`
	90.952	`|********************`
N = 2000	99.841	`|*************`
Mean = 88.614	108.730	`|*********`
S. e. = .413	117.619	`|*****`
	126.508	`|**`
	135.398	`|**`
	144.287	`|*`
	153.176	`|*`
	162.065	`|*`
		`|--------------------`
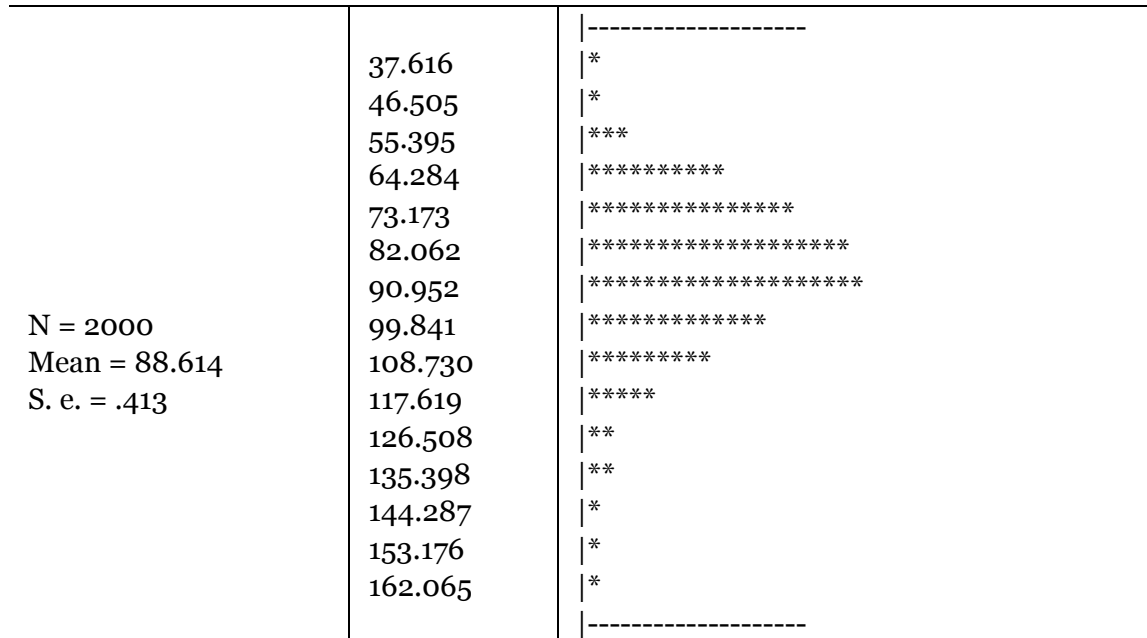
Fig. 2. The Bollen-Stine Bootstrap

Figure 2 shows the mean χ^2 value and the general shape of the distribution of the χ^2 values in the 2000 samples. An expected χ^2 value of 88,614.

The χ^2 mean of the bootstrap samples serves as the critical χ^2 value, which allows comparison to the obtained χ^2 of 91.974. When the χ^2 obtained is compared with 88.614, the p-value associated with that hypothesis test is .389 and, therefore, is statistically significant (see Table 3).

Table 3. χ^2 value for the sample

Model	NPAR	CMIN	*df*	*p*
Sample data	34	91.974	71	.048
Bootstrap	34	88.614	71	.389

To corroborate the statistical significance of the coefficients and their values, Table 3 shows the coefficients, which are also statistically significant, as shown in Table 4.

Table 4. Coefficients

Items	Factor	Estimate	SE	SE	SE-SE	Mean	Bias	SE-Bias
item5	A2	1		0	0	1	0	0
item6	A2	0.784	0.09	0.091	0.001	0.78	-0.005	0.002
item7	A2	0.993	0.1	0.067	0.001	0.993	0.001	0.001
item3	A2	0.79	0.1	0.096	0.002	0.787	-0.003	0.002
item22	A4	1		0	0	1	0	0
item14	A4	1.72	0.3	0.347	0.005	1.763	0.044	0.008

item20	A4	1.407	0.27	0.269	0.004	1.437	0.03	0.006
item23	A4	1.488	0.27	0.319	0.005	1.523	0.035	0.007
item2	A3	1		0	0	1	0	0
item1	A3	0.91	0.1	0.087	0.001	0.91	0	0.002
item11	A3	0.889	0.1	0.118	0.002	0.898	0.009	0.003
item9	A5	1		0	0	1	0	0
item21	A5	0.766	0.2	0.21	0.003	0.778	0.011	0.005
item24	A5	1.617	0.35	0.635	0.01	1.741	0.124	0.014

In Table 4, the first and second columns show the estimated values of the data and their standard error (SE), the third (SE) shows standard errors of the sample bootstrap, the fourth (SE-SE) provides an approximate standard error for the estimation of the standard error bootstrap to each other, and the fifth column (Mean) represents the estimate of the average parameter. The column labeled BIAS shows the difference between the original estimate and the mean of the estimates in the starter samples.

If the mean estimate through Bootstrap is greater than the original estimate, then BIAS will be a positive value (Arbuckle, 2016). It is observed that there are two negative values, denoting that the estimate of the mean of the original data is greater than that of the data generated with Bootstrap. Table 5 shows the values that refer to the hypothesis tests. They are performed according to the upper and lower limits (Byrne, 2010). When observing the values of the parameters, they can be evaluated individually, according to the upper and lower limits. If the values between these limits do not include zero, there is no significant difference between the original data and that generated by Bootstrap.

Table 5. Values for hypothesis testing

Parameter			Estimate	Lower	Upper	*p*
item5	<---	A2	1.000	1.000	1.000	...
item6	<---	A2	.784	.610	.968	.001
item7	<---	A2	.993	.863	1.133	.001
item3	<---	A2	.790	.603	.987	.001
item22	<---	A4	1.000	1.000	1.000	...
item14	<---	A4	1.720	1.231	2.594	.001
item20	<---	A4	1.407	1.016	2.082	.001
item23	<---	A4	1.488	.980	2.247	.001
item2	<---	A3	1.000	1.000	1.000	...
item1	<---	A3	.910	.747	1.091	.001
item11	<---	A3	.889	.674	1.133	.001
item9	<---	A5	1.000	1.000	1.000	...
item21	<---	A5	.766	.379	1.229	.001
item24	<---	A5	1.617	1.039	3.215	.001

5. Discussion

From the results obtained from the parameters of the four-factor confirmatory model, it is now possible to answer if the five factors can explain the Anxiety towards mathematics model of Muñoz and Mato (2007) in a population of high school students. The scale used to obtain the data from the study population is made up of the 24 items grouped into the five factors described in Table 1 and the data from the profile of the respondents. The five factors of the scale were reported in the investigations carried out by Muñoz and Mato (2007) in Spanish students.

Regarding the result of this study, it turns out to be different from the one proposed by the original authors of the scale since a significant model was obtained (.389) configured by a four-factor structure, as shown in Table 6.

Table 6. Adjusted model of anxiety towards mathematics

Temporality and understanding mathematical problems	Anxiety toward evaluation (AE) Prior to exam	Anxiety toward evaluation (AE) In the exam and after	Anxiety toward real-life mathematical situations (ATRMS)
5.- I feel nervous when I listen to how other classmates solve a math problem 6.- I get nervous when I know that in the next course I will still have math classes 7.- I feel nervous when I think about the math test that I have next week 3.- I get nervous when I open the math book and find a page full of problems	2.- I feel nervous when I get the math test questions 1.- I get nervous when I think about the math test the day before 11.- The math exams make me nervous	22.- I feel nervous when we get a problem and a partner finishes it before me 14.- I feel nervous having to explain a math problem to the teacher 20.- I am nervous to receive the final (exam) math grades 23.- I feel nervous when I have to explain a problem in math class	9.- I feel nervous when I check the purchase ticket after paying 21.- I feel nervous when I want to find out the change in the store 24.- I feel nervous when I start doing my homework

The first factor (5, 6, 7, 3) includes indicators that initially corresponded to anxiety about temporality, anxiety about understanding mathematical problems, and anxiety about numbers and mathematical operations. A similar case is of the second factor (2, 1, 11), where three indicators corresponding to the evaluation are grouped, which could be interpreted as anxiety prior to the evaluation. The third factor (22, 14, 20, 23) groups indicators of anxiety toward the evaluation, which can be classified as the anxiety that the student suffers when evaluated. Hence, according to this result, two factors inherent to the evaluation would be obtained. Finally, the fourth factor fully corresponds with the original model by Mato and Muñoz (2007).

The bootstrap technique was used in the item selection process to estimate the standard error of the statistics used to obtain the appropriate items. The results show two negative items, indicating that the original data's mean value is greater than the one generated by bootstrapping. Nevertheless, according to the upper and lower limits of each of the items, it can be observed that their contribution is significant since the values reported in Table 5, as no item has zero included.

The population participating in this study is similar to the population of the study that gave rise to the scale; that is, in both cases, secondary school students were evaluated. Therefore, the only difference is the context in which the studies were carried out.

The scale has been used to study different populations whose results have not always corresponded with the original reference model. For example, the work of García-Santillán, Moreno-García and Hernández-Utrera (2014) evaluated the five-factor model in an EFA with extracted principal components under the criterion of eigenvalues greater than 1, where the obtaining of a single factor is reported, as well as the anxiety dimension to the evaluation with the greatest commonality.

A similar case is the work of Moreno-García, García-Santillán and Cristóbal-Hernández (2014), which reported a single factor in their results, as well as the evaluation factor, as a factor with the highest commonality value. In another study, using a structural equations model, the five-factor model was validated in García-Santillán, Santana-Villegas, Téllez-Mora and Moreno-García

(2015), where anxiety towards real-life situations was the variable with the highest weight showed, followed by anxiety towards numbers and math operations.

Anxiety towards the evaluation seems to be the variable that has shown the highest commonality in studies conducted in Latin contexts, specifically in the states of Oaxaca and Veracruz, both in Mexico (García-Santillán et al., 2015; Moreno-García, Larracilla-Salazar, 2016; García-Santillán et al., 2016).

Singular behavior of a student population that was reported in the work of García-Santillán, Mato-Vázquez, Muñoz-Cantero and Rodríguez-Ortega (2016). Their study surveyed students from an upper secondary level educational institution in both shifts: evening and morning. The result shows that the highest level of anxiety presented by the students of both shifts is similar in relation to the evaluation, followed by anxiety towards numbers and mathematical operations. In the remaining three factors, they showed differences. In contrast, the morning shift presents greater anxiety towards understanding mathematical problems, temporality, and mathematical situations in real life. The evening shift reports anxiety toward temporality, mathematical situations in real life, and understanding mathematical problems.

In the study of A. García-Santillán, R.V. García-Cabrera, V.S. Molchanova and V. García-Cabrera (2018), carry out an analysis with the Varimax rotation, grouping the 24 indicators to each of their dimensions of the original scale, to determine the behavior in medical students. The rotated component matrix yielded five factors, the anxiety component towards mathematics in real-life situations, the one that showed the most significant weight, followed by anxiety toward the evaluation and toward the understanding of mathematical problems. Different the result reported by García-Santillán, Mato-Vázquez, Escalera-Chávez and Moreno-García, (2016) where anxiety towards evaluation showed the highest factorial weight followed by temporality, understanding of mathematical problems, toward numbers and mathematical operations and also toward math situations in real-life.

Recently, Soneira and Mato (2020) reclassified the original scale of 24 items to 19 due to the confirmatory analysis where five items presented low commonality. Considering that the original scale was validated with students with an average age of 12 years, compared with the population of engineering students in which they focused their study, there is a difference in personal maturity between both populations. The result of the study showed the formation of two factors: anxiety towards evaluation and anxiety towards numbers and mathematical operations.

6. Conclusion

With the results of this study and the discussion made from the results reported by other works using the scale of Muñoz and Mato, it can be concluded that the original scale has favored the understanding of the phenomenon of anxiety toward mathematics from different perspectives, depending on the populations studied and the context in which these studies were carried out.

In addition, it should be noted that the characteristics of the data matrix will define the direction of the analysis since, in the absence of multivariate normality, different measurement techniques can be developed that do not require this theoretical criterion.

7. Study limitations

The formation of the sample is often a limitation because it focuses on a specific population within a particular institution, as it was in this case, which only surveyed first and second-year students of a public institution high school.

In addition, the effort and scope were limited by the lack of economic resources to expand the sample to a greater number of students and a greater number of educational institutions in the public and private sectors. Also, the restrictions derived from confinement due to the Covid-19 pandemic imposed some limitations.

8. Future research

It is suggested to continue with confirmatory studies covering the broadest possible range of students and institutions from the public and private sectors.

It also seems convenient to develop quasi-experimental studies where a control group and a treatment group can be evaluated, gathering data before and after applying an exam with mathematical problems, and finally using a scale for measuring anxiety toward mathematics.

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Influence of Competitive Activity on the Development of Self-Realization Among School Students: in Case of Kazakhstan

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Abstract

The article examines the problems of social self-realization of modern school students of Kazakhstan in competitive activity. Based on the conducted scientific studies, the authors determine the important role of competitions in the process of school students' socialization. The article presents the most important criteria of adolescents' level of self-realization in competition activity such as self-esteem adequacy, creativity, self-organization, teamwork, and stress resistance, as well as the results of studying the level of development of such paired personality traits as sociability/insularity and friendliness/aggressiveness developing in school students in competitive activities. The authors emphasize the high degree of risk of any contests as the participants experience worry, fear, and stress. In this research paper, it is formulated that when overcoming the fear of competition, is important for a child to freely express his emotions. The article presents a comparative analysis of studies of the level of socialization in school students conducted in the years 2003, 2013, 2019, and 2021. Authors substantiate that competition is a relevant form of developing social personality traits in school teenagers in modern society. It is necessary to create certain pedagogical conditions when preparing and holding a competition and ensure pedagogical assistance and support to minimize the possible risks. It is important for modern pedagogics to study and account for childhood and adolescent fear, as well as psychological and pedagogical risks of carrying out competitions for school students.

The purpose of the research work is a comparative assessment of the current state and trends in the development of competitive games in the secondary education system of Kazakhstan based on the world example.

Keywords: school competitions, school students, education of Kazakhstan, self-realization, olympiads.

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1. Introduction

The modern world differs greatly from previous eras. The process of globalization has destroyed the borders between States and people in different parts of the world and paved the way for the creation of a society based on open space. These changes have created conditions for new streams of information to enter people's lives, complicated ways of filtering it. This problem is becoming increasingly relevant in relation to school teenagers. It is clear that their mental abilities are not ready to perceive and processing of various news. This psychological feature undoubtedly contributes to the development of signs of stress and maladaptation in school students.

Any stressful situations, if they are not prevented, lead to fears, which do not allow the pupil to develop further in the chosen activity. Therefore, fears transfer from natural to social fears in the process of teenagers' personality formation, and social fears have their peak at 15 years of age (Keldibekova, 2016). There is a pedagogical necessity to find ways to overcome these fears by adolescents. One of the ways to solve the problem may be competitive activities.

The system of professional and pre-professional festivals and competitions is well developed in Kazakhstan, Uzbekistan and the world in general. Today, competitions for teenagers are well represented: a) Competitions at various levels, from school to international. For example, 234 Kazakhstani school students received vouchers for the World Gymnasium-2022, which will be held in May in French Normandy.; b) In March 2018, school students from Kazakhstan took part in the international school festival "Sport-Art-Intelligence", which was held in Novosibirsk, Russian Federation. At the festival, school students from 28 countries competed in 8 types of art and determined the winners. The main types of art at the event were drawing, guitar playing, and national dances. c) Professional competitions, which include subject olympiads, information technology (IT) skills competitions, and competitions in any kind of art (involving further vocational training).

Each type of competition implies its own peculiarities and it is difficult to compare these events. However, despite the differences, all competitions have common features related to the development of certain personal qualities that contribute to social self-realization as shown in Table 1. Despite the relevance of competition development, there is a lack of pedagogical research in this regard today. The authors hypothesized that competition activity is an actual form of development of social qualities of a student's personality in modern society. When preparing and holding a competition, it is necessary to create certain pedagogical conditions, as well as to provide pedagogical assistance and support to reduce possible risks.

Table 1. The process of social self-realization of school students in competitive activity

Social self-realization			
The processes of overcoming fears	Personal self-realization	Professional self-realization	Risks
Search for individuality	Search for originality, uniqueness	Search for a career; Development of professional skills	Frustration refusal to fight further
Search for a relationship with others	Development of abilities and talents	Search for ways to communicate in the profession; Development of speaking up for oneself	Uncontrolled aggression; Contempt of others shutting themselves down
Acceptance of one's appearance	Search for ways to communicate in person	Understanding of the importance of professional knowledge and skills, rather than looks	Appearance experimentation; Disengagement from society; Insecurity
Fear of loneliness	Search for one's individuality in dress	Development of skills in making	Self-obsession, envy, contempt of others or

	and behavior	compromises; Development of skills of persuasion	oneself
Inability to self-identifylater in life	Development of the abilityto relate individuality to social requirements	Development of skills in weighing arguments; Development of decision-making skills	Apathy and infantilization about their lives; Fear of doing the wrong thing

At the beginning of research on the development of theoretical and practical methods of subject competitions and national games in the education system of Kazakhstan, a special place is occupied by the work of B.T. Totenaev (Totenaev, 1976). This researcher assessed the types of Olympiads and circles organized in the secondary education system on the basis of national games, determined the directions of their activities. In the research work of M.T. Tanikeev (Tanikeev, 1998), important thoughts are expressed about the role of folk games in the intellectual consciousness of schoolchildren. The article by S. Uzakbaeva, A. Aitpaeva (Uzakbaeva, Aitpaeva, 2000) provides a detailed analysis of the nature and course of development of the forms of competitions in the educational system. The recommendations on reducing the relevance of a number of educational competitions and the need to change to another form were also clarified.

The publication by A.N. Abushev (Abushev, 2006) provides practical examples of the use of national games during classes and features of students' perception. From the author's point of view, the introduction of ethnopedagogy approaches in school educational competitions simplifies the process of perception of school students. Great importance in the monograph by A.K. Kusainov (Kusainov, 2013) was pedagogical approaches to assessing the stages of psychological development and tolerance of students at competitions in the education system.

The publications of Kyrgyz researcher A.O. Keldibekova (Keldibekova, 2016; Keldibekova, 2017) revealed a socio-pedagogical analysis of the experience of organizing Olympiads in the education system of Kyrgyzstan and the role of competitive tasks in improving the competence of school students. According to the concepts and formats of competitions and Olympiads in the field of education, Kazakhstani educational organizations and specialists rely on Russian and foreign experience. Russian authors have implemented several scientific publications in this direction. For example, the article by N.N. Senicheva, D.V. Sokolova (Senicheva, Sokolova, 2015) made a qualitative analysis of how to reveal the talent of schoolchildren through competitions and olympiads. According to the authors, any student is considered capable of winning competitions and Olympiads if teachers can properly help overcome the psychological barrier. The works of Zh.V. Fomina (Fomina, 2013; Fomina, 2015) assess the ways of developing creative and research abilities of students in the subject competitions of the school system.

In the scientific work of E.B. Zelenina (Zelenina, 2018), attention is paid to the mechanisms of teaching and upbringing of a gifted child. According to the researcher, psychological and family factors play an important role in maintaining the stable academic performance of a gifted child.

The object of G.V. Leonidov's research (Leonidova, 2019) is aimed at developing comprehensive methods for the development of young people's talents in the field of science and education. He offers a general model for the introduction of technological innovations in the methodological work of teaching and upbringing in kindergarten, school.

An important role in this topic is played by Western research works, the purpose of which is to reveal the creativity and free thinking of students through the use of various contests and contests in the field of education. For example, in the work of the American researcher H. Gardner (2011) conducted an examination of the features of intellectual thinking of school students students. The practical significance of this work is of great importance.

In the study of S. Imberman (Imberman, 2011), a generalizing description of the achievements of charter schools in the world was developed. The article by P. Bukowski, M. Kobus (Bukowski, Kobus, 2018) provides a socio-psychological analysis of the problems of school activities in a number of EU states. The criteria of competition and academic performance in public schools are considered as the main problem in the research work. The authors conducted a

comparative analysis and summed up the quality of education in public and private schools. In the research paper P. McMillan (McMillan, 2015) provides a systematic analysis of the level of motivation and mutual competition of students and the productivity of teachers of public schools.

In the publication W.B. MacLeod, M. Urquiola (MacLeod, Urquiola, 2015) were discussed aspects of the impact of competition in American schools on public reputation.

2. Materials and methods

The research was carried out based on an activity approach using the following research methods:

a) Theoretical methods consisted of analysis, deduction and induction, synthesis, systematization, synthesis of scientific research materials. It clarified the role of competitive activity in the process of social self-realization of adolescents;

b) Empirical methods were used to survey focus groups at the Department of Psychology and Pedagogy of Al-Farabi Kazakh National University in Almaty, Republic of Kazakhstan (103 respondents). It was conducted online in accordance with the restrictions associated with the spread of the new coronavirus COVID-19, in order to identify the impact of competitive activities at school on their further social self-realization. To achieve the final result based on the data accumulated in the framework of empirical research, methods of analysis, classification and systematization were widely used. For example, we relied on the classification method to identify differences of opinion among 103 students of pedagogical specialties of the University (KazNU) undergoing pedagogical practice in schools in Almaty. The method of systematization was used to divide the collected data into separate groups depending on their mutual similarity. A method of pedagogical observation based on school No. 38 in Almaty, Kazakhstan (56 respondents) to measure indicators of criteria for self-determination and self-realization. The method of pedagogical observation was used to determine the overall indicator of the level of activity of schoolchildren in competitive games in various subjects. For example, most of the students at physical culture competitions showed high activity, and in natural science lessons reveal ed a low overall indicator.

The data was processed using SPSS software. The study was conducted in the following framework:

a) the chronological scope of the study was conducted from August to December 2021;

b) The territorial scope of the study included the city of Almaty, Kazakhstan (Al-Farabi University, School No. 38).

3. Results

In modern society, there are socio-economic, psychological, spiritual and cultural forms of fear. There is no doubt that children's fears develop naturally. Meanwhile, researchers believe that social forms of fear begin to appear in school students (Fomina, 2015). Thus, as noted by E.B. Zelenina (Zelenina, 2018) and other researchers (Elkonin, 1989; Melik-Pashaev, 2009), in the process of development of adolescents' personalities, fears change from the natural to social ones and the peak of social fears falls at the age of 15. The researchers can identify the following types of adolescent fears: a) The fear of not finding one's individuality; b) The fear of being misunderstood and judged by others; c) The fear of physical unattractiveness; d) The fear of loneliness (based on the three previous fears); e) The fear of impossibility of self-realization in social life (Abushev, 2006).

There is a pedagogical need for the search for ways in which adolescents can overcome these fears. One of the ways of solving this problem can be competitive activity. Although a contest is a competition aimed at determining the best contestants and the best works, for school students it is, first of all, a long process of preparation, searching for original ideas, character development, persistence in achieving the goal, and only after that the joy of victory (or the bitterness of defeat). Contest as a pedagogical technique is controversial since aside from positive outcomes it can negatively influence the process of development of a school students' personality through high nervous tension, misfortunes, failures, and the destruction of hopes leading to an increase in adolescent fears (Olesina, Mazanov, 2020). For this reason, pedagogical support for young contestants has special importance in competitive activity.

The competitive activity contributes to overcoming the fears associated in adolescents with doubts in determining their individuality by allowing them to reveal the best personal qualities and

sometimes discover new abilities. The very process of competition becomes important for professional self-realization as it can either support a student's choice and provide an impetus for further development in this direction or demonstrate a person's unsuccessfulness in a certain type of activity (Tanikeev, 1998). In this case, there are risks of a student experiencing serious disappointment and refusing to fight further when not getting the desired victory. Participation in a contest is an opportunity for the development of personal and professional communication skills and the ability to carry out constructive dialogue and develop and defend one's viewpoint. A contest introduces the intensity of adolescent relationships to the process of constructing communication and contributes to the development of respect for another person, tolerance of different points of view, and the ability to remain oneself in the situation of competition and fight against one's competitors. In this case, the risks reside in the manifestation of uncontrolled aggression, contempt for other participants in the event, isolation, and even depressive conditions requiring medical attention.

Contests for school students are currently highly widespread: there are contests at different levels from school to international; there are creative contests where children can show their talents in different areas of art (at the amateur level); there are professional contests including subject Olympiads, skill contests (for example, in IT), contests in a particular sphere of art (involving further professional training). Each type of contest involves its specific characteristics making it difficult to compare these activities (Antonova, Belousova, 2011). However, despite the differences, all contests have some common features related to the development of certain personality traits contributing to social self-realization as show in Table 2.

Table 2. The process of school students' social self-realization in competitive activity

Social self-realization			
The processes of overcoming fears	Personal self-realization	Professional self-realization	Risks
the search for individuality	the search for originality, uniqueness the development of abilities and talents	professional search the development of professional skills	disappointment refusal to fight any further
accepting one's appearance	the search for one's individuality in clothing and behavior the development of the ability to balance individuality with the social requirements	understanding of the importance of professional knowledge and skills rather than appearance	experiments with one's appearance alienation from communication self-consciousness
accepting one's appearance	the search for one's individuality in clothing and behavior the development of the ability to balance individuality with the social requirements	understanding of the importance of professional knowledge and skills rather than appearance	experiments with one's appearance alienation from communication self-consciousness
the fear of loneliness	self-affirmation the development of self-sufficiency	the development of the ability to compromise the development of the ability to convince others	arrogance envy contempt of others or oneself
the impossibility of future self-identification	the development of the ability to take responsibility for one's actions	the development of the ability to weight arguments the development of the decision-making ability	apathy and infantilism concerning one's life the fear of doing the wrong thing

When not prevented, all risks can lead to the emergence of fears hindering a student's further

development in the chosen activity. One of the fears significant for adolescents is the fear of loneliness, rejection by peers, not being needed. This fear can be easily overcome by participation in collective competitions (for example, theatrical or choral), however, in individual championships, the problem can be exacerbated even further. Participation in the preparation for a team contest becomes an important stage in overcoming the fear of loneliness as this process involves communicating a lot with different people and performances require a sense of communion and mutual support (Keldibekova, 2017). Individual competitions are more difficult in terms of the fear of loneliness, therefore, a teacher necessarily had to work with such adolescents paying attention both to the negative impact of failures on students' further self-identification and the difficulties in accepting victory. The main risks of this situation include arrogance, envy, and contempt for others or oneself.

Adolescent fears can eventually lead to a student's fear of not being able to find one's place in society and profession. Participation in contests develops such skills as the ability to take responsibility for one's actions, weigh one's actions, words, and arguments, and the ability to make decisions. The fear of responsibility for one's actions can develop into complete apathy and infantilism regarding one's life or into the fear of doing the wrong thing (Amankeldi, 2014).

To determine the effect of competitive activity in school on further social socialization, we conducted focus groups among the students of a pedagogical university. The participants were recruited from among the undergraduate students from the Department of Pedagogy and Psychology at Al-Farabi University in Almaty. When evaluating their participation or non-participation in contests during their school years and its effect on further self- realization, the students reported the following: "Thanks to the reading contest I overcame my stiffness and fear of public speaking", "Only after participating I realized that I knew quite a lot", "While preparing for a cultural history contest I realized that I wanted to do cultural studies", "During a dancing contest I found a friend who helped me overcome my worry. We are still friends". It was found that 93 % of students participated in contests during their school years; 68 % of students believe they developed their personal qualities such as communicability, the ability to work in a team, control their emotions, face defeat and disappointment with dignity; 14 % of them answered that they did get an impetus for professional activity. One of the important qualities highlighted by young people was the ability to accept criticism, independently analyze one's failures, and continue developing in the chosen direction (20 %).

Nevertheless, 32 % of the respondents reported negative experiences of competitive activity (uncontrollable fear, despair, fear of failure) the consequence of which they cannot overcome to this day. Since the survey respondents were recruited from among future culturologists and teachers, they were asked what they could do for students participating in contests once they started working in educational organizations. Having evaluated their experience of competitive activity, the students provided the following answers: "Students need an example to follow", "It is necessary to show them how to behave. Maybe do some training or games", "It is necessary to teach them to hear others, not be offended but make the right conclusions", "Children can be shown that they do not have to listen to name-calling, it is only objective criticism that matters", "It is necessary to show students that irritation and dissatisfaction with oneself are qualities that help to improve".

Interestingly, the students' suggestions on preparing a contest and overcoming adolescents' fears can be correlated with the studies by S. Lukashova, E. Omirzhanov, E. Chongarov in identity as a result of self-identification (Lukashova et al., 2020). The researchers propose a model of identity as a dynamic self-actualization process including the following components: a) Identification with significant people in the process of which a person accepts the values of others which helps them overcome difficulties; b) The interiorization of various opinions in the course of which different viewpoints are accepted and reflected on one's self; c) The crisis of identity generating the process of self-identification and self-realization, changes in one's views, or the substantiation of one's position.

The study demonstrates the importance of school students' participation in contests for their social self-realization. However, it should be borne in mind that competitive activity can cause psychological trauma to an adolescent, therefore, it is necessary to provide pedagogical assistance for students in the process of preparing for a contest and participating in it, as well as during the period of post-competition emotional recession. The forms of pedagogical assistance can be divided

into three types: a) The positive example of significant adults or peers (identification); b) Teaching the correct perception of different opinions (interiorization); c) Encouragement of productive analysis of one's activities generating personal change (identity crisis). Effective pedagogical assistance can reduce the negative effects and then competition will become a meaningful form of school students' self-identification. In this study, researchers identified the main criteria of adolescents' self-realization level in competitive activity (self-esteem adequacy, creativity, self-organization, teamwork, and stress resistance).

Self-esteem is understood in psychology as a personal formation directly participating in the regulation of a person's behavior. As an independent evaluation of a personality, its main element is forming under the direct influence of the personality itself and reflecting the peculiarities of its inner world (Salamuddin, Harun, 2010). The parameters used as the standard for self-esteem are such as value orientations, personal ideals, the level of pretensions. The requirements imposed by the team (Uzakbayeva, Aitpayeva, 2010). Based on certain indicators, psychologists distinguish normal, high, and low self-esteem (Imberman, 2011). Creativity to which we also attribute the sense of humor and resourcefulness is considered in psychology. It is as a relatively independent factor of giftedness manifesting in the general ability. It is important to create and characterizing the personality as a whole and showing itself in different spheres of activity (Leonidova, 2019).

Self-organization is an integrative criterion combining a range of personality traits: responsibility, focus, commitment, motivation, confidence, self-organization. The self-regulation ability in all its manifestations: punctuality, concentration, clarity of expression, and, to some extent, the structure of thought. Teamwork is also a combined criterion including such personal characteristics as empathy, patience, tolerance, acceptance, and collectivity, the ability to work in a team. Overall, this criterion largely signifies the ability to work with others. Stress resistance is a combined criterion referring to the ability to "take a hit" and overcome difficulties (Kim, Troitsky, 2016).

Teachers were providing psychological assistance to adolescents participating in contests through managing risks and helping the adolescents overcome their fears. The objectives of the organization of pedagogical assistance lied in ensuring development through specially developed trainings for the following components of personality: a) The development of students' intellectual abilities, creative thinking, and creative activity skills necessary for participation in festival and competition events; b) Teaching students how to work in a team, the development of communicative abilities, positive attitude, and kindness in relationships; c) Providing the opportunity to gain experience in participating in various artistic and intellectual contests and festivals of different levels; d) The formation of self-presentation and self- actualization skills; e) The ability to protect oneself from the effects of negative factors, to regulate one's irritation, aggressiveness.

The main method used to measure the indicators of the self-identification and self-realization level criteria was the pedagogical observation. Throughout 2021, teachers were not only working with students but also measuring the personal changes taking place during the competitive activities and affecting the self-realization of each adolescent. In generalized form, the dynamics of the level of adolescents' self- identification and self-realization shows an increase in positive qualities after participation in several competitions, moreover, the personal qualities contributing to effective socialization also developed in school students with low competition results as shown in Figure 1. The figure shows that the indicators of adequacy, self-organization, and stress resistance increased significantly in the course of participation in contests which supports the need for pedagogical assistance for adolescents in contests. Students noted that the support of teachers helped them cope with the disappointment of defeat, overcome worry, cope with fear, and even rejoice in the success of the opponent. Pedagogical supervision was carried out with the participation of 40 school students of grades 8 a, b of school No. 38 in Almaty. The observation period consisted of two stages: 1) August and September 2021; 2) October-December 2021. During the control, an intergroup intellectual game on geography and history was organized with the division of school students into 4 groups. During the games, the focus was on the students' ability to withstand stress.

Fig. 1. The dynamics of self-identification and self-realization in school students

The results shown in the figure above indicate that the ability of schoolchildren to stress tolerance is gradually developing in the learning process. Since experiments in August-September revealed stress resistance in only 12 school students out of 40 during high activity, the results of observations in October-December revealed stress resistance of more than 30 school students in various situations.

As the results of the study have shown, the role of various competitions as agents of socialization is being actualized today. These events contribute to the effective development of self-realization and self-presentation skills. The results of comparative research have also shown that self-realization is becoming most important in the attitudes of the younger generation. Thus, based on the comparative analysis of the monitoring conducted in 2021 (58 respondent), 2019 (49 respondent), and 2013 (45 respondent), the increase in the need for students to communicate with their peers in the real world was revealed. It was determined that modern teenagers prefer live communication with friends and relatives, this result increases relatively to previous years and contradicts the prevailing perception of virtual addiction of the younger generation, showing, if not the actual state, then the potential desire of teenagers to communicate with the significant representatives of society (Figure 2).
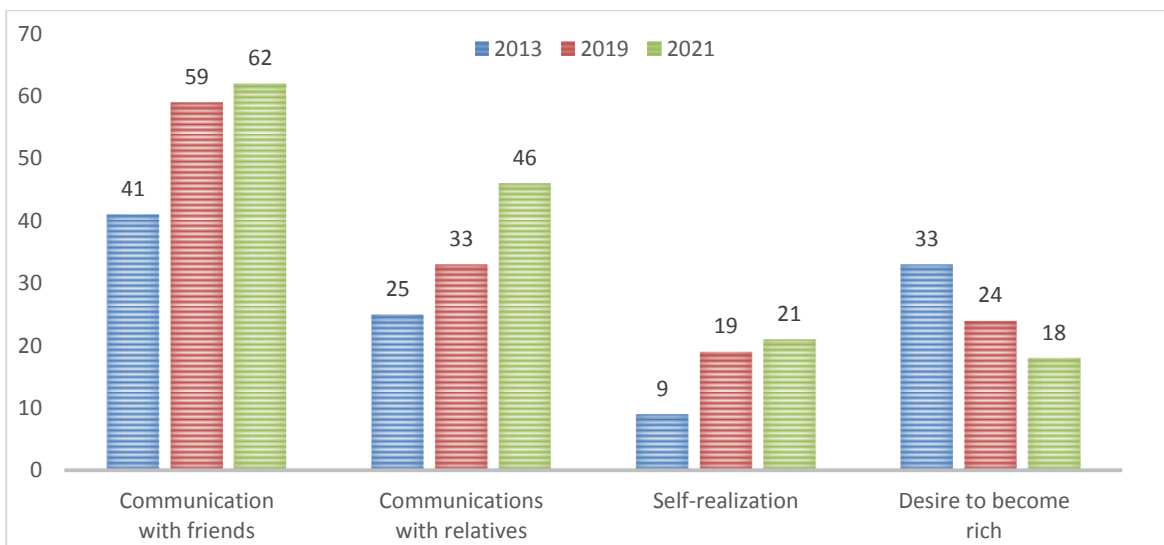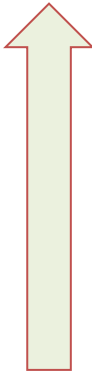

Fig. 2. Socio-cultural choices of modern school students (%)

The results of a survey conducted in 2013, 2019, 2021 among the 9th, 10th grades of school No.38 in Almaty, tried to find answers to four questions: the importance of communicating with friends, the importance of communicating with relatives, self-realization and the desire to get rich. The answers to these questions showed different levels in different years. If in 2013 the value of relationships with friends was low, then in 2021 it was of great importance (62 %). One of the changes in the 2021 survey from the survey of previous years was that there were fewer people who wanted to become rich (18 %). The 2021 survey showed that school students want good relationships with relatives and friends. According to the 2013 survey, we will be convinced of the low importance of self-realization (9 %).

Modern school students have an acute deficit in communication, so simple communication becomes an almost unattainable value today, which school students lack the knowledge and skills to realize (McMillan, 2005). School students believe that effective communication helps in social self-realization (83 %), but this particular quality of personality is underdeveloped in them. Table 3 shows the changes in the students' understanding of self-realization in society over the last 18 years (2003 and 2021).

Table 3. Changes in the understanding of self-realization as an aspect of socialization

Self-realization		
2003		2021
Professionalism to achieve economic prosperity communication to achieve mutual understanding in a team		Self-determination and self-presentation to realize one's own ideas
Strong-willed decision-making skills in relation to oneself and others		Communication to achieve personal goals in the profession
Ability to adapt to new situations		Forecasting and projecting professional activities based on goal-setting
Personal interests as a hobby		Professionalism to achieve personal goals and satisfy personal interests
		Development of personal skills for successful self-realization

4. Discussion

Social activity (self-realization) is a person's ability and readiness to carry out socially significant transformations in the world around them and themselves. An integral characteristic of an active personality is an active life position. This is expressed in a person's ideological integrity, consistency in defending their views, and responsibility for the decisions taken (Lareau, Weininger, 2008).

However, there are several risks and adolescent fears that educators need to consider in their work with students to make the socialization process effective and, indeed, lead to the self-realization of each individual. Previous researchers have proved that modern society, subject to the growth of uncontrolled technology, is characterized by high riskiness (Niyazova et al., 2022). Douglas writes that the concept of risk today has become a cultural construct located between "personal, subjective opinion and public material science" (Amankeldi, 2014). Scholars today do

not talk about the possibility of risk but about developing mechanisms for dealing with risk in all areas of human activity, including pedagogy. Pedagogical risk has become a natural component of the modern educational process. In this context, it should be noted that any competitions are very risky: a) Participants experience excitement; b) Fear; and c) Stress that can lead to serious consequences for the individual up to rejection of mass events, decreased competitiveness in studies and future professions and underdeveloped forms of communication.

Although competition is a contest aimed at singling out the best participants or the best work, for students, it is first of all a long process of preparation, searching for original ideas, character building, persistence in achieving the goal, and only then the joy of victory (or the bitterness of defeat). Competition as a pedagogical technique is quite contradictory. In addition to positive results, it can have a negative impact on the process of personal formation of a student such as high nervous tension, failures and setbacks, destruction of hopes, which lead to an increase in adolescent fears (Keldibekova, 2017). For this reason, the pedagogical support of young participants is of particular importance in competition activity.

Competitive activity helps to overcome the fear associated with the teenager's doubts about defining their individuality, allowing them to reveal the best qualities of their personality, and sometimes to identify new possibilities and abilities in themselves. For professional self-realization, the competition process itself becomes important; it can confirm a student's choice and give impetus for further development in this direction, or it can show the failure of a person in a particular area of activity. In this case, there are risks when a school student, not getting the desired victory, experiences serious disappointment and withdraws from further competition.

Participation in the competition is an opportunity to develop personal and professional communication skills, to build a constructive dialogue, and to develop and defend one's own point of view. The competition brings to the process of building communication a sharpness of adolescents' relationships and promotes respect for the other person, tolerance and acceptance of a different point of view, the ability to remain oneself in a situation of competition and struggle with rivals. The risks, in this case, are uncontrollable aggression, disdain for other participants in the event, shutting oneself down, up to depressive states requiring medical intervention (Kim, Troitskiy, 2016).

One significant fear for adolescents is the fear of loneliness, rejection by peers, of being unwanted. This fear can be easily overcome by participating in a group competition (e.g., theatre, choir), but in a personal competition, the problem can be exacerbated. Participating in preparations for a group competition is an important step in overcoming the fear of loneliness because in this process one has to communicate a lot with different people, and during the performances, a sense of community and mutual support is necessary. Individual competition is more difficult in terms of overcoming the fear of loneliness, so the educator should work with such teenagers, drawing attention both to the negative impact of failures on the further self- determination of school students and to the difficulties in accepting victory (Amankeldi, 2014). The main risks in this situation are arrogance, envy, and feelings of disdain for others or themselves.

Adolescent fears can result in a fear of not being able to determine one's place in society and the profession. Fear of responsibility for one's own actions can develop into complete apathy and infantilism towards one's life, and fear of doing the wrong thing. Participation in competitions develops skills such as the ability to take responsibility for one's actions, the ability to weigh one's actions, words, arguments, and the ability to make decisions.

It also should be noted that pedagogical science and the public are currently primarily concerned with the development of not hard skills, meaning professional skills but soft skills including personality components such as creativity, communicability, self-management, self-development, self-control, self- presentation, the ability to find ways out of difficult situations, the ability to analyze one's successes and failures, make conclusions, and change the trajectory of action when needed. In 2011, Harvard University, Stanford Research Institute, and Carnegie Melon Foundation conducted studies in large companies and found that soft skills make up from 75 % to 85 % of an employee's success (MacLeod, Urquiola, 2015).

Thus, only a person having soft skills, personal characteristics allowing to successfully interacting with the outside world, different people, and one's interests will be successful and demanded as a specialist in the modern world (Amankeldi, 2014). In the present, art festivals and contests for all interested have become an effective form of soft skills development. Such

contests accept works from children and young people wanting to express them in some type of creative activity but not having a goal of becoming a professional in this type of art. School students are very interested in such type of activity (Bukowski, Kobus, 2018). Festivals and contests help the younger generation develop the very skills that are difficult for modern students such as public speaking, presenting oneself or a group of participants, cooperation, creative development, and acceptance of the cultural diversity of society. It is no coincidence that today we are emphasizing the importance of emotional intelligence that allows a person to be flexible and be able to find their place in society (Martin, 1991).

The modern world provides children and youth with extensive opportunities for self-expression in various types of activities including creative work. Young people tend to have the desire to express their thoughts and feelings in their artwork, as well as to compare their successes with the achievements of other children and adolescents. Studying the problem of the influence of competition on the manifestation of students' creative activity and general cultural development, A.N. Abushev (Abushev, 2006) revealed that this type of activity contributes to the formation of strong will, artistry, and experience in performing skills. The natural need for creative self-realization is met today by a wide range of events any student can take part in.

Thus, the conducted study demonstrates the effectiveness of festivals and competitions as a form of self-realization of school students in the modern world. The participation in such activities contributes to the development of tolerance, acceptance of cultural diversity, rejection of xenophobia and chauvinism. It gains the ability to cooperate and solve tasks together with others, and readiness for constructive intercultural and interpersonal communication.

The prospects for further research could be to study and take into account children's and adolescents' fears, as well as psychological and pedagogical risks when conducting various competitions for school students. Despite the fact that the activity of school student's to participate in competitions and Olympiads is growing in Kazakhstan, there is a need to pay attention to the volume of its results at the international level.

5. Conclusion

Summing up the overall results of the research work, we will make sure that in 2013, 2021 compared with 2003 the direction of the development of the process of self-realization of students in the field of education has changed. This process also applies to members of society as a whole. We understand that in the early 2000s, the activities of educational programs in the field of secondary education were aimed at improving the effectiveness of group work. And after 2010, educational programs began to be organized in order to reveal the personal abilities and opportunities for self-realization of each individual student. In this regard, the volume of various subject and sports competitions has increased in the school system. Studies have shown that individual work of school students have intensified in Kazakhstan. But, as a result of this, the emergence of a lack of communication worries specialists.

The results of the study confirmed the hypothesis that competitive activity is an actual form of development of social qualities of a student's personality in modern society. When preparing and conducting competitive events, it is necessary to create certain pedagogical conditions, as well as provide pedagogical support to reduce possible risks among schoolchildren. The practical significance of the research lies in the fact that its results can be used in organizing and conducting various intellectual games in the educational system. Using the methodological recommendations set out in the chapter helps to avoid negative phenomena. It also contributes to achieving a high level of educational and developmental impact of the process of preparation and participation in the festival and competitive movement on children and youth.

6. Funding

7. Competing Interests

The authors declare that they have no competing interests.

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Features of Using Flash Cards as a Means for Developing Students' Verbal Creativity

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Abstract

Development of linguistic diversity, creative ideas in foreign language communication are key areas of international activity supported at the UN level. An important condition for effectiveness of any dialogue is the verbal creativity. Personal preparation for professional creative thinking, for overcoming verbal stereotypes takes place in professionally oriented communication. The authors suggest using interactive resources of flash cards in teaching when developing students' verbal creativity.

Methodology. Flash card learning is based on the Leitner method. Flash cards are also used for speech development (vocabulary, morphology, word formation, syntax, pronunciation), and psychological processes leading to new results (fluency, originality, flexibility). The author's testing includes blocks "Vocabulary", "Morphology", "Word formation", "Syntax", "Pronunciation", "Torrance Tests of Creative Thinking". The experimental study was carried out at Vyatka State University. 60 fist-year students of the training program "Psychology" (bachelor degree level) are involved. The Lexilize resource is used to create flash cards.

Results. Students study services for creating flash cards, use them to process new material, memorize and present concepts, word formation in a variety of contexts.

In conclusion the features of the presented version of using flash cards in education are described: combination with other means (mobile applications, simulators, infographics) and traditional forms of information transfer; interdisciplinary connections. The rules are

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formulated, implementation of which ensures effectiveness of using flash cards for development of verbal creativity.

Keywords: creativity, linguistic diversity, linguodidactics, creativity of speech, interactive service, Lexilize.

1. Introduction

The UN General Assembly proclaimed the period from 2022 to 2032 as the International Decade of Indigenous Languages. Firstly, this event is aimed at resource mobilization for their preservation, revival and popularization (UNESCO: Building peace…, 2022). Secondly, the proclamation of the "decade of the languages of the world" is one of the important outcome of UNESCO's work focused on intensification of the international cooperation and encouraging the dialogue of nations. Thirdly, it developed recommendations that regulate the way for countries to contribute to the development of the information environment for a deep analysis of modern problems and trends in development of world languages and for implementation of scientific research in the educational process.

Different international events take place to create new approaches to mastering intercultural communication as part of implementation of these recommendations. A case point is the training on formation of creative and innovative thinking skills was organized by the UNESCO Cluster Office in Almaty for the employees of the Youth Resource Centers (UNESCO. Alamaty, 2022). During the training they studied the concepts of creative thinking in the digital world, effective idea-generation techniques and non-standard problem solving using information technologies.

At the same time, creative thinking evaluation was implemented into the Programme for International Student Assessment (PISA) as one of the key components for the first time (Programme for…, 2022) in 2021. A special group in the study comprise "tasks for verbal self-expression".

One of the areas of work of the teacher-psychologist in the modern educational environment involves development of abilities to find the most accurate and effective speech means for effective communication with a person of any age, intellectual level, material and social status in the shortest possible time. In particular, the methodology for development of creative thinking in teaching should be based on the following principles: activity, individuality, consistency, phasing, cyclicity, psychological comfort, cooperation.

Formation of verbal creativity as "the ability to overcome verbal stereotypes at the final stage of mental synthesis and the breadth of the field of associations" is, according to E.V. Dudorova, S.V. Shumkova, one of the urgent tasks of the higher education system (Dudorova, Shumkova, 2018). Training of a highly qualified specialist in demand on the international labor market implies a focus on education of a graduate who does not only possess a system of special knowledge in academic disciplines, but is also able to transform the surrounding reality (Soboleva et al., 2021).

C. Malik, M. Mahmud, A. Anshari, K. Salija note that in the modern world of computer technology there are memorization programs based on the Leitner method (Malik et al., 2020). The features of new information resources must be taken into account when designing the educational environment based on digital technologies, when realizing the didactic potential of interactive tools.

Thus, there is an objective need for additional study of development of students' verbal creativity in the modern educational environment.

The research hypothesis is that using flash cards when teaching will provide additional conditions for development of students' verbal creativity.

1.2. Purposes and objectives of the study

The purpose of the study is determined by the need to use innovative software tools for development of students' verbal creativity as an important condition for preparation of a highly qualified specialist in demand on the international labor market.

Research objectives:

- to analyze the experience of using flash cards in teaching and foreign language training of future educational psychologists;

- to clarify the essence of the concepts of "flash card", "verbal component of creativity" in the digital educational environment of the university;

- to specify the didactic potential of flash cards for development of skills in demand in the international labor market;
- to describe the procedures and principles for measuring the levels of development of students' verbal creativity;
- to experimentally confirm effectiveness of the proposed educational and project activities for development of students' verbal creativity.

2. Relevance
2.1. Literature review
2.1.1. Analysis of Russian scientific and pedagogical literature

In accordance with the Federal State Educational Standard of Higher Education, as a result of mastering the bachelor's program the graduate should form general (general cultural, universal) and professional competences stated by the bachelor degree program (Prikaz Minobrnauki Rossii..., 2020). Universal competences are of the over-professional nature and do not depend on the training program. This group includes such competences as the ability: to critically analyze the available information; based on existing rules and restrictions to choose the best ways to solve problems; to productive social and intercultural interaction based on respect and tolerance; to self-management for purposes of personal and professional development.

Thus, one of the urgent tasks of the higher education system is to focus on preparation of graduates who do not only possess a system of special knowledge in academic disciplines, but is also able to create and transform the surrounding reality. A certain amount of knowledge turns out to be an insufficient factor for orientation in a rapidly changing world and success in the professional community. In this regard, B.E. Fishman discusses the reorientation of the process of education and upbringing "from the educated person to the creative person" (Fishman, 2019).

The skills and abilities listed above assume that the student has an active creative position, non-standard thinking, and a creative behavior. Such a specialist will be more in demand on the international labor market.

In domestic psychology many researchers consider questions of creativity. D.B. Bogoyavlenskaya introduced the concept of creativity as "intellectual activity, the ability to go beyond a given situation" (Bogoyavlenskaya, 2013). S.L. Rubinstein devoted his experimental work to the study of productive creative thinking. In the research the author considers creativity as creativity, creating something new, original, which, moreover, is included not only in the history of development of the creator, but in the history of development of science, art, etc.(Rubinstein, 2010).

Creativity as a feature of the person is complex in nature and it is a process and result of the person's development and, in our opinion, can be considered as a universal ability of the person that allows successfully navigating in changing conditions of life, productively and creatively transforming it.

According to N.V. Verkhorubova, the richness of speech and vocabulary is a manifestation of speech creativity (Verkhorubova, 2014). This ability of the person, according to E. Yu. Zavershneva, is considered as the ability to easily and freely argue, influence people and lead them (Zavershneva, 2013). T. A. Barysheva proves that development of speech creativity is an important condition for formation of creative, innovative thinking (Barysheva, 2020).

From the point of view of linguistics, verbal creativity is one of the components of the creativity of the linguistic personality, revealing the ability of the speaker to creatively use ready-made linguistic forms and meanings and update the repertoire in conditions of conscious deviation from the canonical forms of speech.

A.V. Shubin considers the verbal creativity as a form of the human verbal-cogitative activity, individual features of speech and an expression of the person's creative abilities through language and individual logical thinking (Shubin, Serpionova, 2007). S.A. Mednich says that the verbal creativity is the ability to overcome verbal stereotypes at the final stage of mental synthesis and the breadth of the field of associations (Mednich, 1969). Thus, the verbal creativity is the ability of the person to creative thinking, manifested in creation of a new original speech (verbal) product in any of its verbal forms (oral, written, prose, poetic, monologue, dialogue, etc.).

I.S. Zlobina et al. note that the practical mastery of a foreign language is one of the requirements for a highly qualified specialist of the new economy (Zlobina et al., 2020).

N.G. Egoshina proves that development of creativity in various forms is possible at all levels of teaching a foreign language, at all stages of the educational process (Egoshina, 2021). In her work she describes principles of designing a system of exercises, which then are used in English classes with students of the Faculty of Informatics and Computer Engineering. The significance of her work for the ongoing research lies in the fact that the system of exercises she proposes is aimed precisely at development of the figurative and verbal creativity, without using innovative software and due to specially selected speech exercises. N.G. Egoshina on the basis of the experimental data proves that speech (communicative) exercises provide great opportunities for development of the verbal creativity (Egoshina, 2021). According to her conclusions, if training exercises are intended for repeated variable repetition of foreign language grammatical or lexical forms, then the actual speech exercises are for formation and implementation of content in the foreign language form.

L.N. Danilova argues that digital technologies became an integral part of our lives, including such an area as the study of foreign languages (Danilova, 2021). Information technologies and digital tools in teaching foreign languages are becoming more and more significant and widely used in education all over the world, including in Russia. At the same time, digitalization is not the methodological approach, it is able to help implement existing methods and, if necessary, propose new activities within these methods. Modern information, communication and digital technologies make it possible to digitally combine text, graphic and video images, speech and musical accompaniment. Based on digital technologies, powerful innovative means of accumulating, presenting and transferring knowledge, as well as learning tools are being created.

G.R. Eremeeva and A.R. Baranova put forward and substantiate the assumption that availability of programs and applications for smartphones based on the interval repetition method contributes to the qualitative study of new information by their users (Eremeeva, Baranova, 2016).

So, we can reasonably conclude that creativity, the creative approach are highly demanded qualities of the modern specialist. They are part of the over-subject competences or the so-called "soft" skills, which are necessary for every professional to be successful. The academic discipline "Foreign language" has a great potential for development of these properties of the student's personality. The use of new technologies when studying at university allows to increase the level of demanded digital skills, communication skills. Additional conditions appear for improving the quality of processing new material, memorizing and presenting concepts, word formation in a variety of contexts.

2.1.2. Analysis of foreign literature

The Universal Declaration on Cultural Diversity, adopted by UNESCO, is aimed not only at protecting endangered languages, but also defines a range of activities that countries/states should implement (UNESCO Universal Declaration…, 2022):

- preservation of the linguistic heritage of mankind, promotion of the dissemination of creative ideas;
- encouragement of linguistic diversity, education of respect for the native language, popularization of the study of several languages from childhood;
- development of linguistic diversity in cyberspace and promotion of universal equal access through global networks to any information that is in the public domain.

R. Barac et al. argue that work in accordance with these areas should be started at the level of preschool education and continued at all stages of education (Barac et al., 2014), including in the practice of university teaching. N. Yemez, K. Dikilitaş conclude that the learning model in the modern multicultural world should involve formation of the creative personality capable of independent creative search for solving professional problems (Yemez, Dikilitaş, 2022).

During the analysis of the literature it was revealed that creativity as a property of the person is complex. It is a process and result of the person's development of individuality and, according to E. Bernabeu-Brotons, C. De-La-Peña, can be considered as a universal ability of the person, which allows to successfully navigate in changing conditions of life, productively and creatively transform it (Bernabeu-Brotons, De-La-Peña, 2021).

H. Wang studies the features of development and improvement of creative thinking in the study of a foreign language, namely the speech process (Wang, 2021). The author considers creative thinking through the unity of its development both in qualitatively-substantial and procedural directions.

L. Ortega-Martin et al. developed and presented the concept of "creativization" as a methodological and theoretical category in the process of learning a foreign language (Ortega-Martín et al., 2021). The concept of "creativization" covers conceptual ideas and basic approaches to enhance creative thinking.

A foreign language is a basic humanitarian subject which is studied at many levels of education, including at the stage of higher education. This, as N. Yemez, K. Dikilitaş substantiate, means that the teacher faces the task of developing students' communicative skills (listening, speaking, reading and writing), language skills (phonetic, lexical, grammatical), and sociocultural awareness (Yemez, Dikilitaş, 2022).

S. Bukantaitė, Z. Sederevičiūtė-Pačiauskienė believe that an important condition for modern education is the creation of a comfortable psychological climate in the classroom (Bukantaitė, Sederevičiūtė-Pačiauskienė, 2021). The educational environment should help students feel confident; contribute to the activation of their desire for creative self-expression. It is necessary to understand that the emotional background is closely related to personal feelings; therefore, the atmosphere prevailing in the classroom in a foreign language can both positively and negatively affect the manifestation of students' initiative.

B. Forgács concludes that modern communication is characterized by a variety of linguistic phenomena, including polymodal units of online communication (Forgács, 2022). These units consist of several components: verbal and non-verbal. According to the author the cases of using metaphors are of particular interest. In Internet communication the metaphor often takes a verbal-graphic form and turns into multimodal memes. In such cases there is a language game, code switching. In the course of the research the scientist tries to find out factors that determine the degree of success of metaphors (i.e., the absence or low level of cognitive dissonance in its perception). In addition, the author tries to determine the role of the multimodal metaphor in modifying the picture of the world of the linguistic personality.

M. Van Dijk et al. prove that creativity in the use of language involves the experience of creating, perceiving and criticizing speech works (Van Dijk et al., 2020). They view language as the human activity. In the course of this activity people communicate and replenish the stock of obsessive associations and spontaneous speech reactions to randomly presented stimuli. Typical inscription in conditions of everyday use is opposed to the "creativity" of the rare and unusual. The authors note that the less probable and plausible a word is in a given context, the more creative the sentence with it is. Consciously included in the speech creatives are presented in a special way: with a playful intonation and a peculiar look thrown at the listeners to make sure how the creative is appreciated.

F. von Reumont, A. Budke suggest using comics to develop creativity (von Reumont, Budke, 2021). They put forward and substantiated the assumption that it is advisable to use the potential of comics widely. According to their conclusions, comics are the basis for formation of the project culture of students. The art of comics is not only used in graphic design and advertising. Comics are effective both as a teaching method and as a method of cognition. A comic is a universal form of presenting information: capacious, figurative. The scientists highlight the prospects for the use of comics in the field of education. On the basis of comics at school it is proposed to introduce lessons in dynamic or plot drawing, mathematical modeling.

Y. Ying, D. Marchelline, G. Wijaya in their study describe development of a new digital didactic tool – flash cards (Ying et al., 2021). They consider a variety of examples: how stickers with foreign translations were used (glued to objects at home); the possibility of presentations or posters in the "*.pdf" format; means for mobile devices. The authors substantiate the assumption that today teachers can and should offer their students such an effective digital tool for memorization and development of creative thinking as flash cards.

C. Malik et al. note that in the modern world of computer technology there are programs for memorization based on the Leitner method (Malik et al., 2020). In this case the software tool uses the indicators "forgetting", "repetition"; keeps detailed statistics; "shifts" cards from one cell to another. Indeed, today's adolescents have different, in comparison with previous generations of children, possibilities of perception (in particular, in terms of its speed), a different threshold level of development of combinatorial and technical abilities.

It is recommended to use the experience of extracurricular activities (for example, electives, education centers, film studios) to create educational films or flash cards (Lai et al., 2020).

At the same time, both Russian and foreign researchers note that using flash cards in the study of disciplines is most often an element of game learning, but their didactic potential is significantly reduced and lost.

The analysis of the scientific works listed above allows us to identify the problem associated with the need for additional study of development of students' verbal creativity in the digital educational environment. The article presents the study aimed at substantiating effectiveness of using flash cards in teaching students as a means of developing their verbal creativity.

3. Materials and methods
3.1. Theoretical and empirical methods

The following methods were used in the work: theoretical analysis and generalization of literature when reviewing scientific theories on creativity; highlighting the main criteria, conditions and modern means for development of the verbal creativity.

Learning a foreign language using flash cards is based on the Leitner method. The essence of the method is revising foreign words in different time intervals, depending on the result of reproducing the word from memory. The rational management of time intervals makes flash cards a powerful tool for remembering information.

The study used flash cards for various purposes: for board games (Shooter, Tic Tac), for quests (Role Play cards, Black cab), for mobile phones (Quizlet, Anki and Lexilize Flashcards), for modification on the computer (Free Printable Flash Card Maker). For example, Role Play cards are a set of 60 cards for developing speaking skills in English lessons. Each card suggests a situation in which the actors are two students/two groups of people. The method contributes to the establishment of direct links between a particular word and its image; helps to make the lesson more emotional, entertaining.

As the main criteria for assessing formation of the verbal creativity, the following are used: fluency, flexibility, originality.

Working with flash cards is designed taking into account the principles of the system-activity approach to learning: when compiling a set of words the understanding of relationships, principles and algorithms of word formation takes place; attention and memory are activated; imagination develops; skills of systematic control and self-control are formed.

The following empirical methods are used to obtain up-to-date information on effectiveness of using flash cards in teaching as a means of developing students' verbal creativity:

- monitoring the communication of all participants in the interaction (for example, explaining a simple word in one minute);

- analyzing answers in a situation of professional communication (negotiations, employment, conclusion of a contract);

- discussing the results of working with flash cards (how two cards are connected to each other or how the image on the card relates to the word);

- the number of words/phrases used by the student when working with a flash card in the process of studying the material;

- time to memorize new words;

- scope and compliance of the used functionality of services for creating flash cards for development of the verbal creativity, etc.

The experimental study was conducted at Vyatka State University while studying the discipline "Electronic resources in the professional activity" and "Foreign language". 60 fist-year students of the training program "Psychology" (bachelor degree level) were involved. The average age of the respondents was 19 (78 % female and 12 % male).

The test was used to assess the input conditions, it included the following blocks "Vocabulary", "Morphology", "Word formation", "Syntax", "Pronunciation", "Torrance Tests of Creative Thinking. Creativity by Torrance is the desire to combine diverse information. The study used the Non-verbal tasks (Figural).

The scoring procedure is described in detail in the part "Stages of the research".

As a result of the initial diagnosis each student scored from 30 to 174 points. To determine the level of formation of the verbal creativity (according to the sum of all 6 blocks), the levels "bad" (from 30 to 49 points (inclusive)), "below the norm" (from 50 to 89 points (inclusive)), "norm"

(from 90 to 149 points (inclusive)), "above the norm" (from 150 to 173 points (inclusive)), "excellent" (more than 174 points).

Auxiliary methods of computer data processing are also used: design in the form of tables, diagrams, graphs, presentations and "*.pdf" files.

When characterizing the relationships of the features under consideration, nonparametric statistical criteria are used, in particular, the Pearson's chi-square test – χ2.

3.2. The base of the research

The main purpose of the experiment was to test effectiveness of using flash cards for development of students' verbal creativity. At the preparatory stage of the experiment the teacher analyzed the modern achievements of linguodidactics regarding the potential of digital services, interactive learning tools.

60 fist-year students of the training program "Psychology" (bachelor degree level) were involved. The average age of the respondents was 19 (78 % female and 12 % male).

The students used Lexilize Flashcards (https://lexilize.com/ru/) as a computer program. But they were free in their choice and could use another digital service.

The tools of this service allow to support a special organization of the learning process in the digital environment of the university. Its essence is expressed in a combination of creative pedagogical influence and a set of optimal pedagogical conditions, which should be based on integration and interpenetration of modern achievements in pedagogy and psychology.

With the help of the results of the entrance test it was possible to collect the required initial data on students. The sample was not random. The same teacher gave practical classes to all students to comply with the rules of probabilistic selection. This teacher also formulated the systems of educational tasks, directed information interaction when working with flash cards.

Work with digital services for creating flash cards was carried out in the same classrooms, using the same equipment and software. The materials for the test were developed by the authors in accordance with the current standard of higher education of the training program.

3.3. Stages of the research

The study was carried out in three stages.

At the preparatory stage of the experiment the teacher analyzed the modern achievements of linguodidactics regarding the potential of digital services, interactive learning tools. It was also determined that development of creativity in language learning involves preparing the individual for creative thinking. It was decided to use flash cards as a means to provide additional conditions for development of the verbal creativity. The cards can be used both in the classroom, and online, and in individual training.

At the preparatory stage of the experiment various digital services for creating own flash cards were also considered and analyzed: the online generator (https://kids-flashcards.com/ru/online-flashcards-maker), the mobile application (https://lexilize.com/ru/), Quizlet, Anki, etc. A feature of Quizlet is that the service can be used in several modes: consolidating material and combining cards ("modules") into courses. After learning a new part of theory, it is possible to match pairs of cards, to do a test, or to give the answer independently. Anki is the easiest to prepare card set. While memorizing words, it is possible to use the board, make notes and save, then download everything to your phone and work offline.

Lexilize Flashcards offers a spectacular user interface, various games ("Guess", "Recall" and "Make a pair"). After the student learns a new set of words, the application offers to revise the material after a while.

The following criteria were used as selection criteria: type of technology (cloud/online or offline), financial basis (free/commercial), functionality (types of interactive tasks, the possibility to create own maps and print them), interface and design. Based on the analytical work, the Lexilize Flashcards service (https://lexilize.com/ru/) was chosen. Its advantages are: work without the Internet; automatic pronunciation of all studied words and phrases; memorizing only "one's own" words and phrases with a system of interval revising; import words from Excel files; support for 118 languages; non-linguistic categories (medicine, mathematics, history) and others.

The author's testing and Torrance Tests of Creative Thinking (Non-verbal tasks (Figural)) was used to assess the level of development of the verbal creativity. The scoring procedure is described in detail further in 4.3.1.

Thus, it was possible to collect data on 60 first-year students of Vyatka State University of the training program "Psychology" (bachelor degree level). The experimental (30 students) and control (30 students) groups were formed. The sample was not random. The average age of the respondents was 19 (78 % female and 12 % male).

The second stage of the experiment was devoted to changing the structure of classes in accordance with the purpose of the study. The teacher of the discipline "Electronic resources in the professional activity" studied the digital service for creating flash cards/using a ready-made set. Then, in the foreign language classes vocabulary and grammar were studied.

The third stage of the study. When organizing practical work, research and creative activities, the students were offered to arrange the studied concepts, new words and set expressions in the form of a set of flash cards. The students could use Lexilize Flashcards (https://lexilize.com/ru/) as a computer program. But they were also free in their choice and could use another digital service.

4. Results
4.1. Clarification of the essence of the basic concepts

In the course of the analysis and generalization of the scientific literature the author's positions regarding the key concepts of the study, which are "flash card", "verbal component of creativity" in the digital educational environment of the university, were determined.

In the course of the analytical work with the literature it was substantiated that:

- development of linguistic diversity, promotion of dissemination of creative ideas, inclusion of digital resources in teaching foreign languages - initiatives supported at the level of UNESCO;

- creative thinking determines many professional competences of future specialists;

- creativity of speech is the ability of the person to think creatively;

- teaching a foreign language has a powerful didactic potential for development of the verbal creativity;

- in the modern educational space new digital tools appear that create additional conditions for development of creativity in general, and the verbal creativity in particular.

Flash cards are thematic cards depicting objects or concepts, presented in electronic form. Effectiveness of using flash cards for development of the verbal creativity was tested during training of specialists whose future professional activity involves solving problems in the field of education, healthcare, culture, sports, management, and social assistance to the population.

The verbal component of creativity is measured both in terms of speech development (vocabulary, morphology, word formation, syntax, pronunciation, etc.) and in terms of psychological processes leading to new results (Torrance Tests of Creative Thinking).

The study considers that creativity by Torrance is the desire to combine diverse information.

E. Torrens developed 12 tests, dividing them into verbal, visual and sound tasks.

The use of the verbal tasks requires special psychological education. It is necessary to use an album with stimulus materials. In addition, it takes more time to conduct and process materials on the verbal tasks. The Non-verbal tasks (Figural) was adapted at the Institute of General and Pedagogical Psychology under the auspices of the Association of Psychological Sciences in 1990.

Non-verbal tasks allow you to analyze five indicators: "fluency", "originality", "elaboration", "short circuit resistance" and "abstractness of names". Note that it is these criteria that J. Guilford is guided by when evaluating verbal creativity (Guilford, 1968).

Materials for tasks implementation and processing can be used by pedagogical specialists of the highest category. It was under such conditions that the Non-verbal tasks of the test were chosen for research.

The process of developing student's verbal creativity in the digital educational environment of the university acquires a new specific type of mastering social and professional experience through interaction with digital technologies.

Flash cards are an effective tool for influencing, stimulating, enhancing educational activities, but it is not the only one and has certain limitations in use. The best option is to combine this method with others, traditional or innovative: tests, textbooks, studying grammar and rules in the

classroom, communicating with native speakers, training videos. A new (creative) product may result from a random pronunciation/spelling error or from a combination of flash cards.

4.2. Educational activities of students in services for working with flash cards

According to the logic of the research program, in "Electronic resources the professional activity" classes students studied services for working with flash cards. The following are the examples of tasks they performed in the software environment:

1. Compile sets of words by topic/category in the form of a text document and an electronic sheet.

2. Install the flash card application.

3. Study the interface and functionality: selecting native language and language to learn, selecting the type of subscription (free/premium), studying ready-made categories of words and adding new ones, editing words.

4. Design flash cards for studying new material (for example, to study the biography of a psychologist, a list of new professions).

5. Do game tasks for consolidation and systematization: games "Guess!", "Remember", "Find a pair".

6. Apply sets of cards in a specific communication situation (psychological consultation, conflict resolution, etc.).

Specific practical results that marked the end of practical activities in the flash card service:

1. Theoretical knowledge about interactive tools in professional activities.

2. Formation of skills to use ready-made flash cards and create own. Understanding the practical value of products of this service for solving future professional problems.

3. Own sets of flash cards reflecting specifics of the subject.

Further, the students of the experimental group used flash cards when learning a foreign language.

The task for development of fluency. There are two students in each team. The recommended number of flash cards is nine for each team. Didactic effect of the exercise: working out words related to one part of speech or topic. For example, the names of animals, professions, interior items, etc. For each pair of teams, own version of flash cards can be used. Subsequently, sets of flash cards can be combined. Another option: scientists who studied the psyche in the course of experiments on animals.

A set of nine flash cards is presented in such a way that the words are on the front side. Students had to memorize as many words from the set as possible within 2-3 minutes. Next, the group is shown the back of the flash cards. And the participants are invited to name all the words of the original sequence. The winner is the team which members named more words and did not repeat during interaction.

The task for remembering spelling: write the words from the original set of flash cards from memory.

The task for development of speech flexibility. Two students participate. The recommended number of flash cards is 5 for each player, it is possible to use more (depending on the didactic goal, the duration of the game, the level of training of students). Flash cards indicate phrases where a dash is used instead of the last word. The teacher mixes a set of flash cards and distributes them to players. The first participant reads out the phrase. The second participant is given the task to give the missing word. If the second player finds it difficult and cannot continue the phrase (offer a flash card), then the move is passed to the first player.

Let us consider an example of a task based on flash cards for development of originality of speech. The teacher draws a star and a flash card is laid out at each end. The task of the participant is to explain the essence of the subject, the phenomenon with the help of their flash cards. For example, "Psychologist" is a specialist who received a higher humanitarian education, training program "Psychology"; "Psychologist" is Sigmund Freud.

The described version of the game contributes to development of skills to explain words in a foreign language.

An example of another (combined) option for organizing work: "What should be taken to a desert island". The teacher prepares a set of flash cards for students, from the set the students must choose only three. These flash cards are symbols of those items that they will definitely take with

them to an imaginary island. Participants can also argue why they made this choice. First, the students make their own decisions. Then they work in pairs, it is necessary to unanimously decide which flash cards (items) should be taken. Then the students work in mini-groups of four people, then – eight people, etc. (depending on class size). As a result, the team must make a decision unanimously.

In the control group the students studied software tools for creating flash cards as part of the discipline "Electronic resources the professional activity". However, there were no specially organized activities to include flash cards for development of fluency, flexibility and originality of speech in foreign language classes. The students of the control group studied the material doing exercises and assignments of the work programs. An example of the exercise: words were presented to the students on a paper sheet/in electronic form. The students from the control group had to explain what each word is associated with. For example: profession is a business (labor activity) in which a person is engaged; profession is a business in which a person receives money; profession – specialty; profession – to defend the Motherland.

4.3. Experimental assessment
4.3.1. The ascertaining stage of the experiment
Materials specially designed for testing were used to assess the level of development of verbal creativity.

The following blocks "Vocabulary", "Morphology", "Word formation", "Syntax", "Pronunciation", "Torrance Tests of Creative Thinking (Non-verbal tasks (Figural))" were defined.

The auxiliary methods of computer data processing are also used: presenting in the form of tables, diagrams, graphs, presentations and "*.pdf" files.

The technique "Classification of concepts" is aimed at revealing the level of generalization. 30 various pictures (including images of the future profession) are used. Next, the number of correct choices of pictures is calculated both by category and in general. For each correct choice 1 point is given. The highest score is 30 points.

The technique "Finding synonyms" is aimed at revealing the level of synonym selection. The student is asked to choose a word that is close in meaning to the given word. 10 words from everyday life and professional sphere are presented. The student receives 1 point if the chosen word is a synonym; 0 points if the selected word does not match the semantic field of the given one. The highest score is 10 points.

The technique "Giving definitions" is aimed at revealing the level of giving definitions. The student is asked to give as many definitions for the given word as possible. 5 words are presented (everyday life, profession). The student receives 2 points – if more than 3 definitions are given; 1 point – if less than 3 definitions are given; 0 points – if the answer is not given or it does not correspond to the semantic field of the presented word. The highest score is 20 points.

Thus, in the block "Vocabulary" the maximum of 60 points is given.

The technique "Checking formation of a conscious attitude to grammatical constructions" offers the students to listen to the phrase and determine which forms are used incorrectly. 5 phrases from everyday life and the professional sphere are presented. The student gets 2 points for a correct answer. The highest score is 10 points. This score is the total for the "Morphology" block.

The technique "Checking the ability to critically assess speech" helps to find errors in the use of word formation methods; the students are invited to listen to incorrect word forms and express their opinion. 5 word forms from everyday life and the professional sphere are presented. The student gets 2 points for a correct answer. The highest score is 10 points. This score is the total for the "Word Formation" block.

The technique "Checking the ability to construct sentences" presents the student three words (everyday life, profession). From the words the student has to make up a sentence, the example of words is: friends, walk, park, read, memoirs, psychiatrist. Four sets of words from everyday life and the professional sphere are presented. The student receives 3 points for a correct answer. The highest score is 12 points. This score is the total for the "Syntax" block.

The study of the sound side of speech is supported by the technique "Examination of sound pronunciation". During it the student is presented 12 pictures showing necessary sounds at the beginning, middle, end of the word. The student is asked to independently name the depicted object. If the student makes a mistake in pronunciation, he/she is advised to listen to how the

sound is pronounced and repeat. In the case of correct pronunciation, it can be concluded: the sound is present, but it is not automated (not fixed). Each indicator is assessed separately. The highest score is 12 points, which is total for this block.

Torrance Tests of Creative Thinking (Non-verbal tasks (Figural)) uses three tasks. Answers to all tasks are given in the form of drawings and captions to them. The time for completing the task is not limited, since the creative process involves free organization of the temporary component of the creative activity. The artistic level of drawings is not taken into account. The interpretation of the results of the Torrens test was made according to the methodology. The analysis added up all the scores obtained when assessing five factors. The total sum was divided by five.

Thus, as a result of the initial diagnosis each student scored from 30 to 174 points. To determine the level of formation of the verbal creativity (according to the sum of all 6 blocks), the levels "bad" (from 30 to 49 points (inclusive)), "below the norm" (from 50 to 89 points (inclusive)), "norm" (from 90 to 149 points (inclusive)), "above the norm" (from 150 to 173 points (inclusive)), "excellent" (more than 174 points).

The experimental (30 students) and control (30 students) groups were formed. The sample was not random.

4.3.2. Forming stage of the experiment
This stage of the experiment was devoted to the use of a flash card when studying a foreign language and selecting exercises for development of the speech creativity.

Examples of tasks to be done using flash cards.

1. A set of flash cards is prepared on a specific topic ("My future profession"). Words for practicing - "psychologist", "teacher", "mentor", "tutor", "preschool psychologist", etc. Next, flash cards are presented in turn or randomly. As soon as the student sees a word related to his/her future profession, he/she must say Stop. If the student is right, then the group makes a judgment: "That's right, It's a...".

2. The teacher or expert shows four/three flash cards on the interactive whiteboard. Each word is said in turn. The students close their eyes. The teacher or expert removes one card and asks: "What's missing?".

3. The teacher or expert shows on the interactive whiteboard several flash cards (for example, pieces of school furniture). The students name them, and then give a description of one subject. This game is useful in that it makes it possible to connect new vocabulary with already familiar words.

At the control stage of the experiment the verification work was also carried out on the materials.

4.3.3. Control stage of the experiment
At the fixing stage of the experiment testing was again carried out according to the methods of 6 blocks. The data after the experiment are presented in Table 1.

Table 1. The results of measurements on the level of development of the verbal creativity

Level	Groups			
	Experimental (30 students)		Control (30 students)	
	Before the experiment	After the experiment	Before the experiment	After the experiment
«Bad»	3	1	3	2
«Below the norm»	6	2	7	8
«Norm»	14	8	13	12
«Above the norm»	5	8	5	5
«Excellent»	2	11	2	3

In this case the hypotheses are formulated as follows.

H0: the level of the verbal creativity in the experimental group is statistically equal to the level of the students in the control group; H1: the level in the experimental group is higher than the level of the control group. Further, the values of the criterion were calculated in the online resource before ($\chi2$ obs.1) and after ($\chi2$ obs.2) the experiment. For $\alpha = 0.05$, according to the distribution tables, $\chi2$crit. is 9.488. Thus, $\chi2$obs.1< $\chi2$crit. (0.114 < 9.488), and $\chi2$obs.2> $\chi2$crit.(9.997 > 9.488). Therefore, the shift towards increasing the level of the verbal creativity of the students of the experimental group can be considered non-random.

In other words, participation of future teachers in creation of flash cards and their use in foreign language classes made it possible to provide additional conditions for development of demanded digital skills, experience in systematic control and self-control; formation of communication skills, imagination; understanding relationships, principles and algorithms of word formation; activation of attention and memory, etc. Corresponding changes in the pedagogical system are not accidental, but they are predictable.

5. Limitations

The sample of students was not probabilistic, since the experimental and control groups were formed in such a way as to guarantee the presence in each group of the same skills and personality traits that form the basis of the verbal creativity of future educational psychologists, their identical distribution.

The article used the Non-verbal tasks (Figural) of the Torrance Tests of Creative Thinking to indirectly assess verbal creativity.

For diagnostics the results of the input control testing were taken into account. The selection of the experiment participants and the sample size are justified by the specifics of the study: the study of theoretical material on the methods of work for development of lexical and grammatical material, development of the verbal creativity, digitalization of studying at university (in particular, teaching a foreign language).

The problem is that simultaneous and integrated studying of the discipline "Electronic resources in the professional activity" and "Foreign language" is implemented in the training program for a limited number of specialties. Throughout the experiment practical activities for solving the described problems, supported by services for creating flash cards, were carried out by the same teacher, using the same software equipment in special classrooms. The implementation took into account the basic principles of digital didactics in higher education, the intercultural approach to teaching a foreign language.

6. Discussion

The quantitative analysis of the obtained data showed that after the completion of the experiment 37 % of the students in the experimental group had a "high" level of the verbal creativity (11 students out of 30), which was 7 % initially (2 respondents out of 30). The number of students with "below the norm" and "poor" levels significantly decreased from 30 % to 10 %. For the control group the following was recorded: the indicator for the level of "excellent" qualitatively changed from 7 % to 10 %, and for the level of "bad" – from 10 % to 7 %.

From the functionality of services for creating interactive cards and sets of flash cards, which have a positive didactic effect on development of the verbal creativity, the participants of the experiment noted: the use of accounts of global social networks (Facebook, Instagram); the possibility to repeat words, import from spreadsheets; creating own categories of words; work on the computer and in the mobile application. Also in the discussion the following areas for improving the service were highlighted:

- possibility to change the location of the button for voicing words on cards;
- possibility to configure the application so that one side of the card is shown first, and then the other. That is, at first the user translates from Russian into English, and then from English into Russian.

The following didactic possibilities of flash cards were identified in relation to learning in the conditions of development of the modern digital educational environment: active participation in the process of learning a foreign language; didactic games using digital services; development of creative thinking, speech, intelligence; systematization and generalization of the material; new forms of control; possibility to learn independently.

The latter is of particular importance in the context of training highly qualified specialists of the future. Indeed, the participants in the experimental group received additional conditions for training concentration of attention and memory, fostering self-motivation, developing critical thinking, and gaining experience in independent work planning.

The research materials are consistent with the principles of the UN and UNESCO regarding the need to develop linguistic diversity, to promote creative ideas, and to include digital resources in education (UNESCO: Building peace..., 2022; UNESCO. Alamaty, 2022). In addition, the practical results of the study can be applied at international events which introduce new approaches to development of the foreign language communication (for example, in trainings, conferences for the exchange of experience).

The formulated conclusions supplement the conclusions of C. Lai et al. regarding the potential of flash cards for the individual approach, for group work (Lai et al., 2020). In addition, the obtained results expand the ideas of M. Van Dijk et al. regarding the range of didactic means for development of the creativity of speech (Van Dijk et al., 2020).

7. Conclusion

In the present study creativity is considered in relation to speech as the ability to speak in an original, non-standard, interesting way. As a consequence, the verbal component of creativity is measured both in terms of speech development (vocabulary, morphology, word formation, syntax, pronunciation) and in terms of psychological processes leading to new results (fluency, originality, flexibility). A distinctive feature of the proposed approach is the following: flash cards and a learning tool (in the course "Electronic Resources in Professional Activities"); a learning tool (in foreign language classes); a new tool for self-expression. For example, with the help of flash cards developed in the Lexilize Flashcards service (https://lexilize.com/ru/) students prepared a thematic story on career guidance for applicants.

In other cases flash cards were actively used in other classes for modeling psychological situations, communication problems, and biographical descriptions. The flash card method was also used in art therapy classes as a support for self-discovery in a comfortable atmosphere.

When summarizing the results of the pedagogical experiment, the rules were formulated, implementation of which ensures effectiveness of using flash cards for development of students' verbal creativity:

1) Mechanical reading of information on the flash card is not recommended. It is advisable to use game techniques, facial expressions/gestures; to give an analogy; to use other visual means (animation, sketches); to argue own position;

2) It is recommended to use ready-made sets of flash cards only at the initial stage of training. Creating and enriching own flash card system is much more effective in terms of developing the speech creativity. Before working in such a system it is necessary to answer a number of questions: how regular the use of flash cards will be, whether the set is universal or professional; how to group cards into categories; what the period for updating the content of flash cards is;

3) Work with flash cards should support personal and professional development;

4) It is helpful to use mnemonics. Dynamic images in infographics have a positive effect on formation of linguistic guessing skills, which activates the chain of mental operations. Mnemonics can be effectively used when learning new words (learning); converting words into images (coding); formation of links between reference images and memorized images (memorization);

5) It is desirable to pronounce answers (words on flash cards) aloud. This technique makes memorization more vivid, as it uses the auditory channel;

6) Flash cards should not be considered as a universal didactic tool.

Thus, flash cards contribute to development of students' verbal creativity. The materials of the study allow to reasonably assert that using flash cards in teaching provides additional conditions for development of human creative abilities.

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The Conflict Resolution Styles of University Students Living in Kosovo: A Mixed-Method Study

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Abstract

The present study aimed to examine conflict resolution styles among university students living in Kosovo. Accordingly, the conflict resolution styles of university students were examined in the context of gender, nationality, various familial factors, and introverted/extroverted personality traits. Also, answers were sought to the question "Which issues do university students encounter conflict with whom and which conflict styles do they show?". The study was carried out in the sequential explanatory method pattern of the mixed method. The quantitative research phase of the study was carried out with 585 students (333 females and 252 males) studying in Anadolu University Open Education Faculty Kosovo Programs and Prizren University Turkish undergraduate programs. Comprising 6 Turkish, 6 Albanian, and 6 Bosnian students, a total of 18 students participated in the qualitative phase of the research. The quantitative data of the study were obtained through Conflict Action Styles Scale and personal information survey. The qualitative data were collected through semi-structured interviews. Confirmatory factor analysis, multivariate analysis of variance, and content analyses were adopted for the analysis of the data. Examining the results, in terms of the nationalities of the students living in Kosovo, it was revealed that Turkish students used the mediating conflict style at a higher level than the Bosnian students. Also, it was found that conflict resolution styles of university students of different nationalities in terms of gender and perceived introversion/extroversion personality traits did not differ significantly. In terms of family structure, it was determined that the Bosnian students with extended families have higher levels of compelling conflict style than Albanian students. It was also found that students have more frequent conflicts with individuals in the work and family environment, and exhibit self-expression behaviors in conflict situations.

Keywords: conflict, conflict resolution, conflict resolution styles, Kosovo.

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1. Introduction

People, throughout the whole world, find it increasingly difficult to create and maintain peace and minimize conflict. Considering that conflict resolution helps to maintain peaceful and more meaningful personal relationships, understanding conflict and understanding how to resolve it will directly affect achieving this goal (Blumberg, 1998). Cultural differences within and among countries can lead to conflicting communications. Individuals from different cultural backgrounds and family structures and with different personalities try to resolve conflicts in substantially varying ways. Therefore, communication strategies such as conflict resolution styles can be an important tool to unite different cultural perspectives (Dubinskas, 1992; Hofstede, 1983; Holt, 2000; Ting-Toomey et al., 2000).

Conflict is used synonymously with the words disagreement, discussion, discordance, dispute, tension, inconsistency, challenge, and disharmony (Leseho, 2001) and is defined as a dynamic process (Williams, 2011). Conflict resolution, on the other hand, is defined as the process used by the parties to reach an agreement (Sweeney, Carruthers, 1996), and it has first gained attention in the 1960s with the study carried out by Blake and Mouton (1964). Then, different researchers introduced new definitions of the process. Accordingly, conflict resolution is a process of cooperation that enables the parties to develop and win (Akbalık, 2001), a bargaining process based on the needs of both parties (Schrumbf et al., 2007), or a reconciliation process (Erem, 2008). In this process, individuals need to try some ways to solve the conflict situation they experience (Türnüklü, 2007). These approaches gave rise to the concept of conflict resolution styles.

Individuals have two main motivations for interpersonal conflict; The first is the anxiety of reaching one's own goals, and the second is the anxiety of losing interpersonal relationships. Individuals use five different conflict resolution styles to overcome these two concerns and resolve conflict. These are smoothing, withdrawing, compromising, confrontation, and forcing (Johnson, Johnson, 2008). In the smoothing style, allowing the other person to do what they want to do is adopted, and the person gives up his own goals. The idea that conflict should be avoided so that an unpleasant situation does not occur is dominant, and individuals adapt to everything so that their relationship does not deteriorate. Withdrawing is a conflict resolution strategy where both parties lose. Withdrawing is easier to avoid than facing conflict, and there is a prevailing belief that trying to resolve conflicts is futile. In the compromising style, both parties make some sacrifices to resolve the conflict. Accordingly, both parties are happy with the result, this style is a win-win tactic. In problem-solving style, on the other hand, purpose and relationship are very important, both sides try to find a middle ground. This style allows the tension between the parties to decrease and the relations to develop. Compromising style is a complete win-win tactic. In the forcing style, one of the parties tries to impose its solution on the other to resolve the conflict, or even use force. These individuals focus only on their own goals and are not concerned with the needs of others. This is a win-lose tactic (Blake, Mouton, 1964; Blake, Mouton, 1970; Johnson, Johnson, 2008). Accordingly, conflict resolution is used to achieve one's own goals without caring about the needs of others (Blake, Mouton, 1964). Johnson and Johnson (2012), who similarly explain conflict resolution styles, explained these styles by giving animal names. Accordingly, withdrawing style (turtle), smoothing style (teddy bear), compromising style (fox), forcing style (shark), and confrontation style (owl).

One of the most important factors affecting the conflict resolution styles of individuals is cultural differences. The concepts of individualism and collectivism are important ways to distinguish broad differences in cultural values (Hofstede, 1980). Although many approaches to this issue differ in view of the situation, such a distinction remains the basis of discussions as to how conflict resolution styles may vary across cultures (Oetzel, 1998; Ting-Toomey et al., 1991, 2000). The bonds between individualistic people are loose, and individuals in the ingroup are emotionally disconnected, where the need for autonomy becomes prominent. The individual goal is more important than group goals; When goals change, interpersonal conflicts arise. In a collectivistic culture, people care more about group goals than individual goals. Socialization is based on obedience, harmony is important in interpersonal relations (Kağıtçıbaşı, Cemalcılar, 2014).

According to Ting-Toomey (1988), members of individualistic cultures prefer direct and assertive methods when resolving conflict. It is assumed that members of individualistic cultures, which are characterized by being more concerned with themselves than others, prefer conflict resolution styles such as the use of force, confrontation/problem solving, and compromise. These

mentioned styles involve strong verbal communication, less emphasis on the internal aspects of communication, and less consideration of the needs of others (Rahim, 1992; Rahim, Blum, 1994). On the other hand, in collectivist cultures, the needs of a group are considered more important than that of the individual (Hofstede, 1980; Hofstede, 1983), and conflict resolution style is also reflected in this situation. If the need to preserve relationships and stay in the group is prominent, styles such as smoothing and compromise are expected to be strong (Elsayed-Ekhoulym, Buda, 1996; Rahim, 1992; Rahim, Blum, 1994). Withdrawal, on the other hand, can be used to protect the dignity of others instead of embarrassing them (Ting-Toomey, 1988). The managers from the collectivist Turkish culture prefer problem-solving as a conflict resolution style, similar to individuals belonging to the US culture, which is an individualistic culture, but the managers in Turkish culture prefer the conformity and compromise conflict resolution style, and in this respect, they significantly differentiated from the US managers (Kozan, 1990).

Differences in society in terms of language, religion, ethnic origin, socioeconomic characteristics may reveal differences in perception (Avruch, 2004). On the other hand, since culture directs the daily life practices of individuals or societies, cultural differences can create differences in perception of conflict and therefore conflict resolution (Todd, 2006). Since people form their attitudes, values, and judgments according to the sub-culture they live in, they learn from the society or sub-culture in which they live, in which situations they will enter into conflict, how they will behave in the conflict process, how they will react, and how they will respond to the consequences of the conflict (Karip, 1999). Also, the socio-cultural environment that individuals are exposed to in childhood is effective in the conflict resolution styles used by individuals. In particular, the ethnic origin can be a reference point for which conflict resolution style individuals will use (Lind et al., 1994). In this context, the research findings show that conflict resolution styles may differ according to cultures in Balkan Countries similar to Kosovo, which were examined in the present study, in case of conflict, the integration style of those living in Turkey, Bulgaria, Greece, and Romania, the partly integration, reconciliation and compliance styles of those living in Albania, Macedonian. On the other hand, it showed that those living in Turkey use integration and compromise styles (Bozoğlan, 2010).

The gender of the individual is another factor that affects which conflict resolution style they will choose in a conflict situation. Socially appropriate behavior differs for men and women in many countries in the world. Therefore, it is possible that men and women handle conflicts differently and prefer different conflict resolution styles (Shockley-Zalabak, 1981). Historically, men have socialized to communicate in direct, conflictual ways, assuming the dominant position of power, while women have been socialized to care for others and play a more open role (Gilligan, 1977; Stockard, Lach, 1989). Studies on conflict resolution reveal that styles such as forcing or problem-solving are preferred styles for men. On the other hand, the fact that it is more important for women to protect relationships and they take less risk of aggressive behaviors increases the possibility of preferring styles such as smoothing, withdrawing, and compromising (Mills, Chusmir, 1988). Similarly, men generally prefer more direct and women prefer more avoidant and withdrawing styles by adopting smoothing, withdrawing, and compromising styles (Ting-Toomey 1986). At the same time, it was determined in studies that women reveal themselves more in conflict resolution and use more constructive conflict resolution styles in conflict resolution than men (Aıcı, 2007; Basım et al., 2009; Basım, Hislişahin, 2009; Black, 2000; Butovskyan et al., 2007; Gündoğdu et al., 2010; Owens et al., 2005; Şahin et al., 2007; Rehber, 2007; Türnüklü, Şahin, 2004).

Family is an important factor in the formation of conflict resolution styles of individuals (Sayıl et al., 2002). To resolve the conflicts that children and adolescents experience, families need to meet their psychological, social, cultural, and economic needs (Özgüven, 2001). To meet these needs, the family must fulfill its functions. It has been observed that conflicts are reduced if family functions are fulfilled (Kılıçarslan, 2001). It can be argued that in families that do not fulfill family functions, in other words, families with unhealthy family functions have bad interpersonal relations, communication among family members is broken, there is no open communication and they have negative feelings towards each other (Bulut, 1993). Also, it is seen that destructive conflict resolution methods are frequently used in families with unhealthy family functions (Gee, 2001). If conflicts in families are resolved by fighting, children will use the same resolution methods in the future (Rice, 1997). Therefore, families' conflict resolution methods will be role

models for their children (Selçuk, Güner, 2000) and may significantly affect which conflict resolution style individuals choose (Ehrlich, 2008; Ike, 2008; Deen, 2000). Rrustemi (2016) explains family and family members as keys and locks while describing the family. It can be argued that whether the family is a structurally extended family or nuclear family can affect the behaviors of the members of the family as well as their attitudes towards conflicts or conflict resolution styles. Although family members form the unity of the family (Hadri, 2017), even within this unity, differences of opinion among family members cause conflicts. Examining the family structure in Kosovo, the economic, social, political, and cultural changes in the social cause the families living in the cities in Kosovo to turn into nuclear families rather than extended families (Hadri, 2017). Although it was more common in the past, extended family structure is still common, especially in rural areas (Poyraz Tacoğlu, 2008).

Knowing the conflict resolution styles of individuals seems to be important for healthier relationships and a healthy social structure. Despite this importance and all the traumatic processes in Kosovo, it has been seen that the efforts made in this regard are not adequate. Despite the war in Kosovo and the price paid, the conflicts between different nationalities living together could not be resolved. The fact that people of different nationalities, religions, and cultures have to live together and that they have overcome a past such as war and normalized their relations has brought along a difficult process. To overcome this difficult process and resolve disputes, the European Union has played a mediating role (Oduncu, 2019). Despite the political regime changes and the constitutional recognition of the rights of every national affiliation, the traces of the traumatic process created by the war, unfortunately, continue to this day. These conflicts both pave the way for the continuity of the conflicts in the political sense and for the individuals with different cultures, religions, and affiliations to experience conflicts individually. In this sense, it is thought that the resolution of conflicts and the styles used for resolution will play an important role.

As a result, many factors are mentioned in the emergence of conflicts. Culture, gender, socio-economic status, family structure and functions, ethnicity are the prominent factors (Bozoğlan, 2010). Individuals living in Kosovo consist of people from different languages, religions, and cultures. Considering the demographic structure of Kosovo, Albanians, Bosnians, Serbs, Turks, Roms, Ashkalis, Egyptians, and Gorani people are the major ethnic groups, while there are also small percentages of Croats, Montenegrins, and Macedonians (Purova, 2016). The diversity of ethnic groups that make up the population of Kosovo also gives clues about the diversity or differences in the languages spoken and religious affiliation. Naturally, these differences can cause differences of opinion and conflict with individuals. These characteristics of individuals can also be effective in the differentiation of the strategies they adopt in resolving conflicts. It was inevitable for individuals to be affected during the war in Kosovo and the recovery process after that. The effects of the war can be listed as economic or family losses, the return of those who immigrated during the war and the difficulties they faced (Oduncu, 2019), the Albanians and Serbs who were two opposing groups in the war continuing to live in the same country after the war and trying to adapt to this situation. Therefore, although the war has ended and years have passed, the continuation of the conflicts created by the effects of war and differences in religion, language, and nationality is in question. However, it is seen that studies carried out in Kosovo in this regard are limited. In this manner, it is important to examine the conflict resolution styles of individuals living in Kosovo and to reveal the variables associated with these conflict styles. Accordingly, in this study, it has been expected that the conflict resolution styles used by university students living in Kosovo, nationalities, genders, and perceived family structures, will play a facilitating role in the resolution of conflicts between individuals living in Kosovo. The present study mainly aimed to examine the conflict resolution styles of university students of different nationalities (Bosniak, Albanian and Turkish) living in Kosovo. Accordingly, answers were sought to the following questions:

- Do the withdrawing, forcing, smoothing, compromising and problem-solving conflict resolution styles of university students of different nationalities living in Kosovo differ significantly in terms of their gender?

- Do the withdrawing, forcing, smoothing, compromising and problem-solving conflict resolution styles differ significantly in terms of family structures (nuclear and extended family) of university students of different nationalities living in Kosovo?

- To whom and in what situations do university students of different nationalities living in Kosovo have conflicts?

- What behaviors do university students of different nationalities living in Kosovo display in conflict situations?

2. Methods
Research Model
The present research adopted qualitative and quantitative research methods combined in a mixed design to examine the conflict resolution styles of university students of different nationalities living in Kosovo. Firstly, the quantitative data were collected and analyzed, and then qualitative data were collected and analyzed. In the quantitative research phase, the causal comparison method, one of the descriptive studies, was used to examine conflict resolution styles according to various variables. In the qualitative research phase, the phenomenology method, which is a qualitative research method, was used to obtain experiences related to conflict resolution styles.

Participants
Of the students participating in the quantitative phase of the study, 333 (56.92 %) were female and 252 (43.08 %) were male. On the other hand, according to their nationalities, it was seen that 338 of the students were Turkish (57.78 %), 148 (25.30 %) Albanian and 99 (16.92 %) Bosnian. The distribution of students by age groups was 138 students (23.59 %) in the age range of 18-21, 227 students (38.80 %) in the age range of 22-25, 193 students (32.99 %) in the age range of 26-29, and finally 27 students (4.62 %) in the age range of 30-33. The participant group of the qualitative stage of the research consisted of 18 volunteer students (6 Turkish students, 6 Albanian students, and 6 Bosnian students), 7 male and 11 female, who study at Anadolu University Open Education Faculty Kosovo Programs and Prizren University Turkish undergraduate programs.

Data collection tools
Conflict Action Styles Scale
The Conflict Action Styles Scale, developed by Johnson and Johnson (2008) and adapted into Turkish by Karadağ and Tosun (2014), was adopted to determine the conflict resolution styles of university students. The Conflict Action Styles Scale is a 5-point Likert-type scale consisting of 35 items developed to reveal the dominant action styles of individuals during the conflict. The scale consists of five sub-dimensions: withdrawing, forcing, smoothing, compromising, and problem-solving (Karadağ, Tosun, 2014).

Semi-Structured Interview Form
A semi-structured interview form was developed by the researcher to obtain the participants' experiences on conflict resolution styles in situations where they experience conflict. In the form, open-ended questions were included to obtain experiences about conflict resolution styles. The open-ended questions in the form were prepared by the researcher and were revised in line with the opinions of experts in the field of psychological counseling and guidance and took their final form.

Data Collection Process
In the process of collecting the research data, firstly, permission for the application was obtained from the Anadolu University Ethics Committee. After the approval of the ethics committee, the research data collection process was initiated by the researcher.

In the second qualitative stage of the study, among the volunteer participants for face-to-face interviews, those in the high and low score groups were selected, taking into account the distribution of the scale sub-dimension scores. Individual interviews were conducted with students who voluntarily participated in face-to-face interviews. The interviews lasted approximately 40-45 minutes and the process was recorded with a voice recorder.

Data Analysis
Analysis of the Quantitative Data
Depending on the questions constituting the quantitative stage of the research, descriptive statistics and analysis of variance were used in the analysis. The Mahalanobis distance values were calculated within the scope of extreme value calculations, and eight people were excluded from the analysis accordingly. Thus, the analysis of the data was carried out with the data of 585 students. In addition, before the analysis, it was examined whether these data showed a normal distribution. Information on these distributions is shown in Table 1.

The skewness/kurtosis values of the variables were obtained as -0.02/-0.84 for the avoidant, -0.67/ 0.18 for the forcing, -0.60 /0.32 for the facilitator, -0.73 /0.56 for the compromising, and -0.89/0.92 for the opposition, respectively. Thus, it was seen that the skewness-kurtosis values of

all variables were between +1 and -1. Since it was stated that the kurtosis and skewness should be between -2 and +2 for the normal distribution (George, Mallery, 2016; Tabachnick, Fidell, 2013), it was seen that the available data met this requirement. Also, Q-Q graphs, histograms, and leaf stem graphs of the variables were examined for multivariate normality and it was seen that the data were close to a normal distribution. For analysis of variance, the Box test and Levene test were taken into account for homogeneity of variances. The Tukey test, one of the post hoc tests, was used when a significant difference was observed after the analysis of variance. Also, Cohen's (1988) suggestions for effect sizes were taken into consideration for the analyses. The analyses in the study were carried out using the IBM SPSS Statistics 25 program.

Table 1. Descriptive Statistics on Conflict Resolution Styles (n= 585)

Variables	Avoidant	Forcing	Facilitating	Compromising	Confrontational
The Number of valid participant	585	585	585	585	585
Mean	12.68	15.86	15.98	19.44	20.68
Standard deviation	3.49	2.60	2.61	3.01	2.70
Skewness	-0.02	-0.67	-0.60	-0.73	-0.89
Kurtosis	-0.84	0.18	0.32	0.56	0.92
The lowest value	4	7	6	9	11
The highest value	20	20	20	25	25
25 % slice	10	14	14	18	19
50 % slice	13	16	16	20	21
75 % slice	16	18	18	22	23

Analysis of the Quantitative Data

After the interview, the voice-recorded interviews were analyzed and transferred to the electronic environment. The analyzes obtained for the analysis of qualitative data were coded by the researcher using the MAXQDA (ver.11) software. Then, the codes determined separately were compared and common codes and themes were obtained. These codings were checked and reviewed by an expert researcher in qualitative studies. While coding, the answers given by the students to all questions were carefully noted and it was aimed to determine with whom and in which situations university students living in Kosovo had conflicts depending on their nationalities. Also, the behaviors of the students in conflict situations according to the counterpart and their conflict resolution styles were examined depending on their nationality. The findings were supplemented by directly quoting the statements of the students.

3. Results
Quantitative Research Findings
Results of the Analysis of Conflict Resolution Styles in University Students by Nationality and Gender

It was accordingly aimed to examine the withdrawing, forcing, smoothing, compromising, and problem-solving conflict resolution styles of university students according to their nationality and gender. A 3 (nationality) x 2 (gender) patterned multiple analysis of variance (MANOVA) was conducted to determine whether the conflict resolution styles of university students differed significantly depending on nationality and gender. Accordingly, multiple variance analysis assumptions were examined. It was observed that the assumptions of the number of participants and normality and the condition of being equal for the covariates were met (box test p= .68). According to the results of the analysis, it was determined that the interaction of conflict resolution styles, nationality, and gender was not significant in terms of multiple comparisons (Wilks' Λ = .991; $F (6.578)$ = .537; p = .87). Examining the main effects, it was determined that there was no

significant relationship in the context of multiple comparisons in the gender variable (Wilks' Λ = .998; F (6.578) = .210; p = .87), whereas conflict resolution styles were found to be significant in the context of nationality (Wilks' Λ = . 962, F (6.578) = 2.258, p = .013. In this context, analysis of variance (ANOVA) was carried out to determine the differences between groups regarding the nationality variable. In these analyses, it was determined that the variances for all variables were congruent, and the results of the analysis are presented in Table 2.

Table 2. Variance Analysis Results of Conflict Resolution Style Scores by Nationality

Source of Variance	Dependent variable:	KT	SD	KO	F	p	η_p^2	Statistical power
Fixed	Withdrawing	70702.3	1	70702.3	5770	0	0.91	1
	Forcing	111783	1	111783.0	16388	0	0.96	1
	Smoothing	113166.2	1	113166.2	16380	0	0.96	1
	Compromising	164262.5	1	164262.5	18258	0	0.96	1
	Problem-solving	189764.2	1	189764.2	25764	0	0.97	1
Nationality	Withdrawing	1.95	2	0.98	0.08	0.92	0	0.062
	Forcing	20.12	2	10.06	1.47	0.23	0.005	0.315
	Smoothing	0.73	2	0.36	0.05	0.94	0	0.058
	Compromising	**83.67**	**2**	**41.83**	**4.65**	**0.01**	**0.016**	**0.783**
	Problem-solving	3.49	2	1.74	0.23	0.78	0.001	0.087

To determine the source of this difference in the mediating conflict resolution style, the Tukey test was used to compare according to the nationality variable. The results of this comparison are given in Table 3 .Turkish students prefer compromising conflict resolution style more than Bosnian students.

Table 3. Tukey Test Results on the Change of Compromising Conflict Style by Nationality

Dependent variable		Nationality	Nationality	Differences between the mean values	SE	p
Compromising	Tukey	Turkish	Albanian	0.27	0.29	0.619
			Bosnian	**1.05**	**0.34**	**0.006**
		Albanian	Turkish	-0.27	0.29	0.619
			Bosnian	0.78	0.38	0.111

Results of the Analysis of Conflict Resolution Styles in University Students by Nationality and Family Structure

The aim was to examine the withdrawing, forcing, smoothing, compromising and problem-solving conflict resolution styles in university students depending on nationality and family structures. In this context, a 3 (nationality) x 2 (family structure) patterned multiple variance analysis (MANOVA) was conducted to determine whether the conflict resolution styles of university students differed significantly depending on nationality and family structure. Accordingly, multiple variance analysis assumptions were examined. It was observed that the condition of equalization of the number of participants, normality assumptions, and covariances was met (box test p= .56). According to the results of the analysis, it was determined that the interaction of nationality and family structure in the context of conflict resolution styles was significant in the context of multiple comparisons (Wilks' Λ = .038; F (6.578) = 2.236; p = .014). Examining the main effects, it was found that there were no significant relationships in family type in the context of multiple comparisons (Wilks' Λ = .015; F (6,578) = .2.313; p = .13). On the other hand, conflict resolution styles were found to be significant in the context of nationality (Wilks' Λ = .039; F (6.578) = 2.310; p = .011). Intergroup variance (ANOVA) analysis was performed to examine the significant differences determined for the interaction of nationality and family structure variables.

Table 4. Variance Analysis Results of Conflict Resolution Style Scores by Nationality and Family Structure

Source of Variance	Dependent variable:	KT	SD	KO	F	p	η_p^2	power
Fixed	Withdrawing	72218	1	72218	5884	0	0.911	1
	Forcing	114204	1	114204	16986	0	0.967	1
	Smoothing	115567	1	115567	16983	0	0.967	1
	Compromising	167604	1	167604	18648	0	0.97	1
	Problem-solving	193377	1	193377	26281	0	0.978	1
Nationality	Withdrawing	3.34	2	1.67	0.136	0.873	0	0.071
	Forcing	25.83	2	12.91	1.921	0.147	0.007	0.399
	Smoothing	0.27	2	0.13	0.02	0.98	0	0.053
	Compromising	80.72	2	40.36	4.491	0.012	0.015	0.768
	Problem-solving	2.31	2	1.15	0.157	0.855	0.001	0.074
Family Structure	Withdrawing	21.66	1	21.66	1.765	0.185	0.003	0.264
	Forcing	11.18	1	11.18	1.664	0.198	0.003	0.251
	Smoothing	22.90	1	22.90	3.365	0.067	0.006	0.449
	Compromising	2.03	1	2.03	0.227	0.634	0	0.076
	Problem-solving	5.19	1	5.19	0.706	0.401	0.001	0.134
Nationality*Family Structure	Withdrawing	18.77	2	9.39	0.765	0.466	0.003	0.18
	Forcing	**48.43**	**2**	**24.21**	**3.602**	**0.028**	**0.012**	**0.666**
	Smoothing	**64.45**	**2**	**32.22**	**4.736**	**0.009**	**0.016**	**0.791**
	Compromising	18.54	2	9.27	1.032	0.357	0.004	0.231
	Problem-solving	16.45	2	8.2	1.118	0.328	0.004	0.247

As seen in Table 4, it was seen that there were significant differences in forcing F (6.78) = 3.602 p = .028; ηp2= .012) and facilitator F (6.578) = 4.736 p = .009; ηp2= .016) conflict resolution styles in terms of the interaction of nationality and family structure. To determine the source of these differences in the forcing and smoothing conflict resolution style, the Tukey test was utilized to make a pairwise comparison by considering the nationalities and family structure variables together. As a result of this test, there was a significant difference in the forcing conflict style in pairwise comparisons, while there was no significant difference in the comparisons between the groups in the smoothing conflict resolution style. In the post-variance comparisons of the forcing conflict style, there was a significant difference only between Albanian students with extended families and Bosnian students with extended families (mean difference = 15.42, SH = 0.48, p = 0.019). Thus, it was found that the level of forcing conflict style (X=16.88, n=2.06) of Bosnian students with extended families was significantly higher than the level of Albanian students with extended families (X=15.34, n=2.56).

Qualitative Results
Results related to the question, "With whom and in what situations do university students of different nationalities living in Kosovo have conflicts?"
Information was obtained through semi-structured interviews about whom and in what situations university students from different nationalities living in Kosovo had conflicts. It was observed that students may experience conflicts with those in the business environment, family members, friends, close environment, and service sector employees. Among the people that experience this conflict, it is noteworthy that the most intense conflict is with those in the work environment and then with family members. Also, it was seen that Bosnian students more frequently state that they have conflicts with their family members.

Examining the situations in which university students from different nationalities living in Kosovo experience conflict, it was seen that students experience conflicts in their daily lives such as verbal conflicts, conflicts of opinion, business environment conflicts, family environment conflicts, personality-character conflicts, conflicts caused by injustice-unjust, conflicts caused by not obeying the rules, conflicts in the environment of friends, avoiding conflict and arguing. Thus, some of the students avoided conflict environments and some of them avoided conflict and discussion, while

others stated the sources of conflict. Analyzing depending on their nationalities, it was seen that Albanian and Turkish students express more that they experience conflicts due to differences of opinion. It is noteworthy that students have the most verbal conflicts in all nationality groups.

Results related to the behaviors of university students of different nationalities living in Kosovo in conflict situations

In the study, information was obtained from university students of different nationalities living in Kosovo about what behaviors they exhibit in conflict situations with (1) people whom they see as an authority (administrators, parents, teachers, etc.), (2) people younger than themselves, (3) close friends, (4) people they do not know, and (5) family members through semi-structured interviews. The density graphs of the codes based on this information by nationality are as follows.

Results related to the conflict with people whom individuals see as an authority (manager, parents, teachers, etc.)

Examining the codes obtained regarding the reactions of the students during the conflict with the authority depending on their nationalities, it was seen that the students generally tried to express themselves during the conflict with the authority, regardless of their nationality. Among the Turkish students participating in the study, calmness, and silence, if they cannot compromise, appeared as the reactions they adopt more frequently during the conflict with the authority. Considering these behaviors, it can be argued that they use the avoidant style in situations where there is a conflict with the person they see as the authority. Albanian students can use the forcing style, in which they can give various non-compromising reactions such as being rude, getting angry, being hurtful, getting away from the environment, and walking up to their counterparts in conflict situations. It can be argued that Albanian students indicated that they can use the forcing style in situations where there is a conflict with the person they see as the authority within the framework of the behaviors they use. It was seen that Bosnian students can give reactions such as being silent during the discussion with the authority, being compromising in trying to resolve the conflict and avoiding conflict. Regarding the behaviors exhibited by the Bosnian students, it can be argued that they use avoidant and compromising styles in situations where there is a conflict with the person they see as the authority.

Results related to the conflict with younger people

Examining the codes related to the reactions of the students during the conflict with the younger ones depending on their nationality, it was seen that the students convey their experiences or give advice during the conflict with the younger ones regardless of their nationality. Similar to conflict with authority, students' attempts to express themselves is another common reaction they show in conflict with younger people. Also, examining the density of the codes, it was seen that the responses are not significantly related to the nationalities of the students, that all students generally exhibit more positive behaviors and express more compromising style.

Results related to the conflict with close friends

Examining the codes related to the reactions of the students during the conflict with their close friends depending on their nationality, it was seen that the students try to express themselves in a similar way to the previous ones during the conflict with their close friends, regardless of their nationality. In terms of nationality, it was seen that Albanian students rarely state that they have conflicts with their friends. Bosnian students, on the other hand, state that they behave towards seeking their rights during the conflict. It was seen that Turkish students exhibit substantially varying behaviors during the conflict.

Results related to the conflict with someone the individual doesn't know

Examining the codes related to the reactions of the students during a conflict with someone they do not know according to their nationality, it was seen that the students generally give reactions to express themselves, similar to the previous ones, at the time of conflict with someone they do not know, regardless of their nationality. Bosnian and Turkish students state that in case of conflict with someone they do not know, they keep calm and give reactions to avoid conflict. It can be stated that this indicates that Bosnian and Turkish students use the avoidant style when they have a conflict with someone they do not know.

Results related to the conflict with family members

Examining the codes related to the reactions of the students during the conflict with the family members according to their nationalities, it was seen that the students try to express themselves, similar to the previous ones, during the conflict with the family members regardless of

their nationality. Albanian and Turkish students stated that they give reactions such as being respectful, expressing themselves, being compromising, and avoiding conflict in case of conflict with their family members. Considering the reactions of Albanian and Turkish students, it can be argued that they prefer the compromising style and the withdrawing style in the conflicts they experience with their family members.

5. Discussion
Withdrawing, forcing, smoothing, compromising and problem-solving conflict resolution styles of university students were examined according to their nationality, gender, and family structure, and Turkish students preferred the compromising conflict resolution style more than Bosnian students. In the post-variance comparisons of the problem solving conflict style, it was seen that only Albanian students with extended families preferred the problem solving conflict style more than Bosnian students with extended families. There were no differences depending on the gender. It was observed that students may experience conflicts with those in the business environment, family members, friends, close environment, and service sector employees, and it is noteworthy that conflicts are most intense with those in the business environment and then with family members. It was observed that students experience conflicts in their daily lives such as verbal conflicts, conflicts of opinion, conflicts in the work environment, conflicts in a family environment, personality-character conflicts, conflicts arising from injustice-unjust, conflicts arising from not obeying the rules, conflicts in the environment of friends, avoiding conflict and arguing. It can be argued that Turkish students use the withdrawing style, which they adopt more often, to remain calm during the conflict with the authority and to remain silent if they cannot compromise. Albanian students can use the forcing style, in which they can give various non-compromising reactions such as being rude, getting angry, being hurtful, getting away from the environment, and walking up to their counterparts in conflict situations. It was seen that Bosnian students can give reactions such as being silent during the discussion with the authority, being compromising in trying to resolve the conflict and avoiding conflict.

Within the scope of this research, conflict resolution styles of university students (withdrawing, forcing, smoothing, compromising and problem-solving) were examined depending on their nationality and gender. The results revealed that the conflict resolution styles of university students living in Kosovo did not differ in terms of gender. Numerous studies consistent with this result obtained in the present research were found in the literature (Çevik, 2017; Duser, 2002; Korabik et al., 1993; Sargın et al., 2007). Apart from the university sample, some studies found that conflict resolution styles do not differ according to gender in studies conducted with high school students and adolescents (Bircan, Bacanlı 2005; Dede, 2015; Türnüklü, 2007). These findings were consistent with the findings obtained in the study.

Many research results that determined that conflict resolution styles differ in terms of gender were not consistent with the findings of the present study. Research findings reveal gender differences in conflict resolution styles also vary. In some of these studies, it was found that women use withdrawing, smoothing and compromising conflict resolution styles, while men use forcing style more in conflict resolution (Bahadır, 2006; Brahnam et al., 2005; Chan et al., 2006; Golnaz, Morteza, 2003; Önder, 2008; Tezer, Demir, 2001; Rosenthal, Hautaluoma 1988; Sevim, 2005). Contrary to the findings that university students use more positive and constructive conflict resolution styles than men, studies have also found that male students use the withdrawing style in resolving conflicts (Ting-Toomey, 1986) and that women use more competitive styles to resolve conflicts than men (Bedell, Sistrunk, 1973). The result of the study revealed that conflict resolution styles do not differ in terms of genders can be associated with the fact that participants of both genders become desensitized to chronic conflicts and normalize the conflict situation. Also, the absence of gender differences in the context of Kosovo suggested that both men and women have more egalitarian gender roles.

It was determined that there was a significant difference in only compromising conflict resolution style depending on nationalities, and other conflict resolution styles did not show any difference depending on nationalities. The research findings showed that Turks preferred the compromising conflict resolution style at a higher level than the Bosnians. Many research findings revealing nationality differences in conflict resolution styles were found in the literature (Bozoğlan, 2010; Sargın, Bozoğlan, 2010; Cai, Fink, 2002; Cushman, King, 1985; Gunkel et al., 2016; Nomura,

Barnlund, 1983; Rahim, Psenicka, 2002). Kozan (1990) obtained findings similar to the results of the present study, reporting that managers from Turkish culture used the compromising conflict resolution style more than the managers from the USA. In another study conducted in Balkan countries, it was determined that participants from Balkan countries, especially Albania and Macedonia, used the compromising style more, while the Turkish and Bulgarian participants used the compromising style partially (Bozoğlan, 2010). Contrary to the results of the present study, a study concluded that individuals belonging to Turkish culture used passive methods in resolving conflicts, as opposed to the compromising style (Sargın, Bozoğlan, 2010).

The fact that Turks use the compromising style at a higher level than Bosnians in the study can also be explained by their lifestyles. While Bosnians generally live with individuals belonging to their national affiliation in smaller settlements outside the city, Turks in Kosovo continue their lives in cities and have the opportunity to work in various institutions and organizations. One of the important factors for the Turks in Kosovo to access these opportunities is that after the war, Turkey assisted in both economic and social fields to support the Kosovo Turks. Turkey operates in Kosovo with 250 companies and is among the countries that make the most direct investments in Kosovo (Çesko, 2015). It can be argued that the Bosnians living in Kosovo, on the other hand, do not have such support and are more disadvantaged as a minority compared to the Kosovo Turks. The diversity of workplaces, institutions, and organizations in cities also requires dealing with many different individuals. In this case, it gives the Turks in Kosovo the opportunity to respect the ideas of the people they are dealing with, and to live in an environment where they can easily express their own opinions. The compromising style also requires people to make certain sacrifices in conflict situations and to care about both their wishes and the wishes and goals of the other party (Johnson, Johnson, 1994). Therefore, it can be concluded that the Turks in Kosovo use the compromising style more than the Bosnians.

Within the scope of the present research, conflict resolution styles of university students (withdrawing, forcing, smoothing, compromising and problem-solving) were also examined according to their nationalities and family structures. Research findings show that Bosnian students with extended families have higher levels of forcing conflict style than Albanian students with extended families. The finding in the study that Bosnian students use the forcing conflict resolution style more than other nationalities in resolving their conflicts can be expressed as a result of the struggles stemming from being a minority other than the legally granted rights. Also, considering that language difference is a social feature that distinguishes ethnic minorities (Çesko, 2015), it can be argued that Bosnians have problems in Kosovo in terms of the language they use. After the war, instead of an official language in Kosovo, the United Nations Mission (UNMIK) in the Kosovo administration accepted Albanian, Serbian, and English as the official language instead of a single official language to ensure the existence of a multicultural, multi-religious, and multilingual society, and also accepted Turkish as an official language according to the structure that constitutes the majority of the population on the basis of municipalities (Çulha, 2008). It can be argued that while this creates freedom for nationalities to use their mother tongue, it also causes segregation. It was inevitable that the Bosnians will be affected as a result of the war in Kosovo. The close similarity of the language used by the Bosnians with the Serbian language can be considered as one of the important problems they experienced after the war. The fact that Bosnians lived with Albanians and Turks in Kosovo and spoke in a language that the majority of Albanians were hostile to caused them to have difficulties after the war. Due to the fact that the 1999 war and the internal conflicts before it were completely based on the use of force, individuals were able to access the rights and freedoms they wanted only when they used force. Therefore, Bosnians may use the forcing conflict resolution style more than other nationalities.

One of the purposes of this study was to determine with whom and in what situations the participants had conflicts. Examining the results within the framework of this purpose, it was seen that the participants mostly had conflicts with those in the work environment and family members. The reasons for experiencing conflicts in the workplace can be associated with the size of the work organization, different thoughts or ideas of individuals, as well as the incompatibility, stress, frustration, and tension that individuals experience with each other (Basım et al., 2009; Tjosvold, 1991). The size of the organizations in the working environment and the heterogeneity of the number of employees can also bring about conflicts (Başaran, 1982). Considering the multi-ethnic

structure in Kosovo, it can be argued that it is inevitable for individuals of different nationalities in the business environment to have conflicts with each other.

The Bosnian students stated that they had more conflicts with their family members compared to other students. In the research, the fact that Bosnian students experience mostly due to conflicts with family members can be explained by the differences of opinion related to having an extended family structure and living in a crowded family environment. Examining the results related to the situations in which the students have conflicts depending on their nationalities, it was seen that Albanian and Turkish students express more that they experience conflict due to differences of opinion. It is noteworthy that students have the most verbal conflicts in all nationality groups. The diversity of Kosovo's population in terms of nationality, religion, and language can bring along differences of opinion and lead to conflicts between Albanian and Turkish participants due to differences of opinion.

Examining the results related to the behaviors of university students of different nationalities living in Kosovo in conflict situations it was seen that there are differences according to the people with whom they have conflict. It can be argued that Turkish students use the withdrawing style in situations where there is a conflict with the person they see as the authority whereas Albanian students use the forcing style more, and Bosnian students use the withdrawing and compromising styles. Evaluating the results, 92 % of the population of Kosovo consist of Albanians (Uysal, 2011) and, in addition, the fight for the independence of Kosovo (Agolli, 2019) can be a possible explanation of the problem-solving style of resisting and resolving conflicts in line with their wishes more in conflict situations with the constitutional rights of forming the majority of the population. Even though Turks and Bosnians have constitutional rights due to their minority status, they are usually a minority in the conflicts they experience with the authority, because of the Albanian national affiliation of the authorized persons in the business environment.

It was seen that the participants in the study generally exhibit more positive behaviors and use the compromising style more than the other conflicts during the conflict with their younger counterparts. This result was associated with the fact that individuals of all nationalities use the compromising style more to set an example for those younger than them and to make them feel and teach that their own goals and wishes and the wishes and purposes of the other party are important.

It was seen that Albanian students participating in the study rarely stated that they had conflicts with their close friends. It can be argued that Turkish and Bosnian students seek their rights during the conflict, try to express themselves, and use the compromising style. This result was associated with the fact that the friendship relations of individuals of different nationalities living in Kosovo are usually close friends with people of their nationality, and therefore Albanians rarely experience close friends of their nationality due to their nationalist ties. It can be argued that Turks and Bosnians try to resolve their conflicts with their close friends with a compromising style since they are minorities, they are more sensitive to each other and they want to protect their integrity.

It can be stated that Bosnian and Turkish students, who participated in the study, also use the withdrawing style with more conformity in case of conflict with someone they do not know. It can be argued that Albanian participants use the forcing style more. This result was associated with the fact that Albanians use a forcing style in case of conflict with the other person, with the sense of belonging and confidence that they have a greater say in the country, while Turks and Bosnians always follow the majority in conflict situations before and after the war.

It was seen that Albanian, Turkish and Bosnian students participating in the study generally prefer the compromising style and the withdrawing style during a conflict with their family members. This result obtained in the present study can be explained by the fact that the multi-ethnic individuals of all nationalities in Kosovo have strong family ties, and they use the compromising style and the avoidant style more not to escalate the conflicts and to prevent the fraying of family ties.

6. Conclusion

Making an overall evaluation of the results obtained during the research process, it was determined that there was a significant difference only in the compromising conflict resolution style depending on nationalities, whereas other conflict resolution styles did not show any difference according to nationalities. It was shown that Turks prefer compromising conflict resolution style at a higher level than Bosnians. Also, it was found that conflict resolution styles of university students of

different nationalities did not differ significantly in terms of gender and perceived introversion/extraversion personality traits. In terms of family structure, it was determined that Bosnian students with extended families had higher levels of forcing conflict style than Albanian students. Also, it was revealed that students have more frequent conflicts with individuals in the work and family environment, and exhibit behaviors to express themselves in conflict situations. Evaluating the qualitative and quantitative results of the research together, it was seen that the people living in Kosovo generally prefer more compromising and more smoothing conflict resolution styles. Considering the traumatic experiences in Kosovo, the prominence of positive conflict resolution styles can be considered as positive results for coexistence and social peace. Making an overall evaluation, it was observed that the equal roles of men and women in the Kosovo culture are reflected in the research findings. In this context, it is seen that men and women prefer similar and more positive conflict resolution styles. It can be argued that this mediates the resolution of conflicts between individuals without the use of violence and force.

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Academic Literacy as a Component of Complex Thinking in Higher Education: A Scoping Review

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Abstract

The profound transformation within higher education institutions is increasingly evident. Then, it is considered that education must adapt to meet the needs of qualification and skills development in a 21st century with diverse challenges in problem solving. This is reflected in the role that academic literacy is increasingly taking as a strategy to innovate teaching among university students. The objective of this scoping review is to complete a characterization of complex thinking in both academic literacy and higher education. All this, providing an overview on the central theme and its incidence in the production of relevant literature published in the Scopus database. About 139 research works were considered in the article, which become thematic references for the exercise proposed here. Then, a description of all the works consulted was completed, recognizing mainly their origin, citations, publication, and other aspects that will ultimately be essential to differentiate the term academic literacy from the processes of reading and writing as educational competencies. Therefore, in general, the conclusions indicate that complex thinking has indeed a relationship with academic literacy not only because of the works traced but also because complex reasoning brings together within people a series of skills that facilitate the execution of advanced actions and the solution of problems.

Keywords: academic literacy, complex thinking, reasoning for complexity, higher education, educational innovation, university.

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1. Introduction

Technological advances derived from the different industrial revolutions have led to significant changes in the way companies and societies generate diverse solutions adapted to the circumstances in order to meet certain human needs (Charter, Tischner, 2001). Thus, the generation of new products constitutes not only the basis of contemporary commerce, which can promote the general welfare within the states, but also stands as the most forceful response to the solution of problems. Strikingly, this whole situation is gestated in most cases from the academy, mainly within the higher education system, where subjects acquire various skills and abilities that allow them to become better qualified to respond precisely to the needs of societies in general. It is for all these reasons that governments today are fully aware of how important it is to implement public policies that stimulate different entrepreneurial initiatives among the population. All this because these measures can end up favoring the economic dynamics of the states and therefore can also solve certain problems related to employment, growth, and social development (Ferguson, 2016; Geyer, Cairney, 2015).

In this way, products (goods and services) are not exclusively the result of how a company analyzes the way of doing things and offers customized solutions. It is also the result of how education and the study of sciences allow people to achieve certain skills that allow them, from knowledge itself, to propose innovative solutions such as technical inventions that provide answers to the incessant questions that arise in the evolution of life itself (Meissner, Shmatko, 2019).

It is here then where the relevance and current contributions of complex thinking can be appreciated, since it can explain at a systemic level how the contemporary productive model depends on the capacity of academia and higher education. This is because the training of profiles increasingly suitable to respond to the multiplicity of needs and requirements demanded by societies in terms of solving problems at a technical level (De Roo et al, 2016).

Therefore, it can be said that the various technological, social, and scientific advances have subsequently led to various transformations in society, the economy and business.

This is why the transition of countries with economies based on industry, increasingly tend to reach economies based on information. This scenario is now a reality in which many governments and their companies are seeking to take advantage of training and capacity building opportunities. All this in a global system that is highly dependent on human resources with high quality knowledge and skills for problem solving (Rios et al., 2020).

It can be said that for the contemporary productive model, the training of people as human resources with high specific knowledge and skills is an essential input for the functioning and operability of any productive organization. In fact, globalization itself has promoted the training of these people with the massification of information and the possibilities of mobility. Stimulating successively diverse flexible profiles that are constantly learning, managing information and data, as well as solving complex problems (Van Laar et al., 2020; Marković, 2008).

Consequently, the people of this XXI century have to face unknown, unpredictable and uncontrollable problems. It is for all the above that the circumstances have pushed society to create new professions that did not exist before, which are adapted to the needs of the present (Dishon, Gilead, 2021). Many of these new undergraduate programs in higher education have also been focusing on addressing the various challenges posed by complex situations in different societies. This is the case, for example, of the depletion of natural resources, the future of energy models, possible new pandemics and many other issues including climate change. Precisely regarding this last issue, education proposes a paradigmatic system of sustainability where students develop the ability to think critically about the nature of knowledge and the ways in which knowledge is produced and validated. Therefore, educating for these skills will require changes in educational practice, pedagogy, and new approaches to learning and teaching (Holdsworth, Thomas, 2021).

Thus, within the intricate filigree of elements that can make up the systems of the present, there are strategic skills for the formation of the professional profiles of the future. This is the case, for example, of complex reasoning, which plays a key role in education in general. Given that this is understood as the ability to bring together within people a series of mental skills that facilitate the execution of advanced actions, the understanding of concepts, the use of logic, the ability to create original ideas as well as the decomposition of problems. In other words, complex reasoning within science itself constitutes in higher education a key and indispensable competence for the pursuit of success in the solution of problems in different areas. This is why it is widely linked to intelligence.

This is because those who achieve the development of specific competencies in reasoning for complexity have the ability to harmoniously relate information and data from different sources in order to propose logical solutions (Benferhat, Besnard, 2001; Zeidler et al, 2022).

It is precisely at this point where the central theme of this work takes the expected transcendence. This is because academic literacy in higher education becomes an essential element to promote, not only from reading but from other much more complex skills, all the human potential. Essentially, so that individuals can develop as qualified people from the perspective of knowledge and competence formation (Carlino, 2005; Castelló, 2014). For this reason, it is possible to affirm that within higher education it is vital that students also master certain communicational skills in order to achieve high academic literacy competencies. Precisely because these skills can allow, from written and printed materials as well as multimedia materials, that professionals are not only relating diverse contents to each other; but also renewing their capabilities from the availability of recent information to keep all their knowledge updated to the new realities (Van Deursen, Van Dijk, 2011; Domínguez et al, 2018). In fact, within higher education, academic literacy involves within its raison d'être, the set of notions and strategies essential to participate in the discursive culture within the different disciplines within knowledge. In other words, academic literacy also has to do with the activities of production and analysis of texts essential for learning at the university. It even has to do with all the pedagogical background that impacts the learning process; all of this, considering also practices associated with language and thought, all of which are proper to the scope of a scientific and professional community (Carlino, 2013).

It should also be added that within academic literacy, the role of the curriculum and the way in which institutions of higher education within the academy structure their teaching processes is profoundly important. This is because universities should strive to ensure that students reach a level of awareness that allows them to know how information acquisition processes occur in general. Therefore, students and then professionals must be able to adapt quickly to the changing conditions experienced not only in their fields of action but also in scientific knowledge in general (Khusainovaet al., 2015; Stehle, Peters-Burton, 2019).

In this sense, the main objective of this study is to establish a literature review that investigates the behavior of publications related to academic literacy and higher education in the framework of reasoning for complexity. The consultation of related works will then proceed from Elsevier's Scopus database considering its remarkable and recognized impact at the level of scientific production internationally. In this way, the present study will make a notable contribution to the understanding of the subject in terms of the recognition of the main generating regions of scientific material of this type, outstanding authors, referential works by citation, among other aspects. The above, since not only the most relevant works on the delimited fields are compiled, but also conceptual precisions and outstanding relationships will be established with respect to the subject under study and its incidence in the transformation of professional profiles.

2. Methodology

The present approach to complete this scoping review considers five stages (Arksey, O'Malley, 2005), see Figure 1, where a rigorous process of transparency is implemented, which is emulated in this research in order to ensure the reliability of the results of the study. In any case, it is also important to add that a scoping review seeks within scientific research to outline in a general way the key concepts and terms that make up an area of research (Mays et al., 2001). Likewise, this type of approach, where certain types of scientific publications are analyzed, seeks to recognize the main sources and types of works available in order to characterize a topic at a descriptive level, especially when an area is complex or has not been exhaustively reviewed.
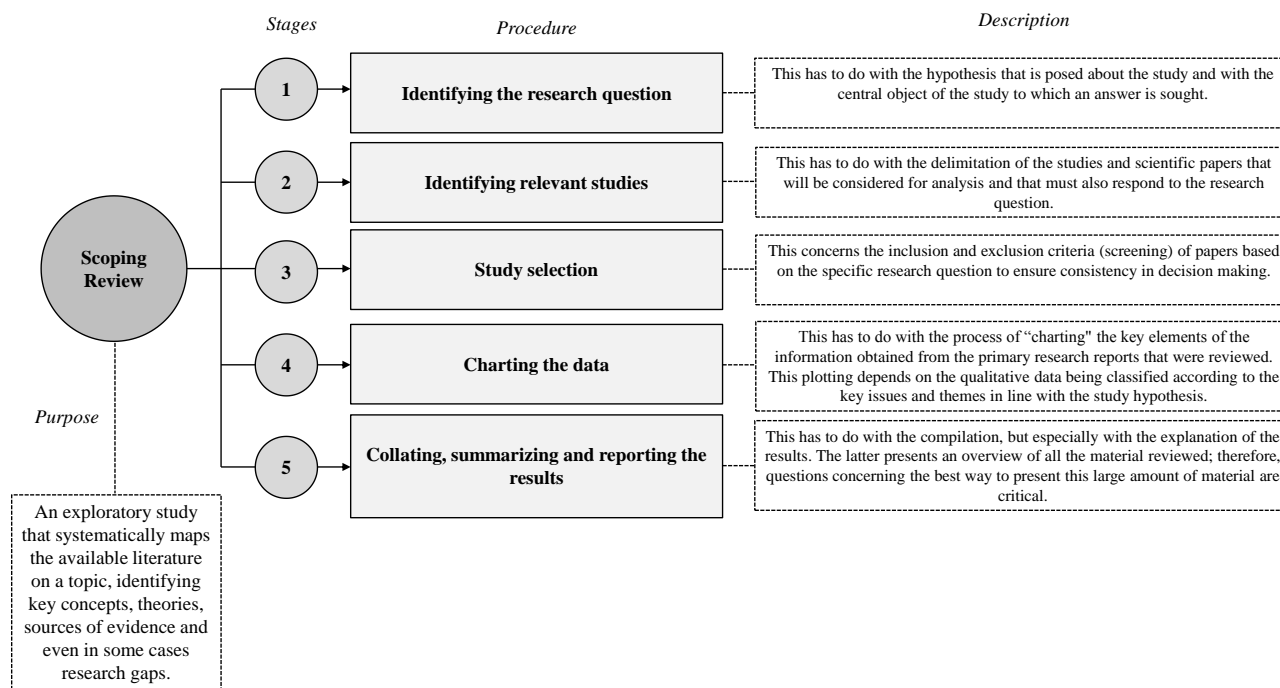
Fig. 1. Representation to carry out a Scoping review
Source: Own elaboration based on Arksey and O'Malley (2005)

In this way, considering a methodology just like this, each stage within this study is specifically delimited by the following basic parameters and research questions (O'Flaherty, Phillips, 2015):

1. Identifying the research question: in this case, the central question is... *what is known about the existing literature on academic literacy in higher education in the context of complex thinking?*

Although they can also be considered complementary questions, supported by the objectives, such as:

- What are the key terms most frequently used in scientific articles in the context of higher education?
- What are the most frequent terms related to the concept of academic literacy?
- What methodological approaches have been used for the study of academic literacy?
- What are the main countries where academic literacy studies have been carried out?
- What is the sample/population in which the concept of academic literacy has been studied?
- What is the impact of publications on the concept of academic literacy?

2. Identifying relevant studies: in this specific case, all the documents related to the central theme according to the search criteria (see Table 1) and keywords, indexed in Scopus, regardless of the period of publication, are considered.

3. Study selection: in this case, papers and studies that are irrelevant because they do not meet the criteria established according to the central theme on complex thinking, academic literacy and higher education are rejected.

4. Charting the data: in this case, the present stage is carried out in the results section of this article where the authors analyze which are the most suitable potential figures to answer the research questions in line with the hypothesis of the article.

5. Collating, summarizing, and reporting the results: in this case, the results of the study should take into account that this section should not only present the most relevant figures, values and indicators, but also that all of these should clearly explain what is happening with the documents analyzed.

Some studies also suggest adopting a broad definition of key words for the search terms in order to obtain "broad coverage" of the available literature (Arksey, O'Malley, 2005). Hence, the key concepts and search terms were developed to capture literature related to "complex thinking

and academic literacy within higher education." While there may be a variety of databases where various documents can be tracked; in this case, Elsevier's Scopus is used exclusively as a starting point for tracking the material to be analyzed. The descriptive linked key search terms adopted to guide the search are described in Table 1.

Table 1. Search terms to adopt in Scopus

Search criteria and keywords for this study
(TITLE-ABS-KEY ("academic literacy") OR TITLE-ABS-KEY ("academic alphabetization") OR TITLE-ABS-KEY ("digital alphabetization")
OR TITLE-ABS-KEY ("digital transformation") AND TITLE-ABS-KEY("higher education")) AND (complex*) AND (LIMIT-TO (PUBYEAR, 2022)
OR LIMIT-TO (PUBYEAR, 2021) OR LIMIT-TO (PUBYEAR, 2020) OR LIMIT-TO (PUBYEAR, 2019)
OR LIMIT-TO (PUBYEAR, 2018) OR LIMIT-TO (PUBYEAR, 2017))

Source: Own elaboration

Finally, with the purpose of closing this section, it is essential to point out other approaches that suggest that to achieve the greatest possible rigor in the identification of primary evidence, it is necessary to consider practical aspects of time and budget limitations, which is why inclusion and exclusion criteria are considered in studies of this nature (Kenny et al, 2013).

Table 2. Inclusion and exclusion criteria for the present study

Criteria	Inclusion	Exclusion	Details to consider
Period	2017-2022	Documents that are not part of this range	Search date June 2022
Language	Any language	None	In this case the documents correspond to languages such as English, Spanish, Russian and other African languages
Type of document	Article	Book, Book Chapters, Conference Proceedings, and others	Although there was no restriction for the initial search. After identifying the documents, it was decided to work only with articles
Study focus	Educación superior	All other non-higher education	In this case, documents related to postgraduate studies was allowed
Central topics	Complex Thinking, Higher Education and Academic Literacy	None	All fields of knowledge were considered under the following core concepts

Database	Scopus	WOS and others	Only the publisher Elsevier was considered

Source: Own elaboration

3. Results

After identifying the research in the database and using the search criteria previously indicated, with 141 documents in total, a cooccurrence graph is made in order to identify some patterns that are repeated among all the works considered for this study (see Figure 2). It is ideal to point out that a cooccurrence graph refers to the visual representation of the networks that show the number of times that certain words or concepts are repeated. Thus, this coincidence makes it possible to establish the relationships of dominance and possible frequency in the selection of themes represented by the lexicon of terms applied in the body of the texts considered in a study as in a bibliometric exercise or as in this case in a scoping review (Engels, Kulczycki, 2022).
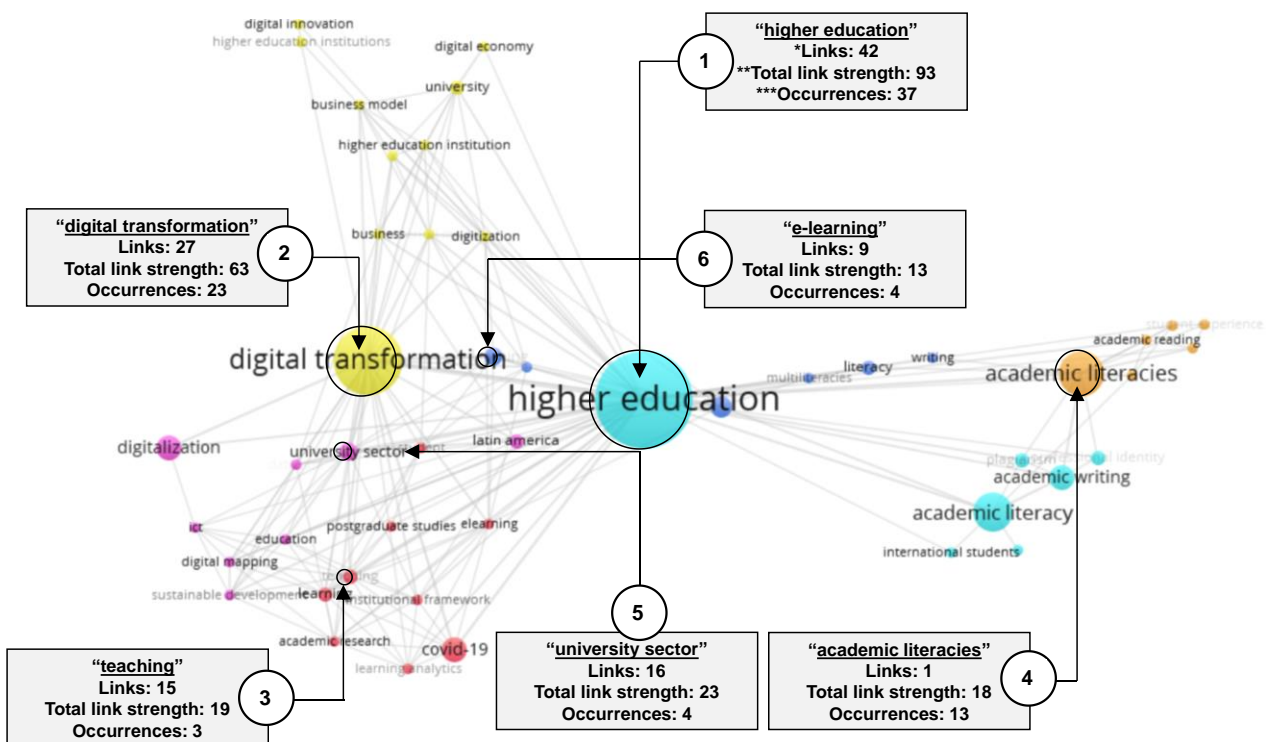

Fig. 2. Co-occurrence in the current study according to the pointed criteria

Notes:
* A link is a connection or a relation between two items. Each link has a strength, represented by a positive numerical value. The higher this value, the stronger the link. The strength of a link may for example indicate the number of cited references two publications have in common.
** The total link strength is an attribute that indicates the total strength of the co-authorship links of a given researcher with other researchers considered within the current case of study.
*** The occurrences attribute indicates the number of documents in which a keyword is repeated. This item indicates the total number of repetitions of a term in all documents considered in a specific study (Van Eck, Waltman, 2017).
Source: Own elaboration based on Scopus (2022)

Thus, it can be said according to Figure 2 that with all the documents considered in this scoping review study, six clusters are generated that reveal the current trends in scientific research according to the search criteria indicated above (see Table 1). Thus, the main concept that is repeated

according to the co-occurrence figure is in first place, "higher education" with 37 coincidences; in second place, "digital transformation" with 23 coincidences; in third place, "teaching" with 19 coincidences. Then, in fourth place, "academic literacies" with 18 matches; in fifth place, "university sector" with 4 matches and finally, in sixth place, "e-learning" with 4 matches.
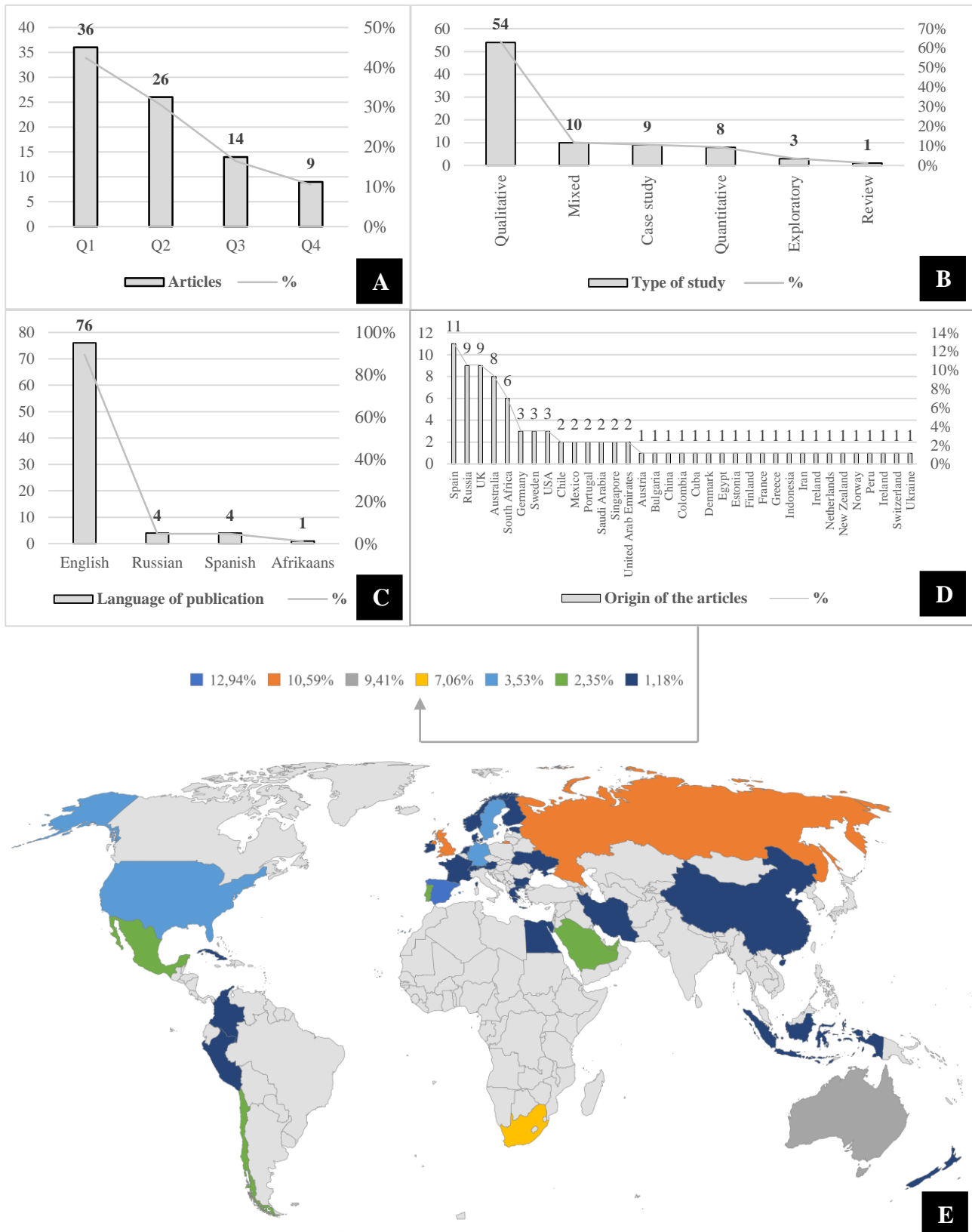

Fig. 3. Some basic indicators about the articles analyzed in the scoping review
Source: Own elaboration based on Scopus (2022)

Subsequently, the current study filters the search, recognizing exclusively the articles (specifically 85) respect any other type of document. The above, considering that mostly of all these types of documents traces in Scopus are precisely articles and because these last also come from publications or scientific journals categorized on quartiles exclusively. In this way, Figure 3 emphasizes in some facts which may be of interest in a scoping review to analyze these group of articles as in this case. Then, it is possible to identify four sections (A, B, C, D and E) which describe, in first place, the quartiles of considered journals where publications come from. In second place, the type of study of the considered articles. In third place, the language of these papers and lastly, in fourth place, the origin of the articles.

It should be added, according to Figure 3 that "A section" in the current scoping review 42 % of articles, 36 in this case, belong to journals categorized in quartile 1 (Q1). 31 % of articles, 26 in this case, belong to journals in quartile 2 (Q2). 16 % of articles, 14 in this case, belong to journals in quartile 3 (Q3) and 11 % of articles remaining, 9 in this case, belong to quartile 4 (Q4).

Regarding "B section", 64 % of articles, 54 in this case, are focused on qualitative studies followed by 12 % of articles, 10 in this case, focused on mixed studies. Later, 11 % of articles, 9 in this case, are focused on case study; also 9 % of articles, 8 in this case, focused in quantitative and the rest of the papers correspond to 4 % with 3 articles and 1 % with 1 article that belong to exploratory and review respectively.

"C section" shows a remarkable primacy in the language of publication because with 89 % of analyzed papers, 76 in this case, English occupies first place followed by Russian and Spanish with 5% equivalents to 4 papers both occupying second place and lastly, Afrikaans with 1 % with 1 article in third place.

Finally, "D section" indicates that 13 % of papers, 11 in this case, come from Spain in first place; 11 % of papers, 9 in this case, come from Russia and United Kingdom (UK) both in second place; 9 % of papers, 8 in this case, come from Australia in the third place. All of them followed by the rest of countries which indicate the origin of the articles.

4. Discussion

In current educational processes, learning has a mainly collaborative influence between teachers and students, although it is increasingly evident that the latter, especially at the higher education level, tend to assume a more relevant responsibility regarding the need to become more qualified and competent for their future work. Therefore, reading, writing, but above all exercising critical thinking in higher education, are present and future needs of societies and their productive model based on knowledge. All this, where organizations and companies in general require individuals with greater ability to adapt to the circumstances and above all with diverse skills to meet the new challenges of contemporary societies (Quitadamo, Kurtz, 2007; OECD ..., 2017).

Likewise, complex thinking as a construct tends more and more to stop being just a conceptual notion under construction, since its original theoretical approaches lead to the establishment of new ways of thinking, reflecting and even investigating in the present in order to approach both truth and objectivity. Which, in short, ends up refining and structuring better its field of action and, above all, its essential characteristics that end up permeating the sciences in general (Berlin, 1990; Tsoukas, Hatch, 2001; Jörg, 2011; Malaina, 2015). Precisely, educational sciences as a discipline that studies the theoretical practices and techniques to analyze, understand and explain the complex problems that occur in different spaces (both formal and non-formal learning); constitute an important tool for the implementation of certain principles of complex thinking. In this way, it is clear that complex thinking can be useful to seek certain means for the solution of problems inherent to the human condition. All this, just as higher education itself intends, since the latter, from a didactic dimension, allows access to knowledge in order to understand certain issues that constitute a means to achieve certain purposes (Wisdom, Leavitt, 2015; Guthrie, Osteen, 2016; Dowd et al., 2018).

According to the above, higher education is then an essential element to better train individuals who hope to better understand the reality that surrounds them as well as to achieve certain professional objectives for their individual future as well as their group future within society. Although the very fact of accessing this position as a university student, after leaving behind secondary education, requires all these individuals to perfect certain skills that ultimately lie both within the framework of the strategies of the university education system itself, as well as

their own teachers. All this, in an academic setting that must be suitable for students in order for them to be able to maintain and adapt in this position that demands particularly high skills and thus avoid dropping out of school. It is then where academic literacy emerges as an essential component within the contemporary model of higher education; in which case, it is not only enough to train students to read and write better, but also to go further by adapting to the technological realities and new scenarios of communication and understanding of any medium that leads to the transmission of information. In this sense, as shown in Figure 4, from complex thinking, academic literacy, and higher education itself, there must be a synergy that ensures that students not only adapt to the university, but also achieve their ultimate purpose of reaching a series of specific knowledge that will allow them to access the labor market (Goodwyn, Stables, 2004; Dale et al., 2011; Hammer, Green, 2011; Kimberley, Thursby, 2020).
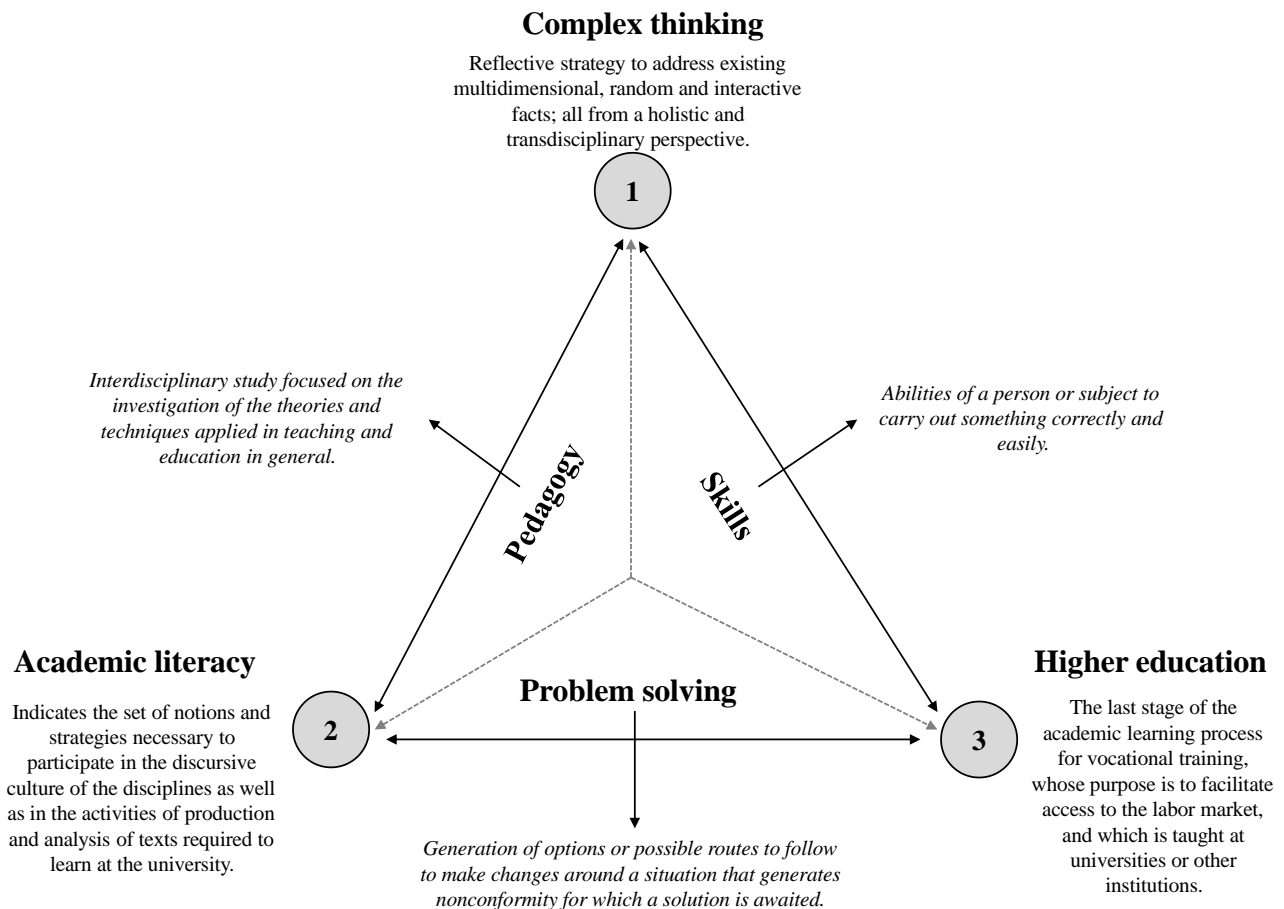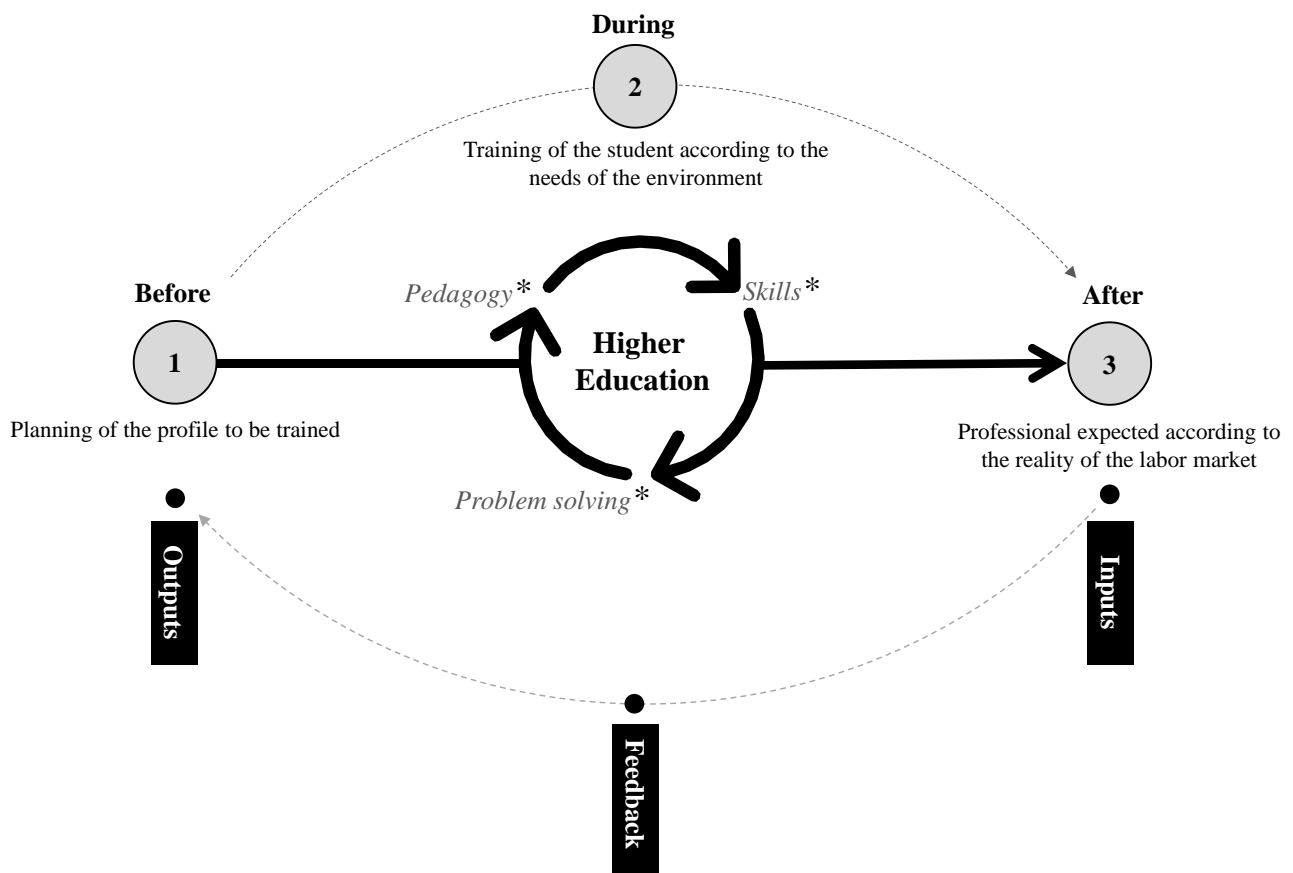
Complex thinking

Reflective strategy to address existing multidimensional, random and interactive facts; all from a holistic and transdisciplinary perspective.

1

Interdisciplinary study focused on the investigation of the theories and techniques applied in teaching and education in general.

Abilities of a person or subject to carry out something correctly and easily.

Pedagogy

Skills

Academic literacy

Indicates the set of notions and strategies necessary to participate in the discursive culture of the disciplines as well as in the activities of production and analysis of texts required to learn at the university.

2

Problem solving

3

Higher education

The last stage of the academic learning process for vocational training, whose purpose is to facilitate access to the labor market, and which is taught at universities or other institutions.

Generation of options or possible routes to follow to make changes around a situation that generates nonconformity for which a solution is awaited.

Fig. 4. The role of complex thinking trough links with academic literacy and higher education
Source: Own elaboration based on Ovens, Hopper and Butler (2013) and O'Flaherty and Phillips (2015)

Thus, from the logic of complex thinking, it is obvious that within the higher education system, academic literacy and the reforms that are carried out must be effective. That is to say that, at the level of content in university programs, these must respond not only to achieve the purpose of educating from what is expected, but also to make adjustments that consider, due to different circumstances of the educational models in secondary education, the possible deficiencies with which students arrive. In the same way, literacy and reforms must also respond by adjusting their contents according to what evidence shows that future professionals require from the feedback received from different professional fields. Therefore, higher education is dynamic, like the very nature of complex thinking, because it is always adjusted taking into account the before, during and after in order to produce the best possible results in terms of qualified professionals (Lea, Street, 1998; Haggis, 2003). Thus, it can be said that the higher education system is only a set of elements that depends, from the logic of complexity, on specific stages. This means, see Figure 5,

that the formative processes that can be seen in the curricula of higher education programs within universities are, after all, a consequence of how academic literacy generates synergies among the axes of education (Gravett, Kinchin, 2020; Heron et al., 2021).

*Dynamic axes

Fig. 5. Dynamic axes and stages within the higher education process
Source: Own elaboration based on Henderson, Ajjawi, Boud and Molloy (2019)

Thus, from the logic of complex thinking, it is obvious that within the higher education system, both academic literacy and the reforms to be carried out must be not only effective but especially innovative. In fact, several studies show that currently universities and other higher education institutions also involve, in various disciplines of knowledge, scientific research as an essential component to improve the results in the training of profiles and the formation of professionals. The learning and teaching model is then also the result of the implementation of various mechanisms derived from the deliberate selection of technical and scientific material. Which, even delve in detail on the curricula and curricular content, since within the academic literacy can end up enhancing job skills such as problem solving of students and future professionals (Koutsantoni, 2006; Willison, 2018). Academic literacy is therefore a deep and structural concept that goes beyond the development of reading skills as traditionally believed. It has to do with how higher education institutions are concerned with adapting their training models to the requirements of the environment. It also has to do with the way in which the curriculum is structured in order to ensure that students can become integral and qualified professionals; all of this, starting from the way in which they are directed and trained in pedagogical terms (Karvalics, 2013; Chang, 2014).

Within the above logic, students should also be interested in following the approach of the educational system in which they participate. This in order to be able to perform appropriately in different disciplines, whatever the field of knowledge in which students are involved. This is why some competencies are becoming more and more relevant, such as scientific research. The latter,

which allows perfecting any academic competence within any branch or field of knowledge itself, given its own nature of deepening and continuing to deepen at a theoretical and practical level in any discipline (Castillo-Martínez, Ramírez-Montoya, 2021).

Regarding academic literacy, it is important to add that it also refers to the dispositions and mental habits that allow higher education students to have appropriate conversations to think, read, write and speak, showing interrelation and mastery at different levels. Then, students must have the ability to differentiate different logical, emotional and personal arguments; in addition, to have skills that allow them to define, summarize, detail, explain, evaluate and many others related to critical thinking. Therefore, academic literacy in higher education is more than a process of qualification in terms of elements alluding to reading improvement capabilities within the student community. It has to do in parallel with how the academy is structured from the way and the approach in which it is taught and learned (ICAS ..., 2002; Romero, Álvarez, 2020; Liyanage et al., 2021).

It seems evident then that from complex thinking, students, teachers, employees, employers, and in fact all individuals, in most cases, due to their transit within the education process, must face problems full of singularities that are increasingly difficult to handle. In any case, while it is true that not all people gain access to higher education, it is an almost incontrovertible fact that the training and development of people's capabilities are usually attributed to the educational systems within any state or paradigm of society. Therefore, academic literacy within higher education marks a clear path to overcome all the new challenges of XXI century full of technological advances as well as social situations that require a proactive training that usually begins at an early age and is consolidated within higher education (Herde et al., 2016; Zajda, 2018). Finally, it can be said that the ability to solve problems, from the complexity itself, is one of the most fundamental skills both for daily life and to make the productive structure of any society feasible, the latter being the guarantor of the economic and social development of any state (Chevallier, 2016; Kocak et al., 2021; Zanuto, Fraga, 2021).

5. Conclusion

The first part of the results showed an intense relationship and co-occurrence in some concepts that are frequently repeated among the 141 documents considered according to the search criteria indicated in Table 1. These are the 6 clusters in this case higher education, digital transformation, teaching, academic literacies, university sector and e-learning. Therefore, all these concepts are not only recurrent themes among current research on academic literacy and complex thinking; but they are also the topics that condition the emergence of new potential issues for research in this scientific field.

Subsequently, it can be added that after limiting the search for papers only to scientific articles, i.e., 85 papers, most of these are found in quartile 1 (Q1) and quartile 2 (Q2). In other words, well over two-thirds, 73 % of the articles, come from journals with the highest research metrics in the Scopus database.

Likewise, within the most dominant types of studies according to the central theme of this research, those with a qualitative method are found with just over two thirds, 64 % of the articles. This is followed by mixed method and case study with 12 % and 11 % respectively. In other words, most of the papers adopt a research model and/or approach typical of the Social Sciences.

Then, as is to be expected, most of the papers, with 84 % of the articles published on the central theme of this research, have been written in English. Thus, it is evident that researchers in academic literacy and complex thinking prefer to direct their work towards journals whose articles are published in English; all this, because this can mean greater visibility of their work within the academy at the international level.

Finally, at present, the subject of academic literacy and complex thinking at the level of scientific publications is led in first place by Spain, in second place by Russia and the UK, and in third place by Australia with 13 %, 11 % and 9 % respectively. This may imply that these countries may be implementing possible reforms in their curricula within their higher education systems; all this, in order to update certain topics that may result in the qualification of their students and future professionals.

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Saving Habits of High-School Students Associated with Their Future Retirement As Financial Literacy Topics

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Abstract

A wide variety of studies have pointed to the relevance of saving at an early age and how an adequate financial culture can generate efficient resource management, meeting the needs of the individual in the future during his or her old age. Derived from this reflection, the purpose of this study is to describe the current state of financial literacy presented by high school students in the Mexican Southeast and how this impacts their retirement savings habits. A non-probabilistic sample of 343 students was analyzed and a test designed by BANAMEX-UNAM (2008) was used to evaluate saving topics, knowledge about retirement, budgets, habits about the use and origin of their resources. Among the most important findings highlights that, in very few cases, savings refer to future projections and a large part of the population analyzed is unaware of basic concepts such as retirement age and institutions for retirement. In addition, evidence was obtained indicating that there is no dependence between gender and information on pensions, in terms of having heard about pensions, understanding pensions and knowing the institution and the age of retirement. Finally, we suggest to carry out a research to compare the level of financial literacy in young Mexicans and its relationship with parental banking, preferably in the southeast and other regions of Mexico.

Keywords: financial literacy, retirement savings, budgets, retirement.

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1. Introduction

The financial literacy term has been approached from different perspectives at the global level in response to a growing need to educate people about it. Given the conditions of social development and the collapse of social security systems, pointing out that economic sustainability will depend largely on citizens and not on government support.

According to the Organization for Economic Cooperation and Development (OECD) cited in Atkinson et al. (2015), education for long-term savings and retirement is a branch that seeks to provide consumers with tools, knowledge and skills that enable them to accumulate the resources to meet their long-term needs, such as pension, education, household support, funeral expenses, among others.

In 2010, Houston found that 72 % of studies analyzing the concept do not propose a specific definition (Warmath, Zimmerman, 2019). However, the commonly accepted OECD definition explains how financial education is "the process by which consumers and financial investors obtain a better understanding of different financial products, their risks and benefits, and, through information or instruction, they develop skills that allow them to make better decisions, which leads to greater economic well-being" (OECD, 2015).

Undoubtedly, the OECD is the institution worldwide that has shown the greatest concern to develop financial education at different levels in all countries so, in 2012, test questions to measure the level of financial literacy were added to PISA (Programme for International Students Assesment) obtaining poor results and very low levels, even in developed countries (Lobos, Lobos, 2018; Lusardi, 2015; Totenhagen et al., 2015).

Evidence points to widespread ignorance of basic knowledge and financial terms such as inflation, budgets, credit and debt, interest rate, savings and risk. Unfortunately, in its application in Mexico, the variables corresponding to financial education were eliminated, in as consequence, there is no data on statistics in our country of knowledge in our students and there is no mechanism to assess the financial capacities of children.

According to Lusardi, (2015) in the world, only 33 % of adults have adequate financial education. In Sweden, Norway and Denmark this figure is 71 %, in Canada 68 % and in the United Kingdom 67 %. It is important to note that in most countries, according to various studies with different objectives, women have been found to have less knowledge than men.

In the analysis generated by the OECD in 2013, *Financial Education in Latin America and the Caribbean*, it was found that although the region has shown sustained growth, the levels of poverty and inequality remain high and there is still financial exclusion, affecting future economic and social development. A high human poverty rate prevails with 31.4 % and 12.3 % of people in extreme poverty (García et al., 2013) (See Figure 1: GDP per capita and poverty level in Latin American and the Caribbean).
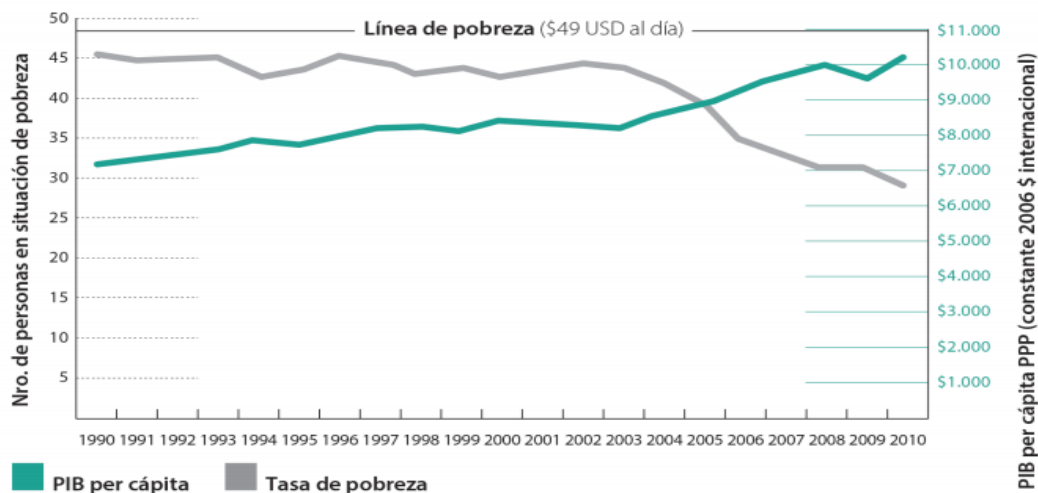

Fig. 1. GDP (PIB) per capita and poverty levels Latin America and Caribe (García et al., 2013)

In the above-mentioned context, it is a priority for countries and policy makers to focus efforts on reducing social inequality and in this search, financial education could be able to develop the necessary skills if implemented from the basic levels, considering at the same time the high school dropout rates in Latin American countries.

Observing the results obtained in the PISA test and its outcome in high school students, today 59 nations in the world are implementing strategies using the principles developed by the OECD, detecting at the local level challenges in the implementation, since several programs have been developed without identifying the needs of the population, target audiences and potential achievements, all leading to ineffective implementation.

According to the standards proposed by the OECD for the creation of strategies for the implementation of Financial Education, there are four fundamental elements to make it effective: i) the development of a diagnosis on the current state of financial education in the country and the barriers it faces; ii) the establishment of institutional arrangements to carry out the creation and implementation of the strategy; iii) the definition of targets and indicators for the evaluation of the national strategy; and iv) a framework of actions to ensure that the provision of financial education is carried out effectively and innovatively in the population (SHCP, 2017).

According to Rudeloff (2019) parents are the main actors in the transmission of financial knowledge to their children and habits, skills and attitudes will be directly related to their own knowledge and financial literacy. On the other hand, in the analysis carried out by Totenhagen et al. (2015), despite the fact that no precise age has been defined at which financial education must begin and the models have not been standardized, states that basic knowledge must be introduced to children before secondary education; that is, teach children basic concepts such as money, savings and other concepts associated with finance, allowing them to participate in a real environment of daily life and introducing them from to financial world implications at an early age.

Similar way, Whitebread and Bingham (2013) point out that good habits and financial behavior are learned from an early age and highlight the importance of financial education from childhood, seeking to make it a trigger for informed decision-making, demand for quality services, market innovation and efficient risk management.

The literature review concludes that among the positive impacts of an appropriate financial education is the reduction of individuals' over-indebtedness and the incidence of people being subjected to fraudulent and risky practices. At the same time, when savings are generated in the formal sector, there are more resources for the financing of productive projects.

Financial services have expanded around the world and this is the reason why governments have shown concern that many consumers do not have enough information and literacy to make the right decisions. This has resulted in voluntary programs in which public participation is very low (Bruhn et al., 2014).

On the other hand, from the educational point of view, the study conducted by Villagómez and Hidalgo (2017) in Mexican high school students, found a positive correlation between the level of mathematical ability and financial literacy. These abilities turn out to be, skills that stimulate logical thinking and the ability to solve problems, positively affecting the ability to plan for the future. In this study, it was concluded that only 10 % of young people of age have the necessary skills to make financial decisions.

In 2015, the average performance set by the OECD was 490 points in mathematics, obtaining the following results: Singapore (564) obtained the highest average of all participating countries, with 74 points above the OECD average; followed by China (548), Macau (544) and Taipei (542). Mexico obtained (408) and it can be seen that our country is above Costa Rica (400), Colombia (390), Peru (387), Brazil (377) and the Dominican Republic (328), as well as the AL average (391); however, it is below the average performance of Chile (423) and Uruguay (418).

In the specific case of the Mexican context, – derived from the change in pension systems in 1996 that replace defined benefit and distribution systems with defined contributions systems and individual accounts-, a necessary change is beginning to emerge that forces the population to take greater responsibility for the planning of their retirement, transferring to the population decisions that require greater knowledge, for example, on interest rates, compound interest, inflation and risk. (Briseño et al., 2019; Villagómez, 2016).

In 2017 the Ministry of Finance and Public Credit (SHCP) carried out a very significant proposal in support of the population called "National Financial Education Strategy", which had as

main purpose to help citizens improve their financial management and achieve greater inclusion of the population in the access and use of financial services. One of the main axes of the above-mentioned strategy is to promote the implementation of financial education in basic education curricula in México, after concluding that long-term policies were necessary to complement efforts and generalize the responsible use of the Mexican population's finances.

The primary objective of the Committee on Financial Education is to contribute to ensuring that the entire population has the necessary knowledge to make efficient and responsible use of financial products and services (García et al., 2013). Among the objectives that were raised, a better use of the personal and household budget and promote formal savings through the use of financial products, financial education in schools and financial services consumer training.

According to the 2018 National Financial Inclusion Survey, there is under-utilization and widespread distrust of financial products and services in our country, based on the following results: 91.7 % of the adult population has never taken any courses on how to save, how to make a budget or on the responsible use of credit, 65.1 % of adults do not have a budget or record of their income and expenses, 31.7 % do not have any financial product, 21.5 % of all adults in Mexico do not save, 15.2 % do so formally and more than double, 31.4 %, do so only informally. 56 % of adults do not have an AFORE (retirement savings account) and only 525 thousand adults have a private pension plan. The use of cash predominates with a wide margin (60.9 %) (INEGI-ENIF, 2018).

Based on the above, it could be concluded that the perceived lack of sufficient income in families, distrust of financial institutions and membership of the informal economy – 60 % of the working population in Mexico – are possible causes for this behavior, in addition to an obvious lack of financial education.

Bruhn, Ibarra and McKenzie (2014) conclude after a study conducted in Mexico City, that the main reason why people do not attend financial education courses is that they do not understand the benefits and do not believe it necessary to acquire skills in the subject. With these arguments, we can say Financial Education is defined as the set of actions necessary for the population to acquire skills and knowledge that allow them to manage and plan their personal finances, as well as making optimal use of the products and services offered by the financial system for the benefit of their personal, family, professional and business interests. To do this, it must be ensured that population is able to plan and manage its finances in the short, medium and long term; it is also important that they know what each financial product and service is for, and to make sure they are able to identify which ones they need at each stage of their life according to their context. This knowledge will enable them to assess and compare the supply of existing financial products and services and to understand risks, benefits, rights and obligations associated with contracting these services, making financial decisions efficiently.

Based on this definition, the present study seeks to measure the level of financial education in the specific topics of saving and saving for retirement specifically in high school students and to identify the traits or characteristics that help to understand the saving habits of young people. Thus, we may ask:

1.1. Question research: What is the financial literacy level in topics such as saving for retirement and pensions in high school students? And if there are differences by gender? It's also important to know if there is a difference among genders about saving habits, retirement age, and institutions for retirement.

2. Literature review
In 1875, Japan established the postal savings system seeking to spread the benefits of saving among the population. From then until after World War II, work continued on the consolidation of the banking sector and savings systems (Yuji, 1989). In the years after the WWII, the world underwent a huge transformation in terms of disposable income and wealth. Financial products and services became more diverse, offering different alternatives to the public as well as more complex products and with this, access to mortgages and investments was generalized but at the same time, many social groups were excluded from access to the financial world; revolving credit appeared and instead of just keeping the money in the bank, people could invest in funds. Unfortunately, the financial skills and aptitudes of the consumer did not grow at the same pace (Ryan et al., 2011).

Modigliani and Brumberg (1954) and Friedman (1957) cited by Lusardi and Mitchell (2014) consider that the consumer organizes saving and spending patterns to generate a profit throughout life and such organization assumes that individuals have the ability to formulate and execute saving plans and possess the experience and knowledge about the environment in a financial market. Between 1957 and 1985, with the purpose of educating the population on general issues involving financial decision-making in the personal sphere, consumer education was established in 29 states in the United States and personal finance training in 40.

Something similar happened in Japan: they established the Central Council for Savings Promotion (1952), the Savings Promotion Department of Japan (1946) and the Savings Promotion Center of the Ministry of Finance (1957). As a result, the savings rate increased, being higher compared with international standards. This might be related to their working culture and the agricultural heritage of storing crops in anticipation of future times of crisis. Furthermore, evidence suggests that Japanese people reason for saving is the expectation of giving their children a better standard of living. In 1989, life expectancy in Japan was one of the longest in the world, which could also be an explanatory factor for the high savings rates in the country (Yuji, 1989).

In the 1990s, it was found that in the United States, the majority of the population saves very little compared to what they need to maintain their lifestyle at the time of retirement. In 1995, Douglas Bernheim, professor of economics at Stanford University -one of the pioneers on financial literacy studies-, noted that government policies and research had until then underestimated the importance of financial literacy in explaining savings and their behaviors and led, from the point of view of savings, a study assuming that increased financial literacy increases the likelihood of people generating savings.

Systematic evidence was found in regards to behavioral effects after including financial topics in the school curricula. At the same time, it was concluded that education can be a powerful tool to stimulate personal savings and that increased financial literacy is needed to raise the frequency and number of people who save and accumulate wealth during their adult lives.

The 401(k) retirement plan is very popular in the United States, however, many employees decide to contribute very little or nothing. A possible reason for this could be rooted in a lack of training and skills or guidance to make plans. Therefore, education could provide the right tools and train citizens on the importance of taking responsibility for financial safety for their retirement (Bernheim, 1998).

Since 1997, the Jump$tart Coalition, a non-profit organization in the United States, has conducted surveys on high school students, finding a significant lack of financial literacy among young people. Despite the fact that, over time, financial markets have become more accessible and offer more diversity of products, users need to be informed about their complexity and the risks associated with financial decision-making.

Chen and Volpe (1998) evaluated personal financial education in students. Based on previous studies that had determined that Americans have low levels of knowledge of personal finance, the authors explore the evidence on student literacy and analyze why some have more knowledge than others and what level of competence they have. Evidence was found that participants with less knowledge tend to make the wrong decisions about savings, lending and investment. They concluded that when individuals are not able to manage their finances, this becomes a major problem for the society and the highlight the importance of providing more education in this field so people can make more informed decisions.

Unlike literacy in general, the concept of financial literacy does not have a single definition but covers different perspectives. To measure it, most researchers and academics have used surveys applied to different groups. The most widely used tool is known as The Big Three, developed by Lusardi & Mitchell in 2005. Academic work has concluded that financial literacy precedes healthy financial behavior. Adams and Rau in 2011, cited by Fernandez and Netmeyer (2014) conclude that "Possibly, one of the most robust findings in the literature is that financial literacy plays a fundamental role in retirement planning".

Recent analysis about financial literacy on the last years show evidence between lower financial literacy and the lower to own a bank account or maintain a retirement plan. At the same time, these individuals tend to have higher levels of indebtedness and chose high-cost financing. The behaviors presented by individuals regarding their level of literacy impact on the quality and quantity of financial products in the market (Gale et al., 2012). It is important to consider that in

developing countries there is a consumption trend that seeks to mimic the way that populations in developed countries do and this generates an increase in their propensity to spend rather than save.

Thus, in various contemporary empirical studies, the topic of financial education is analyzed and discussed, since it can become a fundamental factor in the performance of economies worldwide. Lusardi and Mitchell (2014) conducted a study about previous research on financial knowledge as a part of human capital and its implications for well-being. They also had the objective of analyzing how well households are prepared to make complex financial decisions, concluding that it is necessary to encourage the acquisition of basic financial skills such as maintaining a budget, understanding credit and investment and the advantages of the banking system, given that well-informed consumers will have a better defense against the purchase of unnecessary and costly products and services.

In 2015, Fedorova, Nekhaenko and Dovzhenko conducted an analysis of the Russian population and diagnosed that a higher level of financial literacy contributes to more active participation in financial markets, the individual improvement and prosperity of the economy and society as a whole. At the same time, Totenhagen, Casper, Faber et al. (2015) through an extensive documentary review conclude on the urgent need to identify best practices and methods of effective financial education through the establishment of standards, the knowledge of specialist instructors, parental involvement, early education and the inclusion of financial education in basic education.

From the same perspective, Lusardi (2015) analyzed the results of the PISA test and states that financial literacy can play an important role in explaining inequality in wealth. Furthermore, she argues that financial education from high school is a factor that can increase financial security at the time of retirement, since, by having greater knowledge, individuals will tend to invest in assets and plan for the future, thus becoming an essential skill for the 21st century.

Breitbach and Walstad (2016) proposed that understanding the characteristics of individuals regarding their financial decisions and determining their level of literacy in the field, should be a matter of interest for researchers and governments aiming to develop education programs that improve conditions for young adults, resulting in more informed decision-making, less costly and with less adverse consequences for their long-term well-being.

Berman, Tran, Lynch and Zauberman (2016) analyze how consumers budget their financial future and the possibilities for financial slack from the point of view of the expense neglect and also considering the problem of estimating expenditure based on the possibility of income increase rather than consumption decrease.

Kadoya, Khan, Hamada, et al. (2018) suggest that financial literacy can reduce levels of anxiety in adulthood (40 years – old age) under the assumption that people with greater knowledge in the field can make better decisions, have a better income and thus achieve a greater accumulation of assets that allow them to have greater financial tranquility in old age.

From another perspective, Brown, Henchoz and Spycher, (2018) relate the magnitude and effect that culture has on financial literacy among young people and describe the systematic variations in different dimensions of culture towards financial management, such as financial socialization, rules and attitudes about money in French and German speaking students on the border with Switzerland.

Cruz-Barba (2018) analyzes in a Mexican population the empirical evidence of financial literacy in children of basic education and raises the need to implement a formal financial education through a teaching-learning process in order to achieve economic understanding. Also, the investigation points out the possible negative impact of the financial performance of children as a consequence of their parent's little or no economic-financial training.

According to Amagir, Groot, Maasen and Wilschut (2018), the evidence has shown that the financial education programs included in the school curricula become a key factor to improve the knowledge and attitude towards finance in children and young people, mainly when they are designed as experiential learning. As part of a comprehensive education, they adopt the term "economic citizenship" by referring to people who achieve greater potential within society by having financial skills and better decision-making power. Unfortunately, it was found that the measurement of the effects on the implementation of the above-mentioned programs goes back only 10 years.

Recently, Rudeloff (2019) based on young people's current early access to financial products and services, investigates how informal sources influence adolescent financial literacy and states

that parental learning has a direct influence on student scores in knowledge assessments and suggests greater research into what strategies parents use best to teach finances to their children.

In Italy, Cucinelli, Trivellato and Zenga (2019) describe the role of local factors associated with financial literacy among Italian adults and state that not only socio-economic and socio-demographic conditions have an impact on financial literacy but also the specific characteristics of the regional context have important implications. They also stress the need to incorporate finance into educational programs.

Warmath and Zimmerman (2019) express the need to amplify financial literacy studies to the dimensions of three domains of knowledge: financial skills, self-efficacy and explicit knowledge. Through the study of the variables, the valid ratio of the combination of the three indicators as formative of the financial literacy scale was verified. The research concludes on the need to explore existing opportunities in research, policy modification and programs to create the literacy required for better financial well-being.

Muñoz-Murillo, Álvarez-Franco and Restrepo-Tobón (2020) showed that individuals with greater cognitive abilities also have better financial skills. In another perspective, Panos and Wilson (2020) through a documentary review verified that financial technology or FinTech has the potential to improve financial capabilities, simplify personal finance and streamline planning processes. They also noted the need to visualize and generalize access for the financial inclusion of society.

So, the OECD has taken up financial literacy as a life skill, defining it as an aptitude that should be introduced into the everyday life of young people at an early age, as they will find in their path more complex financial products and services and perhaps greater risks than those that their parents faced at the time (Villagómez, 2016).

In studies applied to the Mexican context, in 2013 Bruhn, Lara-Ibarra & McKenzie conducted a study on the behavior of the population in Mexico City regarding the financial literacy courses given by a prestigious institution on savings issues, withdrawal and use of credit and detected that there is little or no interest among the public as they apparently do not receive the benefits of receiving such training. They add that the only way for people to decide to attend such courses was through monetary incentives given in exchange for their participation. At the same time, they highlight that after having taken the courses, it was shown that financial knowledge increased by 9 %.

According to the OECD/INFE survey conducted by Banco de México in 2017, 92 % of Mexican adults were able to answer a question that measures understanding of simple interest, however, only 3 % were able to answer a question about compound interest. It was also observed that the percentage of correct responses from Mexican adults is below the average of the other G20 countries participating in the OECD measurement exercises. According to the OECD/INFE measurement, there are lags in the attitudes of Mexican adults towards savings compared to other countries (SHCP, 2017).

The results show that about 36 % of the adult population in Mexico "prefers to live to the day and does not care about tomorrow"; 48 % consider that "they prefer to save for the future instead of spending today" and only 32 % consider that "the money is not to be spent". Regarding the measurement of financial behavior, Mexico ranked 13 out of 17 economies involved in the analysis. Regarding the use of savings, 41 % of the surveyed population wants to use their savings in current expenditure. 38 % want to allocate part of the resources for their old age and 39 % for emergencies (SHCP, 2017).

3. Design and Methodology

The objective of the work focuses to assess the level of financial literacy in high school students in relation to their retirement savings habits, in addition, to verify if there are differences by gender. The research has a non-experimental design that is approached from the hypothetical-deductive paradigm, which does not seek to manipulate independent variables (X) to modify the results of dependent variables (Y). The study is cross-sectional, of descriptive type and of difference of means. At first, the characteristics associated with the demographic profile of the surveyed population are described and then the statistical analysis is developed for the comparison of the hypothesis of gender difference, based on the information obtained.

3.1. Population and sample: The population for this study was 343 high school students enrolled in a public sector institution in the city of Veracruz corresponding to the Mexican southeast. The sample was not probabilistic by self-determination since only students who agreed to participate were allowed to be surveyed. The anonymity and confidentiality of the participants and the data obtained were guaranteed, as they are for the purpose of academic research.

3.2. Instrument: To obtain the information, we used the test developed by BANAMEX-UNAM (2008), referenced in the work of Moreno-García, et al. (2017), (see annex 1). Additionally, the savings and budget variables were adapted to the language of the students. For the pension variable, four indicators were designed for its measurement.

3.3. Measurement procedure: The database is processed using IBM SPSS Statistics v23 software. To describe the characteristics of the sociodemographic profile, the frequencies obtained for each item are analyzed and for the hypothesis contrast is performed using the non-parametric procedure of contingency tables and the Chi^2 statistic.

3.4. Analysis and interpretation of information
In relation to the socio-demographic profile of students, 51 % (175 cases) are men and 49 % are women (168 cases). About the age, 32.4 % (111 cases) are 14 years old, 28.9 % (99 cases) are 13 years old and 26.8 % (92 cases) are 12 years old. In addition, it was reported that 83.7 % (287 cases) of the participants still live with their parents and 72.3 % (247 cases) receive financial support from them, while only 7.9 % (27 cases) get additional resources derived from a job. About the work they do, 73.8 % (253 cases) do not work, 8.2 % (28 cases) are employed as family helpers and only 5 % (17 cases) are self-employed. Regarding the saving habits of students, table 1 shows the following results:

Table 1. Savings indicators

What does saving mean?			
Indicator	Frecuency	Percentaje	% ∑
Saving Money	188	54.8	54.8
Have money for emergencies	78	22.7	77.6
Something for the future	28	8.2	85.7
Not spending	6	1.7	87.5
Having money available	42	12.2	99.7
I do not know	1	.3	100.0
Total	343	100.0	
Savings habit			
YES	269	78.4	78.4
NO	74	21.6	100.0
Total	343	100.0	
Savings Frequecy			
Indicator	Frecuency	Percentaje	% ∑
Daily	117	34.1	34.1
Once a week	54	15.7	49.9
Sometimes	98	28.6	78.4
N/A	74	21.6	100.0
Total	343	100.0	

Source: own elaboration

As we can see, in Table 1, 54.8 % of respondents understand the concept of saving as "saving money", 22.7 % consider that saving means having money for emergencies however, highlights that

only 8.2 % are aware that saving means securing something for the future. 21.6 % of respondents do not have the habit of saving, 28.6 % save occasionally and 15.7 % do it once a week.

Table 2. Reasons for saving

Why do you save money?			
Indicator	Frequency	Percentage	% ∑
Savings	57	16.6	16.6
Entertainment	37	10.8	27.4
School expenses	45	13.1	40.5
To buy something you like	107	31.2	71.7
Other	23	6.7	78.4
N/A	74	21.6	100.0
Total	343	100.0	
Decides to save			
Indicator	Frequency	Percentage	%cumm
You save what is left of your budget	148	43.1	43.1
You save when you wish to buy something	67	19.5	62.7
You spare a certain amount	54	15.7	78.4
N/A	74	21.6	100.0
Total	343	100.0	
Reason why you would save			
Indicator	Frecuency	Percentage	% ∑
Emergencies	26	7.6	7.6
Education	11	3.2	10.8
Pesonal expenses	27	7.9	18.7
Savings	3	.9	19.5
To go out with friends	4	1.2	20.7
Vacations	3	.9	21.6
N/A	269	78.4	100.0
Total	343	100.0	

Source: own elaboration

The main results on the reason *why you save* refer to 31.2 % that is to buy something you like and only 16.6 % is to save it. On the question of whether you decide to save, 43.1 % say that they keep something only if they have enough, in addition 19.5 % says that they save when they want to buy or do something and 15.7 % says that they save and for this they dedicate an amount.

In the question that is reconsidered on the reasons why it would save the large percentage (78.4 %) points out the option of does not apply, only 7.9 % for personal expenses and 7.6 % for emergencies, which suggests that there is no clear provision for a reason to save them in the short term.

Table 3. Knowledge about money and budget

What do you use your money for?			
Valid	Frequency	Percentage	% ∑
You do not have extra money	26	7.6	7.6
You save it	213	62.1	69.7

You buy things you like	104	30.3	100.0
Total	343	100.0	
What is a Budget?			
Valid	Frequency	Percentage	% ∑
To plan how to distribute money	134	39.1	39.1
Organize the money you have	143	41.7	80.8
I do not know	66	19.2	100.0
Total	343	100.0	
Do you organize your money?			
Valid	Frequency	Percentage	% ∑
YES	132	38.5	38.5
NO	211	61.5	100.0
Total	343	100.0	

Source: own elaboration

The results in Table 3 show that 62.1 % say they are saving, followed by 30.3 % say they are going to buy things they like. However, when asked specifically about whether they organize the money, 61.5 % say no. Apparently these results contradict the percentage of people who said they save it, which evidently brings with it a decision to do something, and that should definitely start from an organization or administration of your personal finances.

About the knowledge and understanding about budgets, 41.7 % say that it serves to organize what to spend the money you have, followed by 39.1 % that defines it as to plan how to distribute the money and finally 19.2 % say they have no idea what a budget is.

Table 4 shows the issue of pensions, whether they have heard of this term, if they understand what a pension is and if they know the institutions for retirement and the age for doing so.

Table 4. Knowledge about pensions

Have you Heard about pensions?			
Valid	Frequency	Percentage	% ∑
YES	245	71.4	71.4
NO	98	28.6	100.0
Total	343	100.0	
Do you understand pension?			
Valid	Frequency	Percentage	% ∑
YES	229	66.8	66.8
NO	114	33.2	100.0
Total	343	100.0	
Do you know the institutions to pension?			
Valid	Frequency	Percentage	% ∑
IMSS	46	13.4	13.4
SEP	65	19.0	32.4
INFONAVIT	45	13.1	45.5
ISSSTE	33	9.6	55.1
I do not know the institution	154	44.9	100.0
Total	343	100.0	
Age for retirement			
Válido	Frequency	Percentage	% ∑
65 years	134	39.1	39.1
50 years	38	11.1	50.1

80 years	26	7.6	57.7
I do not know the age	145	42.3	100.0
Total	343	100.0	

Source: Own elaboration

The data shown in Table 4 indicates that 71.4 % of respondents have heard about retirement pensions, but only 66.8 % understand the concept and 42.3 % do not know the age at which they can retire. These data provide an opportunity to promote greater dissemination of the topic among university students.

Up to this point, the descriptive results, which have allowed us to visualize the opinion expressed by the students surveyed. Below the tests for the contrasting hypotheses that are sought to contrast.

Non-parametric evidence for the research hypothesis that states that: Hi: There is a dependence between information related to occupational pensions and gender. For this directional hypothesis are broken down into the different variables; a) If they have heard of pensions, b) if they understand about pensions, c) the type of institution to be pensioned and d) the retirement age to be pensioned.

Hence the test for contrast is performed below: Ho_1: There is no dependency between information about having heard about pensions and gender. Ha_1: There is a dependency between information about having heard about pensions and gender

Table 5. Contingency table and chi-squared (χ^2) test gender and having heard about pensions

Heard about pensions	**Male**	**Female**	**Total**
Yes	36.7	34.7	71.4
NO	14.3	14.3	28.6
Total	51.0	49.0	100.0
Chi² Pearson (1 gl)	0.057		.
Significance	0.811		

Source: own elaboration

Table 5 shows that 71.4 % of respondents have heard about pensions, this percentage is higher in men than in women. In relation to those who responded that NO, the percentage of men and women is similar. The value in tables of *chi-squared (χ^2) test* with *df*=1 and an alpha of =0.05 is equal to 3.8415. Since the calculated value of *chi-squared (χ^2) test* is 0.057 is less than the critical point (3.8415) it can be stated that the test value is within the Ho_1 acceptance zone.

With these data we have enough evidence to accept Ho_1, that is there is no dependency between gender and information related to occupational pensions as far as listening about pensions. In addition, the significance value is greater than the level of significance established for this research 0.05.

Regarding to the association between gender and related information in terms of understanding what a pension is, it is established that: Ho_2: There is no gender dependency and information related to occupational pensions in terms of understanding what a pension is, and Hi_2: There is a dependency between gender and information related to occupational pensions in terms of understanding what a pension is.

Table 6. Contingency table and chi-squared (χ^2) test for gender about understanding pensions (%)

Do you understand pensions?	**Yes**	**No**	**Total**
Male	34.4	16.6	51.0
Female	32.4	16.6	49.0
Total	66.8	33.2	100.0
Pearson *Chi² (1 gl)*	.071		
Significance	.790		

Source: Own elaboration

Table 6 shows that 51.0 % of those surveyed understand that they are pensions, this percentage is higher in men (34.4 %) than in women (32.4 %) and those who did not understand the term "pensions" in both cases is very similar (16.6 %). The value in tables of chi-squared (χ^2) test with $df = 1$ and an alpha of = 0.05 is equal to 3.8415 and as the calculated value of χ^2 is 0.071 is less than the critical point (3.8415), then it can be stated that the test value is within the Ho acceptance zone.

Therefore, there is enough evidence to accept Ho, that is there is no dependency between gender and information related to occupational pensions in terms of understanding what pensions are. In addition, the significance value is greater than the level of significance established for this research (0.05). About the association between gender and related information regarding the institutions in which you can retire, it is stated that:

Ho_3: There is no gender dependency and information related to occupational pensions in terms of knowing the institution for retirement, and Hi_3: There is a dependency between gender and information related to occupational pensions in terms of knowing the institution for retirement.

Table 7. Contingency table and chi-squared (χ^2) test gender and institutions for retirement (%)

Gender	IMSS	SEP	INFONAVIT	ISSSTE	I don't know	Total
Male	8.7	10.5	7.0	5.2	19.5	51.0
Female	4.7	8.5	6.1	4.4	25.4	49.0
Total	13.4	19.0	13.1	9.6	44.9	100.0
Pearson *Chi²* (*4 gl*)		7.945				
Significance	0.094					

Source: Own elaboration

Table 7 shows that 44.9 % of the respondents do not know the Official Institutions by which a person can retire. This percentage is lower in men (19.5 %) than in women (25.4 %). The value in *Chi²* tables with $df = 4$ and an alpha of = 0.05 is equal to 9.4877. As the calculated value of *Chi²* is 7,945 is less than the critical value (9.4877) so it can be said that the test value is within the Ho_3 acceptance zone. With this data we have enough evidence to accept Ho_3, that is, there is no dependency between gender and information related to occupational pensions in terms of knowing the Official Institutions by which a person can be pensioned. In addition, the significance value is greater than the level of significance established for this research (0.05).

In relation to the association between gender and related information on retirement age the hypothesis states: Ho_4: There is no dependency between gender and information related to occupational pensions in terms of knowing the age of retirement. Hi 4: There is a gender dependency and information related to occupational pensions in terms of knowing the age of retirement.

Table 8. Contingency table and chi-squared (χ^2) test gender and retirement age (%)

Gender	Retirement age (%)			I don't know	Total
	65 years	50 years	80 years		
Male	18.7	6.4	3.2	22.7	51.0
Female	20.4	4.7	4.4	19.5	49.0
Total	39.1	11.1	7.6	42.3	100.0
Pearson *Chi²* (*3 gl*)		2.524			
Significance	0. 471				

Source: Own elaboration

Table 8 shows that 22.7 % of respondents do not know the age at which a person can retire, this percentage is higher in men (22.7 %) than in women (19.5 %), it is also higher than the percentage of men who have not heard of pensions. The value in *chi-squared (χ^2) test* of tables with values of $df = 3$ and $\alpha = 0.05$ the value is equal to 7.8147. Since the calculated value of *chi-squared*

(χ²) test is 2,524 is less than the critical value (7.8147) it can be stated that the test value is within the Ho acceptance zone, hence there is enough evidence to accept Ho, that is there is no dependency between gender and information of occupational pensions in terms of knowing the Official Institutions by which a person can be pensioned, in addition the significance is > that the significance established for this research (0.05).

4. Discussion

Based on the results obtained, the study questions are answered in the following terms. Regarding the level of financial literacy in retirement savings and pensions, which is observed in middle school students we can say that there is a good percentage of them who understand that saving (54.8 %) is saving money, and that this will help them buy something they like (31.2 %), however, only 43.1 % saves if they have money left over.

The worrying thing about the case is the high percentage that answered the question about what would be the main reason *why I would save*, being 78.4 % who answered the option of NOT APPLIES, understanding this, as there is no definite reason to carry out the saving. Apparently, these habits do not pay for the future retirement, that is, although they understand the concept of saving money, they only do it when they have money left over, but not for a specific purpose as would be savings for retirement.

This leads us to think that they have not been educated from within the family, since according to Totenhagen et al. (2015), financial knowledge must be introduced within the family, before secondary education in concepts such as saving and money, which would help them contextualize the real life in which they live. It is important to consider that good habits are reinforced from an early age, as referred by Whitebread and Bingham (2013).

Regarding the variables of money and budget, 62.1 % said that the money they receive serves to save, although they do not have a defined plan, since 61.5 % responded that they do not organize their money. 41.7 % seem to use the budget and use it to organize what they will spend their money on, and very specifically 39.1 % say they use it to plan the distribution of their money. On the other hand, 71.4% of students have heard about retirement pensions, 66.8 % understand the concept and 42.3 % do not know the age at which they can retire. It is clear that there is contradiction in some answers, which leads us to think that it is the confusion that prevails in them over these concepts.

The lack of financial literacy at an early age from within the home may be what makes the difference, as the curricula at the basic levels have not formally instituted the topics of financial literacy, which could contribute to the literacy of children. This supports what Warmath and Zimmerman (2019) say about the need to modify policies and programs that help improve literacy for better financial well-being.

Similarly, this study seeks to answer whether there is gender difference in the habits of saving, the age of retirement and the type of institution to be pensioned. For this, a guiding hypothesis is proposed that states: Hi: There is a dependency between information related to occupational pensions and gender, otherwise (HO) there is no dependency. For this hypothesis it is broken down into the different variables; if you have heard about pensions, if you understand about pensions, if you know the type of institution to be pensioned and the retirement age to be pensioned.

Similarly, this study seeks to answer whether there is a gender difference in the habits of saving, the age of retirement and the type of institution to be pensioned. For this, a guiding hypothesis is proposed that states: Hi: There is dependence between information related to occupational pensions and gender, otherwise (HO) there is no dependency.

For this, hypothesis it is broken down into the different variables; if you have heard about pensions, if you understand about pensions, if you know the type of institution to be pensioned and the retirement age to be pensioned.

The results provided evidence to support that there is no dependency between gender and information related to occupational pensions in terms of hearing about pensions, to understand that they are pensions, to know the institution for pensioning and the retirement age.

It is clear that the students (men and women) have shown some deficiencies in the financial knowledge, specifically in the topics that were addressed in this work as they are: savings and pensions for retirement. That is why the involvement of parents is of particular importance, since the transmission of financial knowledge derived from them becomes a key factor children education at an early age and helps them to develop skills that favor their level of financial literacy,

as has been pointed out by the studies of Whitebread and Bingham, (2013), Totenhagen et al. (2015) and Rudeloff (2019).

5. Conclusion

In the studies on education and financial literacy we seek to know among other topics, the knowledge that prevails in the different populations that are analyzed in the topics such as: savings, pensions, insurance, credit cards, credit to name a few. It has also sought to assess the skills and attitudes prevailing in young populations, since it has been a priority on the agendas of countries in the world to set up programs to promote financial literacy.

Some studies, such as those by Amagir, Groot, Maasen and Wilschut (2018), have shown the importance of including in the contents of the curricula, financial education programs, as they have been seen as a key factor in helping to strengthen financial literacy among young people.

The financial institutions and all those organizations that are directly or indirectly involved with this issue are making significant efforts to ensure that as many people as possible worldwide are financially included, having as objective that population can reach the greatest potential that allows them to have better reasoned financial decisions.

6. Future research

Derived from the research, it is relevant to point out as a future line of research in follow-up to the work carried out, the comparison of the level of financial literacy among Mexican youth in relation to parental banking in the southeast and other regions of Mexico.

Preschool children's textbooks currently include exercises about understanding the value of money and its equivalents so, in the future, it will be possible to analyze whether this introduction has had a positive impact on the new generations in terms of their level of financial literacy.

7. Acknowledgements

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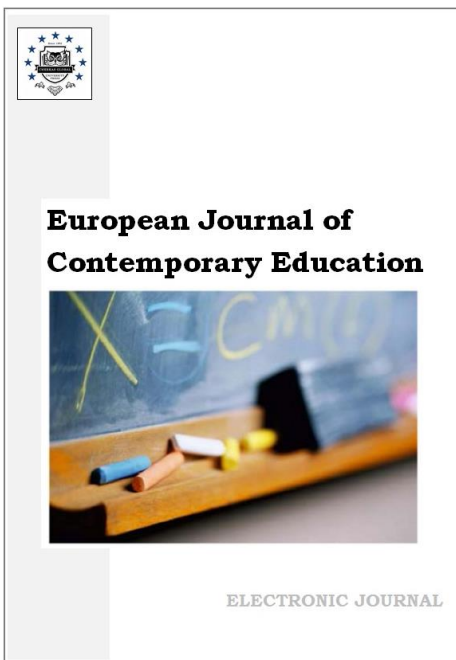
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The History of Education

The Periodical Press of the Ministry of Public Education in the Russian Empire (1803–1917)

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Abstract
This paper explores the periodical press of the Ministry of Public Education in the Russian Empire in the period from 1803 to 1917. Insight is provided into the Ministry's both official and narrowly specialized organs.

The following journals of the Ministry of Public Education were examined: *Periodicheskoe Sochinenie o Uspekhakh Narodnogo Prosveshcheniya*, *Zhurnal Departamenta Narodnogo Prosveshcheniya*, *Zapiski Izdavaemye ot Departamenta Narodnogo Prosveshcheniya*, *Zhurnal Ministerstva Narodnogo Prosveshcheniya*, *Izvestiya po Narodnomu Obrazovaniyu*, and *Professionalnoe Obrazovanie*. Use was also made of some reference literature.

Methodologically, the study relied on a set of general research methods. Of particular note is the use of the historical-chronological method (the journals were considered in chronological order). The use of the systems method helped examine the Ministry's periodical press as a system, with characteristics considered such as period of publication, place of publication, number of issues published, and editorial personnel.

Between 1803 and 1917, a total of six journals were published in the Russian Empire under the aegis of the Ministry of Public Education. The first three were published from 1803 to 1829, a period that can be regarded as the time of the making of the Ministry's periodical press. This is

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when fundamental decisions were made regarding publication formats, content, and periodicity. In 1834, the Ministry launched the monthly *Zhurnal Ministerstva Narodnogo Prosveshcheniya*, which would be published up to 1917, and during the subsequent period only narrowly specialized publications were published, including the popular science journal *Izvestiya po Narodnomu Obrazovaniyu* and *Professionalnoe Obrazovanie*, a journal concerned with vocational education. In terms of editorial personnel, of particular note is the fact that the Ministry of Public Education never employed unknowns to manage its periodical press, with most of its editors being prominent researchers and specialists in the area of printing or censorship.

Keywords: periodical press, Ministry of Public Education, Saint Petersburg, period 1803–1917.

1. Introduction

By tradition, the history of the periodical press is of added interest to specialists in the areas of history and education. This especially is the case with narrowly specialized journals. Of particular note in this context is the periodical press of the Ministry of Public Education in the Russian Empire (1803–1917). The present work will focus on all periodicals of the Ministry and will go over characteristics such as period of publication, content arrangement, and editorial personnel.

2. Materials and methods

The following journals of the Ministry of Public Education were examined: *Periodicheskoe Sochinenie o Uspekhakh Narodnogo Prosveshcheniya* (Russian: "periodical of achievements in public education"), *Zhurnal Departamenta Narodnogo Prosveshcheniya* ("journal of the Department of Public Education"), *Zapiski Izdavaemye ot Departamenta Narodnogo Prosveshcheniya* ("transactions published by the Department of Public Education"), *Zhurnal Ministerstva Narodnogo Prosveshcheniya* ("journal of the Ministry of Public Education"), *Izvestiya po Narodnomu Obrazovaniyu* ("current news in public education"), and *Professionalnoe Obrazovanie* ("vocational education"). Use was also made of some reference literature.

Methodologically, the study relied on a set of general research methods. Of particular note is the use of the historical-chronological method (the journals were considered in chronological order). The use of the systems method helped examine the Ministry's periodical press as a system, with characteristics considered such as period of publication, place of publication, number of issues published, and editorial personnel.

3. Discussion

The periodical press of the Ministry of Public Education has more than once served as a source in the study of various issues. Currently, the Ministry's journal used the most is *Zhurnal Ministerstva Narodnogo Prosveshcheniya*, which is no wonder considering its having been published for more than 80 years – from 1834 to 1917. For instance, E.N. Malyuga and B. Tomalin considered *Zhurnal Ministerstva Narodnogo Prosveshcheniya* as a source on the history of public education in the Caucasus (Malyuga, Tomalin, 2021), L.L. Shpak – as a source on the historical sociology of education (Shpak, 2008), E.A. Pleshkevich – on the history of library science and librarianship in Russia (Pleshkevich, 2017), A.E. Lebid and his colleagues – on the history of higher education in the Russian Empire in the period between the 19th and early 20th centuries (Lebid et al., 2020), and S.Yu. Iyerusalimskaya – on the development of public education in Russia in the period between the second half of the 19th and early 20th centuries (Ierusalimskaya, 2010).

A number of narrower issues have been considered as well. Specifically, A.V. Kovekh investigated the editorial policy of *Zhurnal Ministerstva Narodnogo Prosveshcheniya* in the period 1834–1836 (Kovekh, 2012), Yu.G. Blagoder explored the coverage of China in it in the period 1850–1890 (Blagoder, 2014), M.A. Goncharov examined the role of *Zhurnal Ministerstva Narodnogo Prosveshcheniya* in the cause of building Russia's scholarly-pedagogical potential, and A.N. Pozdnyakov relied on materials from it to discuss the education reform undertaken during the reign of Alexander II (Pozdnyakov, 2013).

4. Results

The Ministry of Public Education always had its own periodical press. The Ministry was established in 1802 – by way of reorganization from the Commission for Public Schools, and as

early as 1803 its organ, *Periodicheskoe Sochinenie o Uspekhakh Narodnogo Prosveshcheniya*, was launched. It was published by the Central School Board (Figure 1), and its editor-in-chief was N.Ya. Ozeretskovsky. The journal was published in Saint Petersburg from 1803 to 1817. A total of 44 issues of the journal were released. A hardcover publication, it had no cover page as such. Content in it was arranged into the following sections: 1) Legislation on public education; 2) Measures undertaken by the Central School Board in terms of establishing new schools; 3) Benefactions by private individuals intended to help promote literacy; 4) Extracts from testimonials regarding student achievement; 5) Reports (Ablov, 1937: 25). In addition, there was room reserved for articles related to enhancing student learning. The organ operated in this way up to 1917.
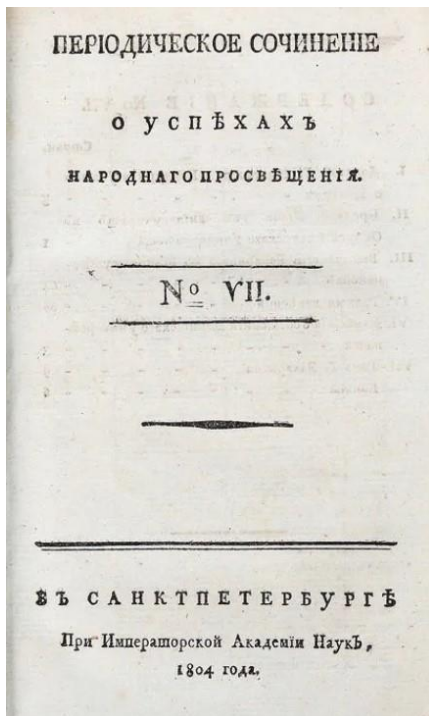
Fig. 1. Title page of the journal *Periodicheskoe Sochinenie o Uspekhakh Narodnogo Prosveshcheniya*
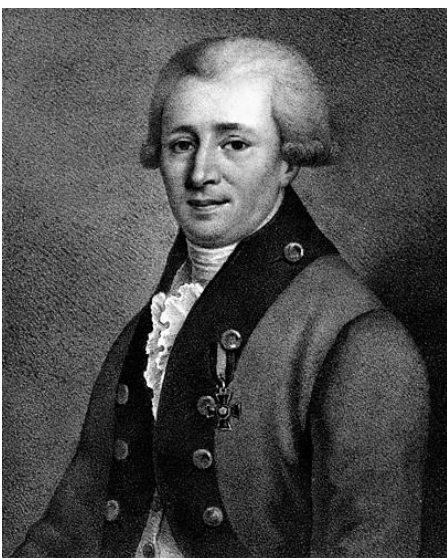
Fig. 2. Nikolay Yakovlevich Ozeretskovsky (1750–1827)

The journal's editor-in-chief, Nikolay Yakovlevich Ozeretskovsky (1750–1827), was a prominent Russian polymath, naturalist, member of the Saint Petersburg Academy of Sciences, and member of the Russian Academy (Figure 2). He published nearly 100 scholarly works on botany, zoology, geography, medicine, Russian, and language arts. A famous work of his is 'A Review of Various Places Located from Saint Petersburg to Staraya Russa and on the Way Back' (Knyazeva, 2021: 467). He taught natural history, Russian, and language arts. He headed the Kunstkamera museum between 1800 and 1827.

The first journal of the Ministry of Public Education was discontinued in 1817. The publication of the Ministry's journal resumed only four years later. The new publication was *Zhurnal Departamenta Narodnogo Prosveshcheniya* (Figure 3). It was published in Saint Petersburg from 1821 to 1824. There were a total of nine parts. The journal was available in softcover format.

Fig. 3. Cover of *Zhurnal Departamenta Narodnogo Prosveshcheniya*

Fig. 4. Nikolay Fedorovich Ostolopov (1783–1833)

The journal's editor-in-chief, Nikolay Fedorovich Ostolopov (1783–1833), was a Russian poet and translator (Figure 4). He headed the Imperial Theaters between 1825 and 1829. A major work by N.F. Ostolopov is 'A Dictionary of Ancient and Modern Poetry', published in 1821. His other noteworthy work, 'A Key to the Writings of Derzhavin with a Short Description of the Life of This Famed Poet', published in 1822, represents one of the first attempts at literary commentary in Russia.
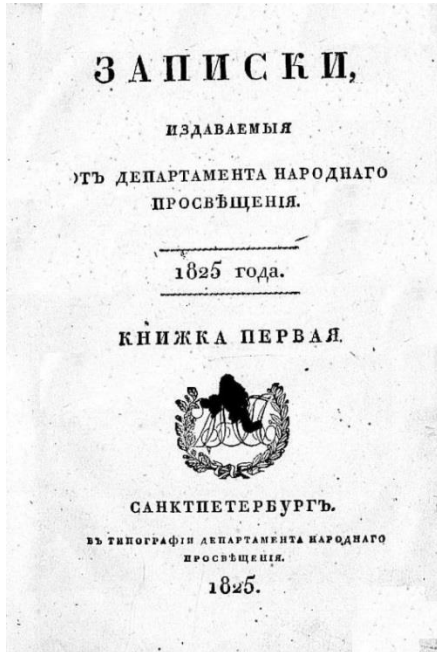

Fig. 5. Cover of the journal *Zapiski Izdavaemye ot Departamenta Narodnogo Prosveshcheniya*

Fig. 6. Cover of *Zhurnal Ministerstva Narodnogo Prosveshcheniya*

The journal was discontinued in 1824. In 1825, the Department of Public Education launched the yearly *Zapiski Izdavaemye ot Departamenta Narodnogo Prosveshcheniya* (Figure 5). Its editor-in-chief was again N.F. Ostolopov. A total of three volumes were released – in 1825, 1827, and 1829. The publication was comprised of two sections – official and non-official. The non-

official section carried articles focused on issues of education both in Russia and abroad. The publication mainly contained official data on public education in Russia (Ablov, 1937: 26).

Finally, in 1834 the Ministry launched *Zhurnal Ministerstva Narodnogo Prosveshcheniya* (Figure 6). This monthly was published up to 1917.

In the period under review, the journal was managed by the following editors-in-chief: K.S. Serbinovich (from 1834 to 1856), A.V. Nikitenko (1856–1860), K.D. Ushinsky (1860–1863), Yu.S. Rekhnevsky (1864–1867), I.D. Galanin (1867), A.I. Georgiyevsky (1868–1870), E.M. Feoktistov (1871–1882), L.N. Maikov (1883–1890), V.G. Vasilevsky (1891–1899), and E.L. Radlov (1899–1917).

Being an official publication, the journal was not particularly rich in thought-provoking pedagogical content. Even the editorship of K.D. Ushinsky between 1860 and 1863 did not help much in this respect. Nevertheless, the journal was of great importance for the study of the history of public education in Russia. It carried acts of legislation on public education, circular letters, and ordinances from the Primary and Secondary Education Department of the Academic Committee within the Ministry of Public Education (Ierusalimskaya, 2010: 26). The input of certain prominent editors-in-chief of the journal, from K.S. Serbinovich, who helped N.M. Karamzin translate into French his 'History of the Russian State', to L.N. Maykov, was limited to a handful of articles and research studies of an academic nature. K.S. Serbinovich is credited with the launch in 1837 of "the index of all books published in Russia" (Lebid et al., 2020: 2496). During the editorship of K.D. Ushinsky, the journal carried a fair number of articles on pedagogy and some other subjects.

Some of the editors-in-chief of 'Zhurnal Ministerstva Narodnogo Prosveshcheniya' are briefly examined below.

Konstantin Stepanovich Serbinovich (1797–1874) was a prominent Russian memorialist, censor, statesman, privy councilor, and honorary member of the Saint Petersburg Academy of Sciences (Figure 7). During his editorship of the journal, he held the post of Director of the Chancellery of the Chief Procurator of the Holy Synod. In 1857, he became Director of the Ecclesiastical Educational Administration of the Holy Synod.

Fig. 7. Konstantin Stepanovich Serbinovich (1797–1874)

Evgeny Mikhaylovich Feoktistov (1828–1898) was a writer, journalist, and privy councilor. He headed the Interior Ministry's Main Directorate for Press Affairs, which made him Russia's censor-in-chief (Figure 8). He was the author of 'Greece's Fight for Independence' and 'Magnitsky: The Materials for the History of Education in Russia'. He also wrote the memoir 'Behind the Scenes of Politics and Literature'.
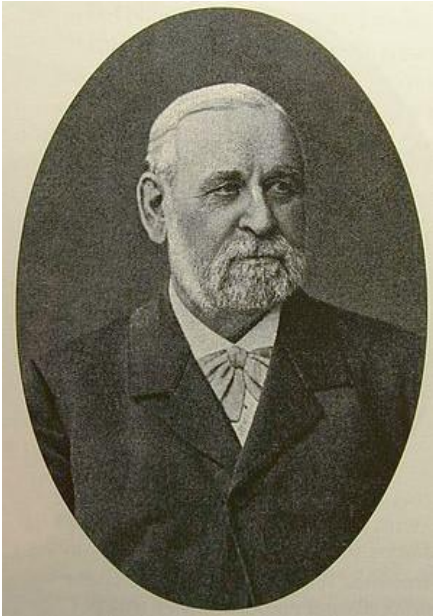
Fig. 8. Evgeny Mikhaylovich Feoktistov (1828–1898)

In 1904, the Ministry of Public Education launched the popular science journal *Izvestiya po Narodnomu Obrazovaniyu* (Figure 9). It was published monthly in Saint Petersburg from 1904 to 1917.
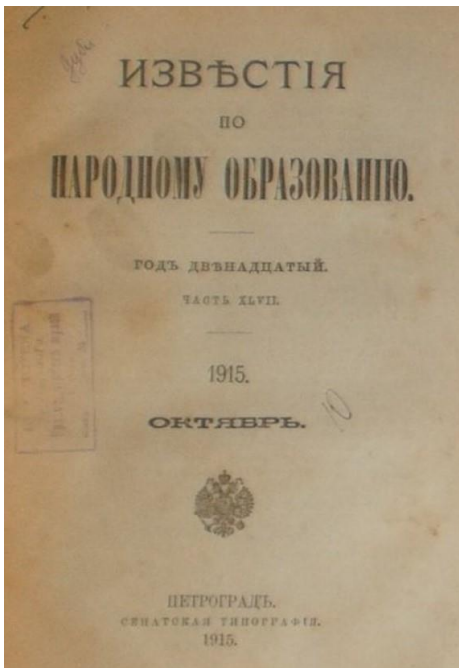

Fig. 9. Cover of the journal *Izvestiya po Narodnomu Obrazovaniyu*

The editor-in-chief of *Izvestiya po Narodnomu Obrazovaniyu* was Ernest Leopoldovich Radlov, who also was the penultimate editor-in-chief of *Zhurnal Ministerstva Narodnogo Prosveshcheniya*. E.L. Radlov (1854–1928) was a Russian philosopher, historian of philosophy, philologist, and translator (Figure 10) (Krechko, 2020: 142). He was a co-founder of the St. Petersburg Philosophical Society and privy councilor. He gave lectures on logic, psychology, and history of philosophy. He worked at the Imperial Public Library, where he progressed from Sublibrarian to Director. He translated into Russian Aristotle's 'Ethics', and it is under his

editorship that 'The Phenomenology of Spirit' by Hegel and the writings of Fichte and Malebranche were published in Russian.

Fig. 10. Ernest Leopoldovich Radlov (1854–1928)

Izvestiya po Narodnomu Obrazovaniyu was published at the behest of the Ministry of Public Education as a special organ focused on lower education exclusively. Outside of the official section, the journal carried articles on current issues in public education, pedagogical articles, and book reviews. Contributors included A.I. Anastasiyev, A.D. Weisman, E.P. Kovalevsky, M.Ya. Kapustin, and P.G. Mizhuyev. 'A Reference Book on Lower Education' was published on a yearly basis as a supplement to the journal (Ablov, 1937: 63).
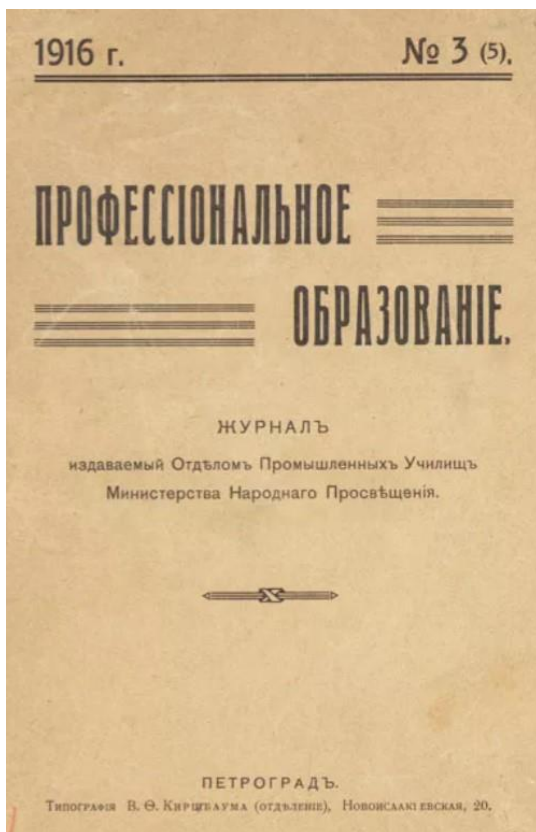
Fig. 11. Cover of the journal *Professionalnoe Obrazovanie*

Finally, the last journal published through the efforts of the Ministry of Public Education was *Professionalnoe Obrazovanie* (Figure 11). It was published by the Ministry's Department of Industrial Schools. Its editors were V. Rykov and A. Volokitin. Both were functionaries within the Ministry of Public Education, with V. Rykov heading the Department. The journal was published in Petrograd during World War I (between 1915 and 1917). Five issues were published each year.

According to the editors of *Professionalnoe Obrazovanie*, "growth in industry, improvements in its organization, and boosts in labor productivity and economic performance will only be possible if the country has in place a variety of technical and trade schools and there is a focus on developing a network of facilities for extracurricular vocational training". A significant portion of the material published in the journal during its first year was devoted to the discussion of the draft Regulation on Vocational Education in Russia. In fact, the very purpose of the journal was to help organize the country's vocational education system. The journal carried official documents on the activity of technical and vocational educational institutions. The 'Current Events' section carried the latest information on trade and technical schools in the country. The 'Bibliography' section contained material dealing with new works approved by the Academic Committee's Technical and Vocational Education Department (Polezhai, 2011: 86-87). In 1917, two issues of the journal were released – Issue 1 and a double issue combining Issues 2 and 3.

5. Conclusion

Between 1803 and 1917, a total of six journals were published under the aegis of the Ministry of Public Education in the Russian Empire. The first three were published from 1803 to 1829, a period that can be regarded as the time of the making of the Ministry's periodical press. This is when fundamental decisions were made regarding publication formats, content, and periodicity. In 1834, the Ministry launched the monthly *Zhurnal Ministerstva Narodnogo Prosveshcheniya*, which would be published up to 1917, and during the subsequent period only narrowly specialized publications were published, including the popular science journal *Izvestiya po Narodnomu Obrazovaniyu* and *Professionalnoe Obrazovanie*, a journal concerned with vocational education. In terms of editorial personnel, of particular note is the fact that the Ministry of Public Education never employed unknowns to manage its periodical press, with most of its editors being prominent researchers and specialists in the area of printing or censorship.

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Rectorship in the System of Higher Education in the 19th and early 20th centuries: The Case of the Imperial University of St. Vladimir

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Abstract

This paper explores the institution of rectorship through the example of the Imperial University of St. Vladimir in Kiev (1834–1917).

An analysis of the role and functions of rectors was conducted through the lens of the following three major models of the university: pre-classical (represented by the medieval university corporation), classical (the research university of the 19th and the first half of the 20th centuries), and post-classical (the mass university of the 20th and 21st centuries).

The analysis helped gain an insight into the key trends in the development of higher education in Ukraine and the Russian Empire as a whole. The findings revealed that there was a transformation in the functionality of the university rector from a mere appointee to a leader in the scholarly community enjoying a high level of public recognition.

A distinctive characteristic of rectorship in the Russian Empire was its dual status – (1) representing a given university's academic community and (2) representing the state's bureaucratic machine. The latter was associated with the need to maintain close touch with the local nobility and to secure the backing of the trustee of a given educational district and the nation's Minister of Public Education.

The institution of rectorship at the Imperial University of St. Vladimir was explored through the lens of the following key aspects: legal, organizational, social, and ethnic.

Keywords: rector, trustee, model of the university, classical university, education policy, higher education.

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1. Introduction

The post of Rector in universities in imperial Russia was nominally elective. A rector was the head of a university corporation, a tradition dating back to the Middle Ages and adopted in part from German universities. Unfortunately, the principle of electing rectors was breached all too often by educational district trustees and the Ministry of Public Education.

Thus, it can be asserted that there were objective barriers to the continuity of European elective practices in Russian universities. In large part, this was associated with the fact that in the Russian Empire the rector was part of the system of administrative power relations and was viewed as an element in the state's bureaucratic machine.

Consequently, the functionality of the rector in universities in the Russian Empire was different from that in Europe. Rectors in Europe enjoyed a set of specific political rights. They presided over corporate meetings and chaired meetings of the university court. The post of Rector was, for the most part, consensual from the standpoint of social and institutional candidacy acceptance and did not require outstanding scholarly achievements. Rectorship gradually evolved from an institution "performing the functions of the administrative body at a university to an institution performing the functions of the body of authority over it" (Andreev, Posohov, 2012: 295). A similar situation was observed in respect of imperial Russian universities. It is only by the end of the 19th century that the practice of using a candidate's scholarly achievements as the determining criterion when appointing a rector became universal in Russia.

It is to be noted that the institution of rectorship evolved depending on the model of the university. There are three such models: pre-classical, classical, and post-classical. The pre-classical model is represented by the medieval corporate university, the classical model (beginning in the early 19th century) – by the research university, and the post-classical model (beginning in the second half of the 20th century) – by the modern mass university (Andreev, Posohov, 2012: 7). The classical model of the university emerged in Germany and has to do with a transformation of universities as privileged corporations into the university of a new type. The operation of classical model universities, which were funded by the state, was based on the "unification of sciences" principle. It is based on this model that Moscow University was established in 1755, followed by the rest of the nation's imperial universities, with the system of Russian universities emerging as a result.

A change in the model of the university typically caused a change in the functions and role of the rector. Such changes were reflected in the shift from socially significant and institutional criteria for the choice of rectors in the pre-classical model of the university to scholarly and pedagogical criteria in the classical model. In large part, this was also facilitated by the narrowing of the rector's functions, which were now confined to regulating the educational process and scholarly activity.

In the realities of imperial Russian universities, rectorship retained rudiments of the pre-classical model – in Russia, alongside the scholarly component, of importance was also maintaining direct touch with the local nobility and the educational district trustee. All of the above attests to the rector's ambivalent status in imperial Russia – as an element in the state's bureaucratic machine and a leader in the scholarly community.

2. Materials and methods

In putting this work together, an analysis was conducted of various relevant sources and documents, which can be nominally divided into two major types. The first group, focused on the formation and evolution of the nation's university space, includes 'A Collection of Ordinances for the Ministry of Public Education', which contains a set of major regulatory documents dealing with this agency (Sbornik postanovlenij, 1864). This group also includes relevant government documents setting out the rules governing the operation of Russian imperial universities (Akt postanovleniya, 1802; Polnoe sobranie, 1830). Worthy of a separate mention are the Imperial Statutes of 1804, 1835, 1863, and 1884 (Tablica ustavov, 1901) and the constituting documents for the Imperial University of St. Vladimir specifically (Korotkyi, 1994). An analysis of these documents helped gain an insight into the role and functions of the university rector in the system of corporate culture within the nation's higher education sector and in the bureaucratic system of the Russian state.

The second group includes a set of relevant bibliographical publications containing information on teaching staff at the Imperial University of St. Vladimir (Ikonnikov, 1884;

Skopenko, 2006). A major source of information on the university's rectorate is general lists of officers from the Memorandum Books for Kiev Governorate (Pamyatnaya knizhka, 1856-1915). The use of these sources helped gain a valuable insight into the institution of rectorship at the Imperial University of St. Vladimir in terms of its legal, organizational, social, and ethnic characteristics.

The study's methodological basis is grounded in the principles of objectivity, historicism, and analytical integrity. Use was made of both general and special historical research methods, including the historical-analytical method, classification and categorization, historical-logical analysis, the chronological method, and the structural-systems method.

3. Discussion

To date there has been no dedicated research on the rectorate of the Imperial University of St. Vladimir. An analysis of the historiography of the subject revealed the absence of fundamental research works on this topic and a paucity of attempts to explore particular aspects of the development and activity of the institution of rectorship at the university in Kiev.

Articles, monographs, and collections of documents that come out now and then in conjunction with the anniversaries of the university and its rectors tend to offer only a partial insight into its rectorate (Shul'gin, 1860; Narysy istorii, 2004; Narysy istorii, 2009; Zhmudskyi, 1959; Vladimirskij-Budanov, 1884). In fact, many of the heads of the Imperial University of St. Vladimir have been long consigned to oblivion.

It is worth classifying the existing research on the subject into several thematic blocks. The first block includes research works by the actual rectors at the Imperial University of St. Vladimir. Many of these scholars and department professors left behind articles or monographs. While these fruits of their work give us only a faint idea of their input as a rector, they do provide us with insight into certain aspects of their activity.

The works in the second block are focused on the scholarly legacy of the university's rectors. The available research on, say, the jurists K.A. Nevolin and K.A. Mityukov and the economist N.K.P. von Bunge may be quite significant for conceptualizing the scholarly legacy of the university's rectorate. However, it appears to be little informative about their work in the actual office of the Rector.

There appears to be more value in the sources and materials comprising the third thematic block – obituaries. This material contains valuable facts about the life of the university's rectors and professors and can give us an idea of their contribution to the development of the university and the units there that they headed. We can subsume under this group some other documents and sources on the history of the Imperial University of St. Vladimir, like reminiscences by contemporaries (Korotkyi, 1994).

Worthy of a separate mention is the reference and encyclopedic literature containing information about university rectors as members of the scholarly class and a scholarly corporation and as members of the higher ranks in the Russian Empire (Ikonnikov, 1884; Potyomkin, 2019).

Certain aspects of the operation of the institution of rectorship in the Russian Empire can be traced in the context of the development of the country's higher education system (Andreev, Posohov, 2012; Rossijskie universitety, 1998; Tomsinov, 2012), the making and development of its bureaucratic system (Posohov, 2017), and the development of its system of university education in a European context (Andreev, 2009; Dement'ev, 2016; Tomsinov, 2009). Issues that are important for understanding the figure of the rector include legal support for their activity (Chernyh, 2011) and their relationships with other members of officialdom (Zhukovskaya, 2009).

The development of university education in Ukraine has been explored in a number of research works, some of which are focused on the organization of the educational process (Lebid, Shevchenko, 2021a; Lebid, Shevchenko, 2021b), some on relevant ethno-social and ethno-political processes and their influence on the system of education in Ukraine (Tytskyi, 2010; Lebid, 2022), and others on general trends in the development of the system of education in Ukraine in the period under review (Siropolko, 2001).

4. Results

Subsequent to the establishment of Kazan and Kharkov Imperial Universities in the early 19th century (1804 and 1805, respectively), there were plans to set up an imperial university in Kiev

as well. However, these plans materialized only a quarter of a century later. In 1833, Emperor Nicholas I approved a proposal brought in by the Minister of Public Education, Count S.S. Uvarov, and issued an edict establishing the Imperial University of St. Vladimir. The government brought forward a draft charter for the university and established its staffing structure.

In Ukraine, which was part of the Russian Empire, the Imperial University of St. Vladimir was the second institution of higher learning (after Imperial Kharkov University). Its establishment was in part a political decision on the part of the Russian government, which sought to counter Polish influence on the region's aristocracy and intelligentsia, with a focus on minimizing Polish cultural influence in the region and with a view to ultimately Russifying it (Tomsinov, 2012: LIV-LVI).

The university's first student admission, which enrolled 62 individuals, took place in late August 1834. Initially, the university only had one faculty – the Faculty of Philosophy, comprised of two departments (the Department of History and Philology and the Department of Physics and Mathematics). The faculty later split into two independent faculties – the Faculty of Law (1835) and the Faculty of Medicine (1841). The Imperial University of St. Vladimir operated with this structure up until 1917.

Note that when the university first opened its doors its staffing potential was quite modest – 17 instructors and 12 administrative staff.

The newly established university had a library (a stock of 34,587 volumes), a mineralogical laboratory (an inventory of 15,869 items), a zoological laboratory (an inventory of 12,399 items), a botanical garden (14,797 plant species and subspecies), a physics laboratory (an inventory of 264 items), a chemistry laboratory (540 pieces of equipment and consumable items), a mechanics laboratory (418 models and machines), and an arts laboratory (1,665 architectural drawings and an inventory of 400 items) (Patryliak, 2019).

The university's Faculty of Medicine was based on the Vilna Academy of Medicine and Surgery (some of its assets (zoological, physical, anatomical, and chemical) had been shipped to Kiev). Since the university did not have a building of its own as of yet, it had to rent spaces across the city.

The university moved into a building of its own (the "Red Building" at 60 Vladimirskaya Street) only in 1842. This was possible thanks to a contest for the best design of the university building, initiated by the Ministry of Public Education back in 1834. As a result, the size of the university's teaching staff increased from 20 to 37, with new instructors joining its ranks. All of this would facilitate Kiev's turning into the region's intellectual center.

Pursuant to the university's first charter, issued on December 25, 1833, the internal administration of the facility was to be managed by the Council under the immediate leadership of the Trustee of the Kiev Educational District. The Council was to be headed by the rector, who was to be elected by majority vote from among ordinary professors for a term of 2 years. The rector's duties were set out in the charter's Sections 24 through 26 (Korotkyi, 1994: 65-75)

The University Statute of 1835 only partially concretized and expanded the 1833 charter of the Imperial University of St. Vladimir, which, in a sense, typified the common university charter (Tablica ustavov, 1901). In essence, the University of St. Vladimir continued to operate within the framework of its first charter. It was not until June 1842 that a new version of the university's charter came out. The new charter expanded instructors' academic freedom (with the introduction of the institution of associate professorship) and restricted the right to elect rectors. The university was now comprised of the three faculties, the Council, and the Board (Sbornik postanovlenij, 1864: 228). The Rector, who was in charge of both the Council and the Board, was answerable to the Minister of Public Education via the Trustee of the Kiev Educational District.

While the University of St. Vladimir technically abided by the University Statute of 1835, its own charter of 1842 had some distinctive features. For instance, it had a regulatory provision whereby "the Council must elect two candidates for the post of Rector at the University", with the Minister of Public Education then expressing his support in favor of one of them (Sbornik postanovlenij, 1864: 233).

Overall, the Statute of 1835 reduced the university's autonomy – it restricted the Council's authority to govern the university, eliminated the university court, and empowered the Minister of Public Education to appoint professors (Tablica ustavov, 1901).

The University Statute of 1863 is considered the most democratic of these statutes. And even this statute still let the Trustee wield virtually unlimited power over the university. Pursuant to

Chapter 4, the rector was a key figure in the university who was to be elected by the Council for a period of 4 years. Sections 28 through 36 set out the rector's duties (Tablica ustavov, 1901).

The University Statute of 1884 remained in force up until 1917, during which time it had undergone several revisions and modifications. It eliminated the elective principle in the university's self-government system, strengthened the Trustee's control over it, and bolstered the positions of the rector in its bureaucratic system. The rector was still not elected but appointed by the Minister of Public Education from among ordinary professors.

Over the entire imperial period of the existence of the University of St. Vladimir (1834–1917), it was headed by 15 rectors, who are as follows:

1. M.A. Maksimovich (Doctor of Slavic-Russian Philology (1834–1835));
2. V.F. Tsikh (Master of Language Arts (1835–1837));
3. K.A. Nevolin (Doctor of Law (1837–1843));
4. V.F. Fedorov (Doctor of Mathematical Sciences (1843–1847));
5. E.R. von Trautvetter (Doctor of Natural Sciences (1847–1859));
6. N.K.P. von Bunge (Doctor of Political Sciences (1859–1862; 1871–1875; 1878–1880));
7. N.D. Ivanishev (Doctor of Law (1862-1865));
8. K.A. Mityukov (Doctor of Law (March–September 1865);
9. A.P. Matveyev (Doctor of Medicine (1865–1871; 1875–1878));
10. K.M. Feofilaktov (Doctor of Natural Sciences (1880–1881));
11. I.I. Rakhmaninov (Doctor of Mathematical Sciences (1881–1883));
12. N.K. von Rennenkampff (Doctor of Law (1883–1890));
13. F.Ya. Fortinsky (Doctor of World History (1890–1902));
14. N.V. Bobretsky (Doctor of Zoology (1903–1905));
15. N.M. Tsitovich (Doctor of Political Economy and Statistics (1905–1917)).

It is worth examining the institution of rectorship at the University of St. Vladimir through the prism of the following key aspects of its operation: legal, organizational, social, and ethnic.

The first legal documents regulating the rector's powers in the Russian Empire were The Imperial University of Dorpat Establishment Act (1802) (Akt postanovleniya, 1802), Preliminary Procedures for Public Education (1803) (Polnoe sobranie, 1830: 437), and The Charter of Imperial Moscow University (1804) (Tablica ustavov, 1901). Subsequently, the exercise of the rector's powers would be governed by the University Statutes of 1835, 1863, and 1884.

Of interest is the way the rector interacted at the time with the educational district trustee, whose purview included control over the activity of an institution that was part of the district territorially. The trustee was one of the links in the hierarchical structure of the Ministry of Public Education, being immediately answerable to the Minister.

Pursuant to the Statute of 1804, which had a special focus on a university's autonomy, the trustee was to act as an intermediary between the Minister and the university. He was concerned with dealing with organizational (e.g., addressing the university's material needs) and staffing issues (presenting for approval Council-elected candidates for appointment as professors and members of the administration) and preparing financial reports. In addition, the Trustee was to deal with issues that were beyond the Council's purview (e.g., ratifying the university's financial expenditures in excess of 500 rubles). In essence, the rector's job boiled down to managing the day-to-day execution of directives.

Thus, during that period, the role of the educational district trustee mainly boiled down to informal control over the activity of teaching staff – the trustee's rights and obligations were not set out in the Statute in as detailed a manner as those of professors and instructors. Only the Statute of 1835 formalized one's rights and obligations in the 'rector–trustee' relationship system, incorporating the trustee into a university's structure as the highest-level officer in its administration.

Each Russian imperial university underwent a gradual transformation from a scholarly corporation to a centralized bureaucratic establishment. The rector was integrated into the bureaucratic model of management. Yet the post of Rector being an elective position contravened the nation's entrenched model of authority, with some educational district trustees even pushing for the government to discontinue the practice of electing rectors, as it "diminishes respect for one's superiors" (Petrov, 2003: 135).

What is more, the established principle of electing rectors was breached widely at the time. There were cases where the powers of "suitable" rectors remained in place even after the end of their term in office. On a petition of the educational district trustee, such rectors would be appointed for a new term. It was common to elect rectors based not on one's qualifications and credentials but on one's descent, family connections, closeness to the government, and social connections in town (Andreev, Posohov, 2012: 296). Over time, the practice of appointing rectors regardless of the Council's recommendation became a fairly common one, resulting in changes in the degree of authority exercised by the rector (Andreev, Posohov, 2012: 308). Quite often, the final say in electing a rector was with the Ministry of Public Education.

The rector's dual status was reflected not only in their relationship with the trustee but also in their combining of the duties of a member of a university's scholarly corporation with those of a member of the centralized bureaucratic model of authority. The logic behind this differentiation in the status of the rector was determined by the hierarchical system of education in the Russian Empire. Within this system, universities administered control over inferior educational institutions such as gubernia and uyezd schools within a single educational district, and there were several such educational districts across the Russian Empire. It is natural, therefore, to consider universities as government institutions and the rector as a representative of centralized bureaucratic authority.

As regards the organizational aspects of rectors' activity, of particular interest are the following themes: the sphere of one's scholarly interests, one's work experience gained prior to being appointed Rector, and the age composition of the rectorate in the Imperial University of St. Vladimir.

An analysis of the institution of rectorship in the Russian Empire revealed that, while a candidate's specialty area did not matter much when electing or appointing rectors, most had a degree of Doctor of Law. On one hand, this was associated with the fact that during that period faculties of law (just like those of medicine) led the way in the size of both the teaching workforce and the student body. On the other hand, it was the result of the bureaucratization of university life (Posohov, 2017: 124).

Among the 15 rectors of the University of St. Vladimir, four had a degree of Doctor of Law and three had a degree in Natural Sciences. This reflected a national trend toward appointing to this post individuals with a high academic degree.

Pursuant to the period's legislation, the post of Rector was to be held by ordinary professors exclusively. There was another noteworthy trend. Most university rectors had had extensive experience working in an executive position before being appointed or elected to this post. The primary focus in selecting a candidate was on the bureaucratic, organizational factor, as opposed to one's scholarly background.

It is worth considering the following statistics for the University of St. Vladimir: 12 out of its 15 rectors had held an executive position prior to taking up office (eight had worked as a dean and four as a dean and then as a prorector (V.F. Tsikh, V.F. Fedorov, K.A. Mityukov, and A.P. Matveyev)). Of particular note is the case of K.A. Mityukov, who had worked as a rector for just a half-year but had had extensive experience working as a prorector (4 terms). In another case, prior to taking up the office of Rector, N.K. von Rennenkampff had served as Mayor of Kiev (1875–1879) and as Trustee of the Kiev Educational District (1886–1887, concurrently with being Rector).

Combining the office of Rector with scholarly activity would give some the opportunity for further career growth, in terms of both scholarly activity and public service. For instance, three of the rectors of the University of St. Vladimir were members of the St. Petersburg Academy of Sciences – M.A. Maksimovich and V.F. Fedorov were its corresponding members, and N.K.P. von Bunge was its honorary member. The latter also enjoyed a successful career in public service – he held the posts of Finance Minister (1881–1887) and Chairman of the Cabinet of Ministers (1887–1895).

Of particular interest is the age of the university's rectors at the time of assuming office. The youngest rectors (both in the University of St. Vladimir and in the national university system) were M.A. Maksimovich and V.F. Tsikh. At the time of assuming the office of Rector at the Imperial University of St. Vladimir, each was 30. K.A. Nevolin was 31. The institution's oldest rectors were N.V. Bobretsky and K.M. Feofilaktov (60 and 62, respectively). The average age of the university's rectors was 44.

The Imperial University of St. Vladimir was the alma mater of many of its rectors – five out of the 15. Another three were graduates of Moscow University. There were also among them graduates of Saint Petersburg and Dorpat Universities. There were no graduates of Imperial Kazan University among them.

In terms of ethnic background, seven of the rectors of the University of St. Vladimir were Ukrainians, six were ethnic Russians, and three were of German descent. Note that the University of St. Vladimir had been under considerable German influence. Instruction there was conducted mainly based on educational models used by German universities (Vladimirskij-Budanov, 1884; Dement'ev, 2016). Many of the professors employed in Kiev were Germans invited from the University of Dorpat. Some were Germans born in Kiev. Most of the German professors worked at the Faculty of Medicine.

In terms of social background, the overwhelming majority of the rectors of the Imperial University of St. Vladimir, nine, were of noble descent, three were descended from clergy, and one was descended from urban dwellers. Little is known about the social background of the rector V.F. Fedorov, except that he was born in Saint Petersburg and was brought up in an orphanage.

According to researcher S.I. Posokhov, the average length of service as a rector in the Russian Empire at the time was six years (Posohov, 2017: 127). The figure for the Imperial University of St. Vladimir was 5.5 years, which overall matches the one arrived at by S.I. Posokhov. The way by a wide margin in this respect is led by E.R. von Trautvetter (1847–1859), F.Ya. Fortinsky (1890–1902), and N.M. Tsitovich (1905–1917), each of which held the office for 12 years. Note that N.M. Tsitovich was elected to the post four times for a term of three years. Of interest is the fact that, when the Provisional Government accepted his resignation in May 1917, he would continue in the capacity of Rector through to the start of the following school year, as no new officer had been appointed to the vacancy. However, the revolutionary events of 1917 would not let N.M. Tsitovich fulfill his potential as a rector in full. What is more, he would even not be let in the university building in September 1917. N.M. Tsitovich would later work as a department professor. Subsequently, the university went through three rectors within a half-year period. Finally, in April 1918 the post was filled by Dean of the Faculty of Law E.V. Spektorsky (1918–1919).

The reasons behind the inability of some rectors to serve out the entire term included health issues, death, and public resistance. Overall, the Imperial University of St. Vladimir had five such rectors in its history.

In terms of social status, the most common awards bestowed upon university rectors at the time were the Order of Saint Stanislas, the Order of Saint Vladimir, and the Order of Saint Anna (mainly 2nd and 3rd class). All of the rectors of the Imperial University of St. Vladimir were holders of one of these awards (Potyomkin, 2019). Over time, the number of rectors holding first-class awards would increase, which is indication of rectors being increasingly treated as top officials.

In terms of level in the Table of Ranks, three of the rectors of the Imperial University of St. Vladimir held the rank of state councilor, as many were an active state councilor, and seven were a privy councilor (Skopenko, 2006).

5. Conclusion

The institution of rectorship at the Imperial University of St. Vladimir in Kiev reflected the key trends in the development of this element in the university structure across the nation. On one hand, the establishment of this university helped boost Russian imperial influence in the region in terms of countering Polish influence there, with the rector acting in this respect as an important link in the hierarchical bureaucratic system. On the other hand, the emergence of this university was an additional attestation to the government remaining true to its policy of building a system of Russian universities, manifested in the establishment of the universities in Moscow, Dorpat, Vilna, Kazan, Kharkov, and Saint Petersburg earlier.

The Imperial University of St. Vladimir had all the qualities of a classical university. This is attested by its solid material base and robust talent pool, with the rector acting as a "patriarch" of the university's values and traditions.

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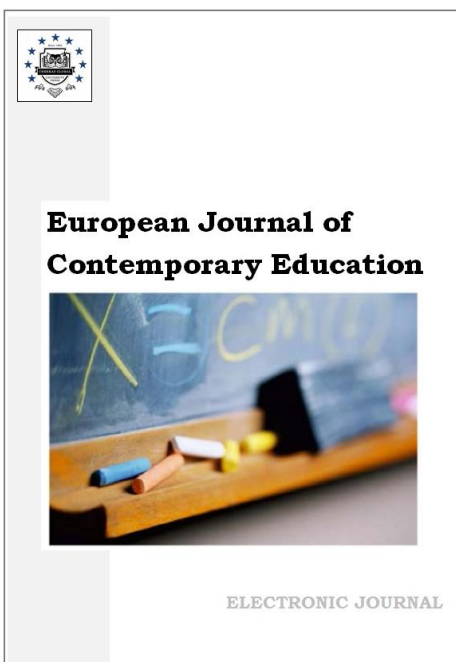
A Discussion of the Practices for Teaching Language Arts Employed in the Kharkov Educational District in 1863: The Case of Novocherkassk Host Gymnasium

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Abstract

At the start of the 1860s, pedagogical thought in the south of the Russian Empire entered a period of brisk development. The administration of the Kharkov Educational District keenly promoted pedagogical research – and did so even among ordinary gymnasium teachers. This led in 1863 to a public discussion about how to teach language arts. A young teacher at Novocherkassk Gymnasium named A.M. Savelyev (later a journalist and high-ranking regional official) approached the administration of the Kharkov Educational District with a detailed description of his classes and a report on the overall situation around language arts instruction with the aim of obtaining professional advice from his more experienced fellow instructors. The response to him came from a Kharkov University professor named N.A. Lavrovsky, a well-known pedagogue in the second half of the 19th century. In addition, the discussion resulted in language arts instructors in the District being asked to share with the administration details of their teaching programs. This discussion may be of particular interest to those interested in the history of Russian pedagogy and may provide a valuable insight into the daily pedagogical process in the gymnasium.

The findings indicate that as at the start of the 1860s the Russian gymnasium sector was in need of a coherent system of teaching the Russian language and literature, with most facilities lacking a proper curriculum and an appropriate textbook. Some teachers would come up with a textbook substitute of their own, and others would dispense with it altogether, resorting, at worst, to going through random texts in class. As a consequence, many students would end up with poor results. To the discussion's participants, the only solution to the problem was creating a quality textbook, which, as many argued, would require systematizing the best practices of various pedagogues, but it was not something that could be done overnight.

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1. Introduction

At the start of the 1860s, pedagogical thought in the south of the Russian Empire entered a period of brisk development. This had been facilitated by increased attention on the part of the administration of the Kharkov Educational District to pedagogical innovation. Specifically, General D.E. Levshin, who was at the head of it, paid heed to prominent pedagogue N.A. Lavrovsky, a Kharkov University professor, who suggested motivating teachers and assisting them in resolving pedagogical issues, instead of punishing them for their failures (Peretyatko, 2021: 799-811). As a result, the District's ordinary provincial gymnasiums (e.g., Novocherkassk Host Gymnasium) began to pay serious attention to issues of pedagogy and move away from scholasticism, i.e. a focus on the thoughtless learning of formulas and rules (Peretyatko, Zulfugarzade, 2020: 689-706).

The year 1863 witnessed a serious discussion in the Kharkov Educational District with regard to how to teach Russian language arts. Details of that discussion perfectly reflect the atmosphere that D.E. Levshin and N.A. Lavrovsky had managed to create among the District's teachers – who could now openly share their vision of the subject, freely debate with each other, and directly point out each other's pedagogical mistakes. With that said, the caveat must be made straightaway that the level of knowledge most of those teachers had about pedagogical science was not very high. In engaging in critical pedagogical enquiry, most invoked no recognized luminaries in the field.

This, doubtless, makes materials from that discussion a particularly valuable source on the history of Russian pedagogical thought as a whole. The pedagogical views of ordinary teachers and employees of provincial educational institutions tend to be rarely explored by researchers. This often is associated with a lack of appropriate sources to draw upon. During the period under review, teachers employed in the secondary education sector would eventually lose a significant portion of their freedoms, with teaching becoming strictly regulated and the role of an ordinary teacher becoming reduced to executing the learning plans and curricula prescribed by the authorities. Understandably, in that climate there were increasingly fewer cases of ordinary teachers speaking out on systemic issues of modern pedagogy. As a consequence, the issue of exploring typical views held by ordinary teachers in different eras, some of which may well have influenced the teaching of certain subjects, has not been properly addressed by researchers of the history of Russian pedagogy up to now. Materials from the discussion that took place in the Kharkov Educational District in 1863 will help gain insight into the actual, rather than formal, attitude of provincial language arts teachers toward their subject, their methods for teaching it, and study guides on it that existed back then. In addition, these materials can help us better understand why secondary education in the Russian Empire evolved in the second half of the 19th century increasingly toward the regulation of curricula and where the freedom granted to teachers was deficient.

Finally, these texts can provide a unique insight into the organization of the daily pedagogical process in the gymnasium. Some teachers kindly shared how they normally conducted their classes, what they regarded as useful for their students, and what they did not see as such. Thus, materials from the discussion that took place among pedagogues in the Kharkov Educational District with regard to how to teach language arts can offer a valuable insight into a whole range of related narratives, some of the more interesting of which will be discussed in the present paper.

2. Materials and methods

The most active part in the discussion about the teaching of language arts in the Kharkov Educational District was taken by teachers at Novocherkassk Host Gymnasium. Accordingly, it will be worth drawing upon 'Copies from the Registers of the Pedagogical Council of Novocherkassk Gymnasium of August 24 and 28, 1863', held in the State Archive of Rostov Oblast (GARO. F. 358. Op. 1. D. 288. L. 16-21). This document offers an insight into the teaching programs and methods employed by junior grade teachers of Russian at the gymnasium. However, of greater significance for this study are circulars for the Kharkov Educational District. This is where we come across a note by A.M. Savelyev, a senior grade teacher at Novocherkassk Gymnasium, entitled 'On Teaching Russian Language Arts in Gymnasiums' (Tsirkulyar, 1863a: 65-70), the response to it by N.A. Lavrovsky (Tsirkulyar, 1863b: 105-109), and relevant reports detailing inspections of the gymnasium, which include descriptions of student progress in Russian language arts (Tsirkulyar,

1863c: 12; Tsirkulyar, 1863d: 204). Based on these sources and using the historical-descriptive and historical-comparative methods, the present work will show below how the Russian language arts course was organized and taught by different pedagogues, what the District's administration made of that, and what was achieved by individuals favoring the various pedagogical approaches.

3. Discussion

Arguably, the most significant achievement of D.E. Levshin and N.A. Lavrovsky in charge of the Kharkov Educational District was their ability to get teachers to take initiative in their work. The financial circumstances of those teachers were far from enviable. A.G. Filonov, one of the greatest pedagogues in the history of Novocherkassk Gymnasium, who compiled 'A Russian Chrestomathy with Comments' (Filonov, 1863), which went through several editions, described his own circumstances in 1859 as follows: "As a teacher you are left with two options: you can lead the life of a timeworker, i.e. run around from morning till night, from the gymnasium to the boarding school, from the boarding school to the institute, and from the institute back to the gymnasium; you do all this in one day; you come (or, even worse, are taken) home, drop heavily into bed, and lie there until the next day; or you can sink into irredeemable debt and, having forgone district lessons, stay at home and toil... There is no way you, as a person in public service, could combine district lessons with home classes. You always have to choose between the gymnasium and money, between doing your job and living your life, or between the school and the community – whichever way you want to look at it!" (Filonov, 1859: 163). The administration of the Kharkov Educational District was perfectly aware of the situation and realized that in that climate it was possible to neither force teachers prescriptively to be pedagogically creative nor boost funding for the gymnasium substantially. Ultimately, the decision was made to focus on non-material stimulation of proactive pedagogues, with N.A. Lavrovsky suggesting that one should search for "sound ways to galvanize and maintain the activity of instructors", aiming to ensure that the latter would not "stoop to the mechanical practice of merely delivering textbook content to students page by page year in, year out, an approach clearly meaningless educationally and even detrimental" (Tsirkulyar, 1861: 7).

What became a major form of non-material stimulation (and two-way communication aimed at getting insight into issues faced by ordinary educational institutions) was giving careful consideration to the pedagogical ideas of ordinary pedagogues. In 1863, a Novocherkassk Gymnasium teacher named A.M. Savelyev sent a highly critical note to the administration of the Kharkov Educational District entitled 'On Teaching Russian Language Arts in Gymnasiums'. He acted in this on his own. The District's administration showed a keen interest in the note. N.A. Lavrovsky prepared a written reply addressing the issues raised by the teacher, and the decision was made to publish the note in a Kharkov Educational District circular "with a view to eliciting opinion on this important matter" (Tsirkulyar, 1863a: 65).

A few words will now be said about A.M. Savelyev's biography. Born in 1835, he was a fairly young person then (Dontsy, 2003: 431). An 1859 Kharkov University graduate, he had not been in the teaching profession for long at that time (Artinskii, 1907: 321). His proactive and caring stance would help him build a brilliant career. He had worked as a secretary in the Don Regional Statistical Committee (the only scholarly organization in the Don region at the time) and an editor for the Don Gazette newspaper, published one of the first books on Don history ('A Three Hundred Year History of the Don Host'), and passed away when holding the high post of top aide in the Host's administration (Dontsy, 2003: 431). There are characterizations of A.M. Savelyev that describe him as a brilliant teacher (Artinskii, 1907: 210). Thus, as at 1863, A.M. Savelyev was a young but talented and highly proactive pedagogue (at least by the standards of the Don region) who ventured to challenge teaching practice in gymnasiums at the time.

What strikes you the most when you read 'On Teaching Russian Language Arts in Gymnasiums' is the openness with which the author talks to the administration about the issue. He is being completely blunt about his own imperfections in teaching and the poor aspects of his lessons. In doing so, he must have expected not criticism and punishment from the officials in charge of the Kharkov Educational District but assistance, hoping that "the Board of Trustees of the Kharkov District will not overlook my concerns and kindly point out to me the deficiencies in my teaching that I have failed to address" (Tsirkulyar, 1863a: 69-70). A.M. Savelyev was, basically, opening up a pedagogical discussion with the administration, wholeheartedly expecting the

officials to embrace this form of interacting with him – and, at the same time, hoping that the discussion would "inure to the common good" (Tsirkulyar, 1863a: 70).

The candid text by A.M. Savelyev offers a number of unique observations from an ordinary teacher about the way instruction in language arts was conducted in the early 1860s in Russian gymnasiums. A.M. Savelyev stresses therein that the problem was not only the absence of a good textbook in Russian language arts but also the fact that in the absence of an appropriate textbook each instructor would teach language arts in their own way. This was even reflected in the choice of the course's theoretical foundations: "Some teachers may like Belinsky's theoretical conclusions, some may prefer Buslayev's folk epic theory, and others may set much store by Chistyakov's teachings" (Tsirkulyar, 1863a: 65). Another serious issue was teachers' freedom in the choice of literary works to use in class, with this area characterized by some really absurd practices. For instance, one of A.M. Savelyev's fellow teachers based his judgment on the "vastness and diversity of the world of language arts" to cover in class whatever, literally, came to hand (e.g., covering "Homer alongside Griboyedov", followed by "Sophocles alongside Nekrasov") (Tsirkulyar, 1863a: 66).

The most curious observation made by A.M. Savelyev is that gymnasium teachers of language arts composing instruction notes was a matter of status in the early 1860s: "The word 'notes' is a magical one with gymnasium students. An instructor who uses notes in class is considered a good teacher. So does it make you a lousy one if you do otherwise?" (Tsirkulyar, 1863a: 65). Many would chase after status and compose instruction notes not because they were confident that such notes were better than the textbook but because they simply wished to prove their intellectual superiority over their fellows in the profession: "Teachers tend to substitute their own notes for a textbook not because they have an inner urge to employ notes as a necessity but simply out of self-esteem, a desire to flaunt their knowledge. Yet, if a predecessor of theirs used instruction notes too, they will pan that material and brand it as rubbish" (Tsirkulyar, 1863a: 66). Unfortunately, in that climate of poor teacher training, the practice of composing instruction notes would have dire consequences – something A.M. Savelyev learned the hard way. The pedagogue admits in his note that his lessons were of little benefit initially.

"I had to move in total darkness, groping my way", A.M. Savelyev writes describing the situation he was in after being appointed as teacher of language arts. He admits earlier that his university education did not provide him with much knowledge. Savelyev goes on, stating the following: "I did not know where to start, what to do, and what sources to use. At the same time, my self-esteem spurred me on to do something about it; the desire not to sink in the eyes of others made me work hard and assiduously. My predecessor used notes; accordingly, I saw it fit to do so, too" (Tsirkulyar, 1863a: 67). As we can see, A.M. Savelyev did not even consider the possibility of using a textbook in teaching the course. Instead, he composed his program based on a set of articles by V.G. Belinsky, which he, allegedly, had resolved to utilize solely because they were "to hand" (Tsirkulyar, 1863a: 67). The approach did not work. According to A.M. Savelyev, while he was aware that it was necessary to "move from facts to theory and derive rules from examples", in practice it was impossible to substantiate V.G. Belinsky's theories via specific examples from the material covered in class, so he confined his instruction to pure theorizing (e.g., to "bare theoretical notes on poetry, supported with no facts" or "logical and psychological definitions" (Tsirkulyar, 1863a: 67)). After some time, having realized his failure, the young teacher reconsidered his views and decided to forsake the use of lofty theories and confine his instruction in Russian language arts to an approach where students would "learn more facts" and would derive from them "brief notes about the various types of compositions" (Tsirkulyar, 1863a: 67).

However, the problem did not end there. As we can see, A.M. Savelyev attempted to confine his instruction in language arts to teaching the evolution of its genres. While he regarded this approach as fairly modest, relative to his own initial ambitions and, perhaps, those of his fellows in the profession, composing instruction notes even for a program like this would turn out to be quite a difficult task for someone who was an ordinary teacher (Tsirkulyar, 1863a: 67). A.M. Savelyev realized that it was impossible to gain insight into the evolution of a genre "without tracing the key historical aspects of its development in different cultures". However, despite having successfully completed a program of study in the Department of History and Philology, he, allegedly, was "not familiar with European literature" (Tsirkulyar, 1863a: 67). As a result, most of the examples he employed in covering the evolution of the genres were pretty strange. For instance, in teaching

drama, he drew upon Sophocles, V.A. Ozerov, W. Shakespeare, F. Schiller, and J.W. Goethe (strictly in that order!) (Tsirkulyar, 1863a: 67).

In this context, it is worth invoking A.M. Savelyev's 'Best Practices from Teaching the Modern History of Russian Literature', likewise published in Kharkov Educational District circulars. Note that Savelyev positioned this text as "a section of his instruction notes", i.e. a part of the handwritten textbook that he used for instruction at Novocherkassk Gymnasium (Tsirkulyar, 1863a: 66). Judging by what he relates in the above text, A.M. Savelyev's endeavor to teach language arts in the form of teaching the evolution of literary genres was a failure. In large part, the problem was his poor knowledge of philology. The pedagogue based his textbook on works by only a few, mainly well-known, Russian scholars and literary critics: "In composing my instruction notes, I drew upon critical articles by Belinsky and monographs by Polevoy, Pletnev, Nikitenko, Galakhov, and Vodovozov" (Tsirkulyar, 1863a: 66). Note that A.M. Savelyev personally had not even read some of the works mentioned in 'Best Practices from Teaching the Modern History of Russian Literature', with much of his knowledge thereof coming from reading reviews by the above critics (Tsirkulyar, 1863a: 66). Lastly, his program did not address in any way the evolution of the Russian language, although this was important for gaining a comprehensive insight into the evolution of genres in this language. The young teacher was aware of this shortcoming but could do nothing about it, as he "did not know a single composition on the history of the Russian language and stylistics" (Tsirkulyar, 1863a: 66).

Yet A.M. Savelyev's homemade textbook was not as bad as one could have expected under those circumstances. The program's modest nature is what benefited him – the pedagogue pursued maximum simplicity, shunning complex generalizations and redundant frills. Compositionally, he constructed his course with a focus on the consecutive study of Russian writers from the period between the 18th and the early 19th centuries such as A.D. Kantemir, V.K. Trediakovsky, M.V. Lomonosov, G.R. Derzhavin, D.I. Fonvizin, N.I. Novikov, N.M. Karamzin, I.A. Krylov, V.A. Zhukovsky, A.S. Pushkin, A.V. Koltsov, M.Yu. Lermontov, and N.V. Gogol-Yanovsky (Tsirkulyar, 1863a: 70-78; Tsirkulyar, 1863b: 85-105). Literary eras and literary genres were covered only in the context of the work of these authors, with there being no summarizing sections. Each author had a separate section devoted to him (except for A.D. Kantemir and V.K. Trediakovsky, who were considered jointly) (Tsirkulyar, 1863a: 70-72). The sections, written in simple language, contained only general information, some of which was inaccurate.

Let us consider, as an example, the work's sections on D.I. Fonvizin (incidentally, A.M. Savelyev renders this author's last name as "von Wiesen") and N.M. Karamzin. These two sections have a similar structure, as do most of the sections in the work. A.M. Savelyev first provides an author's biography. Then he talks about a person's creative work. D.I. Fonvizin is described as a satirical writer who condemned "what Kantemir armed himself against" (Tsirkulyar, 1863a: 77). Savelyev lists as Fonvizin's major works the comedies 'The Brigadier-General' and 'The Minor', which he personally seems, however, not to have read. Indeed, he regards Starodum as the protagonist of not 'The Minor' but 'The Brigadier-General' (Tsirkulyar, 1863a: 78). A.M. Savelyev provides a brief characterization of both comedies and describes their main characters. Yet he keeps it rather general (e.g., "The main objective in the comedy 'The Brigadier-General' is to deride superficial education that boils down to traveling to foreign lands, absorbing the niceties of French-style etiquette, and speaking French" (Tsirkulyar, 1863a: 77).

A.M. Savelyev considers N.M. Karamzin as a reformer of the Russian language and the founder of sentimentalism in Russian literature. Here is what he says about the writer: "Prior to Karamzin, our literature was dominated by a Latin speech construction model focused on the use of long periods. We did not have a good model for Russian speech – folk language was rejected by the educated community and thus remained at a low level of development; members of the nation's upper-class society did not speak in Russian; scholars used bookish Russian at work but spoke the language differently. Karamzin was the first to introduce into our language a new speech construction model, which was akin to that employed in living languages such as Italian and French" (Tsirkulyar, 1863b: 88). Whereas A.M. Savelyev is wholly supportive of this language reform, his attitude toward sentimentalism is somewhat ironic – to him, it is all about "effeminacy of feeling" (Tsirkulyar, 1863b: 87). As far as specific works by N.M. Karamzin, A.M. Savelyev does mention them ('Poor Liza', 'Letters of a Russian Traveller', 'Martha the Mayoress', and 'History of

the Russian State', and 'Natalya the Boyar's Daughter') but does not provide characterizations thereof (Tsirkulyar, 1863b: 87-88).

Thus, from a contemporary viewpoint, A.M. Savelyev's 'Best Practices from Teaching the Modern History of Russian Literature' is essentially a collection of popular essays on Russian writers, a deeply secondary one, with a number of factual errors at that. However, in the period's climate of the absence of a satisfactory textbook in Russian language arts, a text of this kind could well be of use as a basic book for instruction in the subject. As regards the opinion of Savelyev's contemporaries of his work, of interest is the detailed analysis thereof by N.A. Lavrovsky. In the view of this Kharkov University professor, genre-wise the text is not a textbook but a collection of essays, with each "not devoid of vivacity and attesting to the author's interest in the subject, his focus on scrupulous digestion of the material at hand, and his ability to put it to good use" (Tsirkulyar, 1863b: 108). It is not hard to notice that the actual positive qualities of A.M. Savelyev's composition singled out by N.A. Lavrovsky indicate a lack of originality on his part – this kind of praise is more appropriate in respect of a textbookish compilation than of an original text. Yet what was seen by N.A. Lavrovsky as a more serious flaw in A.M. Savelyev's work is that between the essays on the writers there exists "little internal connection – the reader is unable to trace the continuity of phenomena in the development of our literature" (Tsirkulyar, 1863b: 108). We get to go back to the fact that A.M. Savelyev did not manage to teach language arts as the history of the evolution of literary genres. Judging by the contents of his substitute for the textbook, his approach would not let one trace the literary evolution and would merely reduce the study of the history of literature to the study of the work of an atomized bunch of individual authors.

N.A. Lavrovsky found fault with both the general concept and the content of A.M. Savelyev's text. The professor found some of his characterizations of the Russian writers incomplete or inaccurate. The worst, in his view, was the essay on D.I. Fonvizin. He noted the artificialness of the parallel between D.I. Fonvizin and A.D. Kantemir and the absence in the essay of a description of the "literary phenomena" that had an effect on the work of the great Russian satirical writer (Tsirkulyar, 1863b: 108). As for the essay on N.M. Karamzin, N.A. Lavrovsky found fault with the following statement, which he even provided word for word in his report: "Prior to Karamzin, we had little of what one could read in Russian, as everything written before him was overly heavy and solemn, tending to be focused on portraying some heroic, non-existent world, with some unnatural, imaginary characters taking the stage" (Tsirkulyar, 1863b: 108). In addition, he expressed a regret that the work totally overlooked the literary significance of 'History of the Russian State' (Tsirkulyar, 1863b: 108).

However, despite all the flaws in the work, N.A. Lavrovsky did recommend it for publication (Tsirkulyar, 1863b: 109). This recommendation indicates that N.A. Lavrovsky's assessment of 'Best Practices from Teaching the Modern History of Russian Literature' is close to ours – while the Kharkov professor knew that the work had shortcomings and realized that it could not replace a real textbook, he saw it as a passable substitute while no such textbook was available. Thus, despite the inability of A.M. Savelyev's Russian language arts course to teach the theory of literature or at least provide students with insight into the evolution of literary genres and styles, it would still be able to provide them with basic knowledge in the subject.

We will not dwell here upon A.M. Savelyev's reasonings on which grade particular sections of the language arts course were to be taught in, as most of them are linked too closely with the realities of the 1860s Russian gymnasium sector and may be hard to understand if you are unfamiliar with those realities. Nevertheless, worthy of consideration are some of his arguments of a general nature. A.M. Savelyev taught fourth, fifth, sixth, and seventh grades. The Ministry of Public Education had prescribed a set of directions on what to cover in these grades in Russian language arts class (Tsirkulyar, 1863a: 68-69). However, whereas for fourth and seventh grades the Ministry's directions determined, even if in broad strokes, if not specific topics and works to work with, at least an array of themes to work on in class, things were somewhat different with fifth and sixth grades (Tsirkulyar, 1863a: 69). In sixth grade, the stumbling block was "the higher course in grammar", whatever that meant: "Was that historical Russian grammar, general philosophy, or the comparative grammar of some languages not taught in the gymnasium?" (Tsirkulyar, 1863a: 68). Yet the situation was the worst with the program for fifth grade. In citing the general items recommended for study, A.M. Savelyev complained that the study of rhetoric was outdated ("it has been a long time since ridiculed rhetoric with its inventions and tonics fell") and students had

difficulty comprehending theoretical information with no examples provided, with the only thing left for him to do being to teach only "general forms of composition and stylistics" (Tsirkulyar, 1863a: 68). However, general forms of composition could be covered in 10, at most 15, lessons, with an entire year left for stylistics, instruction in which was hindered by the absence of relevant books at the provincial gymnasium (it was hard to get scholarly works on the history of stylistics for teachers themselves to read up on the subject, not to mention study guides for students) (Tsirkulyar, 1863a: 68). As a consequence, for most of the year, the teacher would have to cover material that was not what was required: "I get to work with the major works of Zhukovsky, Pushkin, Lermontov, and Gogol, followed by Shakespeare and Schiller" (Tsirkulyar, 1863a: 68). All this indicates that the following problem in the teaching of Russian language arts existed as early as the 1860s (which, arguably, remains unresolved to this day) – requirements set for the course's curriculum by the authorities were mostly too high relative to teachers' actual capabilities. A.M. Savelyev's case is quite telling in this respect – it illustrates the actual limitedness of the knowledge possessed by even a recent graduate of a provincial university regarded by many as a brilliant teacher. In fact, what made him a good teacher was actually his willingness to simplify the course as much as possible, cease to merely relay to students some lofty literary theories, and confine instruction to the practical study of the biography and work of certain writers.

Worthy of separate consideration are A.M. Savelyev's descriptions of his teaching system. He did not teach grades one through three, with many of those under his tutelage being students he received from his fellow teachers whose job was to teach basic literacy skills. However, in practice it was not that simple. A.M. Savelyev noted that many of the students he received had "a solid command of grammar" and were good at dictation – yet many of them made bad mistakes when it came to writing a composition (Tsirkulyar, 1863a: 69). The young pedagogue attributed this to students lacking practice in writing texts of their own, suggesting that "individual exercises" be used as part of the curriculum starting in first, as opposed to fifth (as was the convention at the time), grade (Tsirkulyar, 1863a: 69).

A.M. Savelyev taught Russian literature, rather than Russian. His text merits note for his description of his own unsuccessful experience, which he positions as something typical: "In the beginning, most of us who completed a course of study at the university tend to follow the style of our own college professors, copy their techniques in our own work, and conduct our lectures in the same way they did" (Tsirkulyar, 1863a: 68). However, this approach proved ineffective in practice: "Conducting lectures in the manner of your own professors proved totally useless for the most part" (Tsirkulyar, 1863a: 68). As a consequence, A.M. Savelyev had to take the path of maximum simplification. In essence, his method involved normally going over the same material twice. His instruction notes, i.e. his handwritten textbook, served as a brief compendium for students, with information of a more detailed nature provided to them in class (Tsirkulyar, 1863a: 67-68). Judging by his somewhat vague description, students did not take notes in class but were to capture at home in their notebooks "what they read and went through in their previous lecture" (Tsirkulyar, 1863a: 68). In his subsequent class A.M. Savelyev would go through the contents of the notebooks of five or six students, such notes mainly containing bad mistakes, and only after going through the material for the second time would his students manage to pick it up more or less decently (Tsirkulyar, 1863a: 68). Thus, judging by what A.M. Savelyev tells us in 'Best Practices from Teaching the Modern History of Russian Literature', he mainly communicated to his students basic information about literary works and their authors, shunning theorizing and complex themes, which clearly suggests that the average student at Novocherkassk Gymnasium had an extremely low intellectual level.

A.M. Savelyev was perfectly aware of this problem. He even wrote of the danger of him falling into "despair at scores of logical and grammar mistakes found in students' notebooks" (Tsirkulyar, 1863a: 68). However, he suggested one simple approach to this – that teachers should accept that students' intellectual backwardness is something normal and should just "teach, regardless of students' current level of knowledge" (Tsirkulyar, 1863a: 68). What is more, the young pedagogue placed much of the blame for the intellectual limitations of students at the gymnasium on his fellows in the profession, noting that "they complain about the backwardness of their students and shift the blame onto their predecessors or fellow instructors in an effort to cover up their own sinful sloth" (Tsirkulyar, 1863a: 68). While A.M. Savelyev admitted that students might not know something that they were supposed to have gone through with other instructors long ago, he called

on teachers to refrain in such cases from "scoffing at the ignorance of their students and the negligence of their fellow instructors" and just try and explain, where possible, a problematic piece of material from another subject (Tsirkulyar, 1863a: 68).

Thus, the note 'On Teaching Russian Language Arts in Gymnasiums' by A.M. Savelyev exposed a whole raft of issues in 1860s Russian provincial practical pedagogy, namely low teacher qualification levels, student backwardness, the absence of a quality textbook in literature, the lack of systemicity resulting from a combination of those factors, and often even the pointlessness of Russian language arts classes. Yet, while the young pedagogue knew that those problems were there, things were a little more complicated when it came to resolving them. A.M. Savelyev believed that the best way to start was to get a textbook, i.e. "something that would serve as a foundation in teaching, limit the arbitrariness of instructors, and, at the same time, force them to strictly follow the system" (Tsirkulyar, 1863a: 66). Arguably, A.M. Savelyev was right overall – in that climate of low teacher competence levels, creating a good textbook was the only way to bring at least some organization to the course by putting an end to the use of all kinds of wild pedagogical practices, like the one involving teaching literature by way of having students retell V.G. Belinsky's theories in detachment from specific literary works or having them unmethodically work with random texts merely on the basis of the "vastness and diversity of the world of language arts".

What A.M. Savelyev proposed was a fairly original way of designing a textbook: "Composing a textbook cannot be done by just one person", he wrote, suggesting that such a textbook would inevitably come out very much subjective (Tsirkulyar, 1863a: 66). Therefore, the pedagogue suggested gathering instruction notes from all teachers in the District (their "best sections", to be exact) with a view to having members of the Board of Trustees then compile a textbook (Tsirkulyar, 1863a: 66). In fact, he sent his 'Best Practices from Teaching the Modern History of Russian Literature' to the administration with this particular aim in mind, rather than to have it published (Tsirkulyar, 1863a: 66-67).

As mentioned earlier, the response to A.M. Savelyev came from N.A. Lavrovsky. It is Lavrovsky who proposed publishing everything sent to the administration by the Novocherkassk teacher, which he explained in the following way: "The notes by Savelyev, which he presented to the Board of Trustees with a particular aim in mind, are perhaps the first phenomenon of this kind in the history of, and perhaps not only, the Kharkov District, one based not on external measures and incentives but solely on a sincere awareness of the need for a collaborative and team-minded attitude toward the development of learning material for the Russian language arts course" (Tsirkulyar, 1863b: 108). Thus, the administration of the Kharkov Educational District decided to back the young teacher's initiative and thus assure the pedagogical community that the Board of Trustees not only would not punish him for his mistakes but even arrange for the publication of his texts – and, on top of that, provide him with advice on teaching the course, something A.M. Savelyev had sought originally.

Such pieces of advice are what most of N.A. Lavrovsky's response was comprised of. With that said, this reply was of a knowingly public nature and was, from the outset, intended for publication in a circular for the Kharkov Educational District. Thus, N.A. Lavrovsky was being faced with a tough task: he simultaneously was to point out the bad mistakes of the inexperienced pedagogue, encourage him to carry on with his pedagogical research, and encourage other teachers in the Kharkov Educational District to employ better pedagogical practices. Therefore, the text by N.A. Lavrovsky is much less open than the notes by A.M. Savelyev and is not so informative as a source for his era. Nevertheless, it provides a better insight into the pedagogical ideals that guided the administration of the Kharkov Educational District in the early 1860s, which may be regarded as fairly felicitous in that climate of underfunded schools and low teacher qualification levels in the area.

N.A. Lavrovsky accepted most of A.M. Savelyev's observations as valid. He admitted that there had yet to be produced a good textbook in Russian language arts, that, despite recommendations from the Ministry of Education, there was not in place a coherent program for teaching Russian language arts either, and that in that climate gymnasium pedagogues all did as they pleased, relying in their teaching mainly on their own instruction notes (Tsirkulyar, 1863b: 105). However, the Kharkov professor opted to refrain from criticizing ordinary teachers and did not even raise the issue of the scholarly and pedagogical caliber of teachers' homemade instruction notes. Instead, he pointed out that in a climate where "it is hard to come across two language arts instructors with identical programs, little good will come out of replacing the notes of one teacher

with those of their successor, with each strictly preferring to go by their own notes" (Tsirkulyar, 1863b: 105-106). Thus, whereas the text by A.M. Savelyev mainly criticizes ordinary teachers, including himself, N.A. Lavrovsky chooses to focus his criticism on textbooks and curricula. What is particularly special about this way of dealing with it is that both the ordinary teacher and the member of the District's administration blamed themselves to a degree for poor instruction in Russian language arts in the District and focused most of their attention specifically on the areas in the organization of the educational process which they were personally responsible for, without shifting the blame onto each other.

As regards the textbook, N.A. Lavrovsky found A.M. Savelyev's suggestions on composing it insufficient. He argued that having the District's administration compile instruction notes from different teachers into a textbook would be of little use for three reasons. Firstly, since the District's Board of Trustees included only one specialist in Russian philology, the Kharkov University language arts instructor, he, essentially, would be the one to be composing the textbook. In other words, having a single person do it left room for subjectivity, something A.M. Savelyev was against. Secondly, the compiling of instruction notes in various educational districts, which made instruction in the subject uniform within them, would not resolve the issue at the national level. Each district would end up using a textbook of its own. Thirdly, N.A. Lavrovsky believed that a good textbook could not be a compilation of texts from different authors but was to be based on "a unity of thought, view, direction, and character" (Tsirkulyar, 1863b: 106). The Kharkov professor argued that a good textbook in Russian language arts could be written only upon the attainment by the pedagogical community of a unity that was "the product of diversity and concerted, transparent, and competent work" (Tsirkulyar, 1863b: 106). Thus, he concurred with A.M. Savelyev in that there was a need to have Russian language arts teachers interact with each other as much as possible and compare their instruction notes, looking for the more effective pedagogical practices. At the same time, N.A. Lavrovsky predicted that creating a good textbook in Russian language arts would involve much more time and effort than A.M. Savelyev allowed and that such a textbook would be not a compilation of existing texts but a new text created by university instructors based on the opinions of multiple school teachers (Tsirkulyar, 1863b: 106-107).

Consequently, for the time being language arts teachers would have to dispense with a good textbook and continue using their instruction notes. Curiously, while thinking this way, N.A. Lavrovsky did accept the pedagogical practice of teachers using instruction notes, which, despite all its shortcomings, he regarded to be better than using a poor textbook. This augmented the significance of teachers designing their teaching program on their own, and N.A. Lavrovsky suggested that in designing his A.M. Savelyev disregard the Ministry's recommendations altogether. The professor suggested splitting instruction in literature in grades four through seven into two logical and consecutive parts – teach the theories of poetry and prose in grades four and five and cover the history of literature in grades six and seven (Tsirkulyar, 1863b: 107). N.A. Lavrovsky noted that A.M. Savelyev was right in suggesting that one ought to "move from facts to theory and derive rules from examples" (Tsirkulyar, 1863b: 107). However, in his opinion, the young teacher erred in hoping that, in going through various texts with him, students would be able to derive a theory from them. This would require a sounder link between the learning material and "the overall objective for the project" (Tsirkulyar, 1863b: 107). What N.A. Lavrovsky saw as the primary objective for a language arts teacher was precisely the choice of appropriate texts to work with: "It is all to be about selecting the right samples to work with and arranging them in such a way as to ensure that a reading activity results in definitions naturally presenting themselves to the student's consciousness" (Tsirkulyar, 1863b: 107). Therefore, in grades four and five instruction in the theory of poetry and prose would need to involve having students read "material covering all kinds and types of prose and poetry", from which they would derive a theory, and in grades six and seven instruction in the history of literature would probably need to be conducted in a similar way (N.A. Lavrovsky did not dwell upon the instruction method for this) (Tsirkulyar, 1863b: 107).

Thus, N.A. Lavrovsky and the administration of the Kharkov Educational District answered A.M. Savelyev's query in full, in as polite and respectful a manner as possible, providing him with recommendations on how to enhance his instruction. However, this was not the end of it. That same year, 1863, but still prior to the publication of A.M. Savelyev's material and N.A. Lavrovsky's response in circulars for the Kharkov Educational District, the District's administration officially requested that gymnasiums within it provide a report on their curricula for a number of subjects,

including Russian language arts. Tellingly, the caveat was also made that the best programs would be eligible for publication, while teachers were asked to express their opinion of the curriculum "based on their own view of the subject, regardless of the requirements of the official textbook" (Artinskii, 1907: 191). This provides us with at least a partial insight into the way instruction in the course was conducted by A.M. Savelyev's fellow instructors, i.e. a group of ordinary teachers subjected to strong criticism in his text.

Russian was taught to grades one through three at Novocherkassk Gymnasium by A.A. Leonov and I.P. Pryanishnikov. Just like A.M. Savelyev, these people had played a certain role in Don history. A.A. Leonov was the more experienced of the two. He started out teaching history and geography in one of the Don region's district schools back in 1840. He switched to teaching Russian in 1841, and in 1850 he was transferred to Novocherkassk Gymnasium (Artinskii, 1907: 332). A graduate of Kharkov University (just like A.M. Savelyev), A.A. Leonov was a well-known poet (his first collection drew a moderately positive reaction from V.G. Belinsky) and opinion writer (his work in this capacity has attracted the attention of modern historian A.A. Volvenko) (Volvenko, 2019: 134-145). I.P. Pryanishnikov, another Kharkov University graduate, had been teaching since 1859 (Dontsy, 2003: 419). He was famed mainly as a brilliant editor at the Don Gazette newspaper (Dontsy, 2003: 419-420).

Unfortunately, no material is available at this time dealing with the teaching programs of A.A. Leonov and I.P. Pryanishnikov. The only surviving piece of information related to this is the contents of a discussion they took part in during a teachers' meeting at Novocherkassk Gymnasium on August 28, 1863 (GARO. F. 358. Op. W1. D. 288. L. 18ob.). The teaching program used by A.A. Leonov was examined in greater detail than I.P. Pryanishnikov's. Its criticism indicates that N.A. Lavrovsky's ideas resonated with the more progressive Novocherkassk pedagogues. Most importantly, A.A. Leonov was criticized precisely for his insufficient attention to the choice of learning material: "Mr. Leonov does not specify in his note the excerpts and articles he would use in the course and the order in which they are to be covered" (GARO. F. 358. Op. 1. D. 288. L. 20). While the Novocherkassk pedagogues did not get as far as the idea that students must themselves derive rules from texts covered in class, as had been suggested for senior grades by N.A. Lavrovsky, they were aware that "ensuring the proper development of students requires selecting one's learning material carefully" (GARO. F. 358. Op. 1. D. 288. L. 20). With that said, A.A. Leonov's approach was not the result of negligence or inattention. He was not interested in the content of a text – he needed a text only as "something to extract grammar rules from" (GARO. F. 358. Op. 1. D. 288. L. 20ob.). On the contrary, the Pedagogical Council argued that "sensible reading and going through the material will be more instrumental in helping students learn their native language than learning its grammar by way of just formally going through the first text to hand" (GARO. F. 358. Op. 1. D. 288. L. 20ob.). As we can see, A.M. Savelyev was quite honest about the way instruction in Russian language arts was conducted in gymnasiums in the early 1860s – some teachers, indeed, would have their students go through totally random texts, without keeping to a more or less articulate program (merely on the basis of the "vastness and diversity of the world of language arts").

However, a more fundamental issue was not even this but that even most of A.A. Leonov's colleagues were unable to understand from his note the specific way in which he normally explained grammar rules to his students: "The description of his method of teaching Russian provided by Mr. Leonov in his note is too general and vague; he does not support any of his arguments with examples or compelling explanations" (GARO. F. 358. Op. 1. D. 288. L. 20ob.-21). Similar fault was found with I.P. Pryanishnikov: "The main problem with Mr. Pryanishnikov's program is pretty much the same as in the case of Leonov – too much vagueness and the instructor's questionable choice of material for reading" (GARO. F. 358. Op. 1. D. 288. L. 21). Thus, instructors who taught Russian to junior grades at Novocherkassk Gymnasium personally did not have a clear idea of what exactly their teaching methodology was and tended to conduct their classes in a relatively unsystematic manner – by way of working with random texts. It is no wonder that A.M. Savelyev might have then fallen into "despair at scores of logical and grammar mistakes found in students' notebooks".

Neither A.A. Leonov nor I.P. Pryanishnikov mentioned anything about using handwritten instruction notes. They had drawn their material from certain works by A.Kh. Vostokov, a prominent Russian philologist, but his guide for teaching at lower educational institutions was

not one of them, and primary use was made of his works on language theory (GARO. F. 358. Op. 1. D. 288. L. 21). The Pedagogical Council demanded that the use of those works be discontinued with immediate effect, as students in junior grades were still too young to "learn theory by way of Vostokov" (GARO. F. 358. Op. 1. D. 288. L. 21). This example evidences what in Novocherkassk Gymnasium was an alternative to A.M. Savelyev's crude instruction notes, used as a substitute for the textbook in Russian language arts. Primitive essays on Russian writers were, doubtless, a better choice for shallow students than fundamental scholarly philosophical works.

We will now attempt to establish just how effective the teaching methodologies of A.M. Savelyev, A.A. Leonov, and I.P. Pryanishnikov had been and see whether taking a more conscious approach to teaching the subject produced a decent result. Fortunately, exams at Novocherkassk Gymnasium held between May and June 1863 were attended by an official from the Kharkov Educational District, who afterwards would provide a detailed account of student performance there.

The performance of those under the tutelage of A.A. Leonov and I.P. Pryanishnikov was very poor. According to the exam inspector, "even those in third grade exhibit a rather jumbled command of the sentence and its parts, are scarcely familiar with the parts of speech, and tend to be poor at parsing sentences, with many resorting to guesswork" (Tsirkulyar, 1863d: 204). Another area addressed by the exam inspector was the highly deficient teaching methodology employed by A.A. Leonov and I.P. Pryanishnikov, which is what he linked the pedagogical failure to: "During the year, written exercises mainly involved rewriting verses and learning them by heart; writing a composition, rewriting a verse into prose, or, at least, retelling on paper what they have read – students did none of this" (Tsirkulyar, 1863d: 204).

A.M. Savelyev did a lot better, although his performance was far from perfect. The progress of students in fourth and fifth grades was recognized as satisfactory, with most managing to complete their written assignments in literature, although student literacy did leave much to be desired (Tsirkulyar, 1863d: 204). The exam for sixth-graders was not attended by an exam inspector (Tsirkulyar, 1863d: 204). What was described in the most detail is the exam for students in seventh, final, grade. Overall student performance in the exam was satisfactory. One student did very poorly, but three did very well on it (Tsirkulyar, 1863c: 12). It was noted separately that students were familiar with the biographies of prominent Russian and foreign writers alike and that they had read top works of Russian and foreign literature "in part, if not in full" (Tsirkulyar, 1863c: 12). Most of the students displayed a skill in writing a composition, although there were some whose texts were quite poor due to "the absence of subject matter and a lack of logical consistency" or were distinguished by illiteracy (Tsirkulyar, 1863c: 12). Thus, the main weakness demonstrated by students at Novocherkassk Gymnasium was in literacy, which A.A. Leonov and I.P. Pryanishnikov had not cultivated in primary grades. Students' knowledge of literature, on the contrary, was systematic, with the exam inspector even remarking that A.M. Savelyev had actually gone with his students through the texts of various major literary works – rather than focusing on just communicating conventional views on them.

4. Conclusion

Materials from the discussion that took place in 1863 among pedagogues in the Kharkov Educational District with regard to Russian language arts instruction helped gain an insight into how this discipline was taught at that time in ordinary gymnasiums in the Russian Empire, what ordinary instructors thought of goals and objectives for the course, and what their teaching programs looked like. Below are the key insights from the research reported in this paper.

1) The teaching of language arts was the weakest area in 1860s Russian practical pedagogy. There was no proper textbook available for instruction in the subject; the curriculum designed by the Ministry of Public Education was obscure even to teachers, with some of its areas being impracticable to cover because of the lack of appropriate literature. Consequently, ordinary provincial gymnasiums experienced a rather chaotic situation with instruction in language arts, with each instructor teaching the course by way of a program of their own and such programs within the same gymnasium tending to have little in common with each other.

2) The average pedagogue had a relatively low level of qualification at the time. To have high status in the eyes of their students and fellows in the profession, language arts teachers would have

to conduct lessons using an improvised textbook, in the form of instruction notes, which was not a very professional approach.

3) At worst, classes were conducted without a textbook and a coherent program altogether. For instance, A.A. Leonov and I.P. Pryanishnikov, junior grade instructors of Russian at Novocherkassk Gymnasium, were unable to provide a coherent explanation of their teaching methodologies, and their classes were confined to rewriting randomly chosen verses and memorizing particular tenets of the theory of Russian based on the fundamental works of A.Kh. Vostokov, which were a little difficult to comprehend for most students.

4) In that climate, both the administration of and the more progressive pedagogues in the Kharkov Educational District suggested simplifying the curriculum and focusing not on theory but on having students read deliberately selected texts to learn the basics of literature. This produced some results – an inspection of Novocherkassk Gymnasium revealed that, while its junior grades, taught by A.A. Leonov and I.P. Pryanishnikov, were characterized by extremely poor student knowledge, the situation improved by the final year of school, mainly owing to the efforts of A.M. Savelyev, who had deliberately simplified the program, with some students exhibiting a decent knowledge of their native language and literature.

Thus, what the program of teaching language arts in Russian gymnasiums needed in the early 1860s was simplifying, not complicating. This case reminds us of the following simple principle, which is often overlooked even in modern pedagogy: trying to complicate the curriculum and expand it with even useful knowledge without having in place a quality textbook and a properly trained teaching workforce may result in poor student knowledge.

Worthy of separate consideration is the discussion among pedagogues at Kharkov Educational District about the prospects of creating a textbook in Russian language arts. As we can see, the pedagogical community was well aware of the need to have one. There was an approximate understanding of what it was to be. A.M. Savelyev and N.A. Lavrovsky, engaged in a debate about it, converged in the view that, firstly, there was a need for a good textbook and, secondly, the textbook was to rely on the real experience of gymnasium teachers. Therefore, it was argued that there was no need to rush in producing it. The debating parties, instead, suggested analyzing, by way of various methods, the teaching programs and suggestions of all teachers in the District and then creating on that basis, rather than on the basis of the subjective views of a single individual or the administration, a textbook characterized by "a unity of thought, view, direction, and character", a unity that was "the product of diversity and concerted, transparent, and competent work". The approach where textbooks are created based on the real practical experience of multiple teachers, rather than on the theoretical pedagogical views of a narrow circle of individuals, has retained its validity to this day.

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The Policy on Women's Education Pursued by the Zemstvo Liberal Party in Chernigov Governorate in the Period between the 1870s and 1880s. Part 1

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Abstract

This paper explores the policy pursued by the opposition aristocratic fronde in Chernigov Governorate in the area of women's education in the second half of the 19th century. The Era of Great Reforms (1856–1874) in the Russian Empire facilitated the emergence of a whole network of state and municipal, as opposed to private, women's educational institutions, such as gymnasiums and boarding schools. The retrieved historical sources, most of which are being introduced here into scholarly discourse for the first time ever, indicate that a key role in these processes was played by the zemstvo institutions, particularly the Zemstvo Liberal Party in Chernigov Governorate. Nominally, the period under review witnessed two stages in the policy pursued by the zemstvo opposition in Chernigovshchina with regard to women's education: (1) the 1870s and (2) the period of the reign of Emperor Alexander III. The first stage was characterized by devoted efforts on the part of liberal zemstvo members in building the network of women's educational institutions in the province. Chronologically, the first part of the present work will cover this particular stage.

The authors' conclusion is that initially the building of the region's network of women's educational institutions was largely done through the devoted efforts of liberal zemstvo members in Chernigov Governorate. An undoubted achievement of the Liberal Party was the establishment of Borzna Zemstvo Female Progymnasium. The zemstvo liberals managed to obtain funding for this educational institution. No less important is the fact that members of the local liberal aristocracy were initiators of the provision of financial assistance by Chernigov Governorate's self-governing zemstvo authorities, including toward the needs of women's educational institutions outside of the region.

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1. Introduction

The issue of zemstvo liberalism in the north of leftbank Ukraine, a major political current in the liberation movement in the Russian Empire in the Era of Great Reforms (1856–1874), remains quite a topical one. At the same time, it is one of the more underresearched areas in the history of the Ukraine of the second half of the 19ᵗʰ century. A case in point is the humanitarian policy pursued by the Zemstvo Liberal Party in Chernigov Governorate in the area of public education, particularly the women's education sector. To date there has been no dedicated research on this subject. The present paper seeks to fill this gap and explore the key characteristics of the policy pursued by the opposition aristocratic fronde in the north of leftbank Ukraine in the area of women's education.

2. Materials and methods

In putting this work together, primary use was made of relevant print sources, like protocols, verbatim records, and minutes of sittings of the Uyezd and Gubernia Zemstvo Assemblies in Chernigov Governorate, held in the specialized research libraries of the State Archive of Chernigov Oblast and the V. Tarnovsky Chernigov Oblast Historical Museum (Chernigov, Ukraine). Most of the historical sources used in the research reported in this work are being introduced into scholarly discourse for the first time ever.

To achieve the study's objectives, use was made of general and special research methods. Specifically, the use of universal methods such as analysis and synthesis helped to gain an insight into the key historical events and processes directly associated with the development of women's education in the region, explore some of their specific aspects, and draw meaningful conclusions. The use of induction and deduction helped to build the relevant body of empirical research to provide the basis for the study's imperatives. The factual material helped to develop relevant theoretical definitions, and the study's conclusions were supported with specific facts. The use of the descriptive method helped to provide a consistent account of the history of the participation and devoted efforts of the Zemstvo Liberal Party in the cause of institutionalization of women's education in Chernigov Governorate in the 1870s. The use of the comparative-historical method helped to gain an insight into the nature of the activity of the region's opposition aristocratic fronde in the area of women's education, assess its practical achievements, and compare the levels of the development of women's education prior to the mid-19ᵗʰ century and in the Era of Great Reforms. The use of the chronological method helped to gain a general idea of the policy of the zemstvo liberal movement in the area of women's education by exploring it in chronological and logical order.

The use of the term 'Zemstvo Liberal Party' appears to be valid, as the existence of two ideologically distinct parties engaged in bitter political rivalry with each other in the region – the "right" one (conservative and reactionary) and the "left" one (democratic and liberal) – has been confirmed by both prominent researchers of the history of the zemstvos in the Russian Empire (Veselovskij, 1911: 302-457) and actual participants in and witnesses to political structuring processes in the Zemstvo Assembly in Chernigov Governorate (Rusova, 1996: 35-53; Hizhnjakov, 1878: 243-245).

3. Discussion

The historiography on the development of women's education in the Russian Empire in the second half of the 19ᵗʰ century is quite extensive. The issue has been investigated both in the context of the education policy pursued by the Romanovs' empire and as a standalone research subject. Among the contemporary researchers of the subject, of particular note are I. Kornilova, T. Magsumov, R. Shakirov, D. Kudinov, A. Lebid, E. Panova, and M. Ponomareva (Kornilova, Magsumov, Shakirov, 2016; Kornilova, Magsumov, 2017; Kudinov, 2016; Kudinov, 2018; Panova, Ponomareva, 2022; Lebid, Shevchenko, 2021; Lebid, 2022a; Lebid, 2022b). These are just some of the many researchers interested in the study of the various aspects of the history of women's education in the Russian Empire.

Contemporary historiography contains numerous research studies exploring particular aspects of the history of the zemstvo liberal movement in the north of leftbank Ukraine. For instance, the summarizing works of I. Zhilenkova, V. Mojsijenko, and O. Red'kina explore the major landmarks in the political history of zemstvo liberalism, including in Chernigov Governorate (Zhilenkova, 2000; Mojsijenko, 1999; Red'kina, 2002).

It is only in recent years that Ukrainian researchers have made significant progress exploring zemstvo liberalism in northern Ukraine –with regard to both relevant personalities, i.e. members of the opposition aristocratic fronde, and specific areas of the activity of this current in the liberation movement in the Russian Empire. Of particular note are the works of P. Jucevych, A. Rahno, and N. Kotelnitsky (Jucevych, 2021; Rahno, 2017; Rahno, 2018; Kotelnitsky, 2018; Kotelnitsky, 2019; Kotelnitsky, 2021).

However, since the above-mentioned works are what the historiography of the zemstvo liberal movement is essentially limited to, the present publication appears to be both timely and overdue, as there is currently a paucity of research on the subject.

4. Results

It is commonly known that women's education was not a mass phenomenon in the Russian Empire up to the mid-19th century. Females were mainly educated either at home, as was the case with aristocrats who hired tutors, or at private specialized educational institutions, to which nobles, i.e. members of the dominant social class, sent their daughters so that they could get a top education. For instance, a school that was highly popular in Chernigov Governorate during that period was the private boarding school for noble maidens run by M. Volk-Karachevskaya, the mother of two prominent members of the region's opposition liberal fronde – N. and G. Volk-Karachevsky. This boarding school was famous for its broad curriculum, which included a range of disciplines from divinity, Russian, history, and arithmetic to several foreign languages, secular ethics, choreography, visual arts, and music (CHV, 1857; CHV, 1858).

The Era of Great Reforms changed in a revolutionary way the state of affairs concerning women's education in the Russian Empire. The upsurge of hope in the hearts of the public, the yet another "opening up to the world" of the Romanovs' state, the massive penetration of Western values and worldviews into the country, and the emergence of feminist trends and gender equality imperatives – all this led to the emergence of a network of women's educational institutions in the country, including in northern Ukraine. These educational institutions were established and funded with money either from the state budget or from the budgets of the institutions of urban and local government. The zemstvo institutions and members of Chernigov Governorate's Zemstvo Liberal Party played a key role in these processes. This will be illustrated below based on information from a set of relevant historical sources.

In September 1870, members of the Zemstvo Liberal Party in Chernigov Governorate came up with the suggestion that the women's night classes at Borzna School should be placed under the purview of the Borzna Uyezd Zemstvo with the aim of developing women's education in the region and with a view to transforming the classes into a women's school. The Board of Trustees for the night classes backed the progressive initiative. The decision was made to have two grades at the school, with basic core subjects studied in first grade and popular women's crafts in second grade. They appointed as the principal of the women's school M. Imshenetskaya, who was the mother of M. Imshenetsky, a member of the region's opposition aristocratic fronde.

Since most of the students were natives of Chernigov, the decision was made to turn to the Chernigov City Duma for financial assistance for the educational institution. The cost of tuition for students from middle-class families would be 3 rubles per year. Education would be free for students from the lower strata of society. However, the City Duma and the City Council of Chernigov refused to help the educational institution, with even a decent building not provided for the school. The school's Board of Trustees then sought assistance from the Borzna Uyezd Zemstvo. The Borzna Uyezd Zemstvo Council provided 720 rubles from its budget toward the rent of a building for the school. The chosen building was a property owned by a local merchant named P. Belous. The school's principal, M. Imshenetskaya, provided instruction in Russian and literature gratuitously. The circle of sponsors supporting the school included A. Petrunkevich (the wife of I. Petrunkevich, the "patriarch" of zemstvo liberalism in the Russian Empire), who donated

100 rubles, and M. Imshenetsky (I. Petrunkevich's party mate), who donated 70 rubles (ZSCH, 1872: 102-110).

It is particularly worth noting that members of the region's opposition aristocratic fronde, who constituted the majority in the Borzna Uyezd Zemstvo Assembly and were in charge of the Uyezd Zemstvo Council, did not stop at what had been done and undertook a project on reorganizing the women's school into Borzna Women's Zemstvo Progymnasium. The idea behind this was to upgrade the status of the educational institution to a secondary school and make it independent from the interference of the regional bureaucracy by placing it under zemstvo patronage.

On September 22, 1870, a sitting of a session of the Borzna Uyezd Zemstvo Assembly featured a report by the Uyezd Zemstvo Council on setting up and operating a women's zemstvo progymnasium in the city of Borzna. This progressive initiative was opposed by the conservatives. Specifically, members of the reactionary aristocracy, who argued that the zemstvo authorities had done a lot for the development of public education already, proposed an alternative – provide funding from the uyezd zemstvo budget toward the education of members of the nobility, many of whom had allegedly gone broke as a consequence of the abolition of serfdom in the country, at secondary and higher educational institutions in the Russian Empire.

I. Petrunkevich, the leader of the opposition aristocratic fronde in northern Ukraine, delivered a speech on the subject, in which he expressed flat-out opposition to the conservatives' alternative proposal. He justly pointed out that the zemstvo institutions did not prevent the nobility from enjoying the benefits of education at primary public schools. I. Petrunkevich argued that the introduction of zemstvo scholarships for children of aristocrats entering a top gymnasium or a university would simply ruin the prospects of building and opening rural schools that could provide peasant children, i.e. descendants of former slaves who, moving forward, could form the basis of the province's society, with so-much-needed primary education. Accordingly, I. Petrunkevich considered the above-mentioned wishes of the nobility as baseless, being convinced that the nobility's corporate interests were incompatible with the interests of the peasant communities. In his view, the education of children of aristocrats was to be handled by specialized corporate institutions, while that of the bulk of the population was to be minded by elective urban and zemstvo self-governing bodies, whose votership was essentially made up of members of the peasant estate.

Following a lengthy debate, the Borzna Uyezd Zemstvo Assembly directed that:

1) there be established a zemstvo women's school in the city of Borzna;

2) the sum of 250 rubles be provided from the budget of the Borzna Zemstvo to ensure the successful operation of the school;

3) a special board of trustees be formed in order to facilitate the school's large-scale development; I. Petrunkevich and his wife, A. Petrunkevich, be appointed as members of the Board;

4) a petition be filed with the Trustee of the Kiev Educational District to obtain permission to open up Borzna Zemstvo Women's Progymnasium, and, if permission was granted, the school be transformed at the start of the following school year into a women's progymnasium, with its status being thereby upgraded;

5) the sum of 700 rubles be provided annually from the budget of the Borzna Uyezd Zemstvo toward the comprehensive development of the progymnasium;

6) the Board of Trustees of the progymnasium, the Borzna City Duma, and the Office of the Chernigov Governor be petitioned for the allocation of state funding toward the needs of the educational institution, provision of a decent building for it, and development of a circle of sponsors and philanthropists committed to supporting it;

7) it be ensured that the progymnasium would be attended by students of all social backgrounds so that peasant children could enjoy the same benefits of attending the facility as their more socially advantaged counterparts.

The Borzna Uyezd Zemstvo formed the Board of Trustees of the women's progymnasium, which included prominent members of the Zemstvo Liberal Party in the north of leftbank Ukraine such as I. Petrunkevich, M. Imshenetsky, and N. Volk-Karachevsky (ZBZ, 1870. №2: 11-12).

On September 24, the Borzna Uyezd Zemstvo Council submitted to the Assembly an additional report covering the procedures for establishing and opening Borzna Women's Progymnasium. The executive body expressed the opinion that the upkeep of the future educational institution would require no less than 1,000 rubles per year. However, since the

progymnasium already had wealthy sponsors, who had donated to it 25 rubles each, and the Ministry of Public Education had reported the allocation of a financial subsidy from the state budget for the support of the school's operation, the Borzna Zemstvo's actual budgetary outlays for the purpose would not exceed 700 rubles per year. To conclude the bureaucratic procedures for the establishment of the progymnasium, the Council requested that the Assembly:

1) obtain official permission from the Trustee of the Kiev Educational District authorizing the activity of the school's special board of trustees;

2) elect and appoint members of the administration and the teaching staff;

3) petition the Borzna City Duma for assistance toward the progymnasium's upkeep (ZBZ, 1870. №4: 38-43).

The issue of establishing Borzna Women's Progymnasium was hotly debated in an extraordinary session of the Borzna Uyezd Zemstvo Assembly held in 1871. Specifically, on April 24, 1871, the Borzna Uyezd Zemstvo Council submitted a relevant report to the Assembly, in which it regretfully stated that the Borzna City Duma refused to the Council the provision of the Zemstvo with a building for the future gymnasium, as well as any procedures regarding its upkeep. Nonetheless, the Council, which was reluctant to engage in bureaucratic war with the city government, did manage to come up with some initial funding for the needs of the progymnasium, which it had scraped together from what was left of the tax revenue in the zemstvo budget. However, the Trustee of the Kiev Educational District quite unexpectedly did not give the go-ahead for the opening of the progymnasium because of a lack of financial guarantees. Afterwards, the Council forwarded all the documentation to the Board of Trustees of the future progymnasium.

Members of the Board, who wished to be independent from the interference of officials, resolved the issue on their own. Everyone who had the desire and capability became sharers of the school's capital stock, accumulating in a short period of time the sum of 1,700 rubles, which, in essence, was tantamount to the progymnasium's first two budgets. Specifically, A. Petrunkevich and M. Imshenetsky each donated 25 rubles, and 250 rubles came from families that had agreed to place their daughters in the school. In addition, the decision was made to have members of the Uyezd School Council pay a contribution of 5 rubles each month until permanent sources of funding were found.

The Chairman of the Borzna Uyezd Zemstvo Council, M. Imshenetsky, proposed the following additional measures to ensure the operation of the future women's progymnasium:

1) petition the supreme authorities for the allocation of 1,000 rubles per year for the purpose;

2) increase the size of the contribution to be paid by members of the School Council of Borzna Uyezd in Chernigov Governorate from 5 to 10 rubles per month.

The Borzna Uyezd Zemstvo Assembly acknowledged the importance of having Borzna Zemstvo Women's Progymnasium and gave its approval for the Council's undertakings with regard to the establishment of the gymnasium. In addition, the methods of funding the educational institution proposed by the Council were ratified. The Uyezd Zemstvo Council was directed to work out the school's draft constitution and bylaws, which were then to be brought before the government of the Russian Empire for consideration and approval.

It is also worth noting that most of the members of the region's Zemstvo Liberal Party persistently recommended that the Uyezd Zemstvo Council incorporate into the school's constitution and bylaws a set of legally binding clauses entitling all of its teaching, administrative, and caretaking staff to special rights and benefits. Rights of this kind, in accordance with the Zemstvo Institutions Regulation, were to be granted to all payroll employees of institutions subordinate to the local government (including the right to a pension). Separately, the zemstvo liberals advocated for the teaching staff of the future gymnasium to be appointed through election. Girls from low-income families admitted to the progymnasium would have to be educated with money from the budget of the Borzna Uyezd Zemstvo (ZBZ, 1871a. №1: 14-23).

The sitting of an ordinary session of the Borzna Uyezd Zemstvo Assembly held on October 30, 1871, featured again the issue of funding for the women's progymnasium. M. Imshenetsky noted that funding for the progymnasium had to be provided by the local government, as the school was both located within the city of Borzna and attended by its natives. There, nonetheless, was virtually no help coming from the City Duma and the City Council, although most of the city's population attended the facility free of charge. M. Imshenetsky also stressed the fact that the institutions of urban government were not contributing funding toward the upkeep of schools,

although the city of Borzna was where most of the uyezd's secondary educational institutions were located. N. Volk-Karachevsky made a statement on the matter, too. He pointed out that the issue had already been discussed at a session of the Borzna City Duma, with the city's participation in funding the operation of the zemstvo women's progymnasium endorsed by only one deputy. A possible solution was suggested, which involved having to pay into the Borzna Uyezd Zemstvo's budget a portion of the revenue from the city real estate tax, with these funds going toward the needs of the zemstvo women's progymnasium.

The suggestion by H. Volk-Karachevsky was seconded. It was ordained by majority vote of the Uyezd Zemstvo Assembly that the city real estate tax be increased to 250 silver rubles, with the proceeds going into the budget of the Borzna Uyezd Zemstvo (ZBZ, 1871b. №6: 62-64).

The extraordinary session of the Borzna Uyezd Zemstvo Assembly held on January 21, 1872, featured a special report by the Uyezd Zemstvo Council on the funding of the operation of Borzna Zemstvo Women's Progymnasium. It turned out that the Trustee of the Kiev Educational District had communicated to the Borzna Zemstvo that it was premature to establish the zemstvo women's progymnasium and form its executive team, as issues of this kind were within the competence of governors and directors of public schools in regions to solve. The Trustee also noted the absence of the school's budget and staff schedule. The Uyezd Council was advised to contact the Office of the Chernigov Governor, who had the powers to resolve the issue effectively. It was only after the Uyezd Council officially contacted the Chernigov Governor and the Director of Public Schools in the Governorate and presented them with all relevant arguments and reasons that they were able to move the matter off dead center. The gubernia authorities seconded the Borzna Zemstvo's initiative and gave approval for the project.

In addition, the Uyezd Council petitioned the Zemstvo Assembly for the allocation of an additional 200 rubles toward the needs of the Borzna Zemstvo Women's Progymnasium. The Borzna Uyezd Zemstvo approved the petition by majority vote (ZBZ, 1872. №1: 16-18).

The gubernia city of Chernigov became home to a women's gymnasium. A session of the Chernigov Gubernia Zemstvo Assembly held in January 1878 examined the issue of funding for it. Members of the governorate's opposition aristocratic fronde took an active part in the discussion of this matter.

At the sitting of the Gubernia Zemstvo Assembly held on January 15, a liberal zemstvo member named V. Khizhnyakov stated that the annual amount allocated toward the upkeep of the educational institution was 10,000 silver rubles. He noted that subtracting from this amount the sums required for the pay of its staff would leave one with just 600 rubles available to fund the needs of the gymnasium itself, which was very little. V. Khizhnyakov argued that part in the funding and upkeep of the gymnasium must be taken by both the Chernigov Gubernia Zemstvo and the Chernigov City Duma along with the Chernigov Uyezd Zemstvo, for the school was attended by girls from all over the governorate, including from Chernigov. With that said, the Chernigov's city budget was too tight at the time to afford this kind of expense.

The situation was such that the women's gymnasium could count only on Chernigov City Public Bank, which had already provided 4,000 rubles toward a building for the gymnasium. The bank had the capacity in 1878 to allocate additional funding for the purpose. Meanwhile, the Chernigov City Duma was expected to provide a subsidy for the gymnasium. In the event no assistance was granted by the zemstvo institutions, the women's gymnasium even risked to be closed. The school was in desperate need of funding. Furthermore, the liberals expressed a readiness to help other similar facilities in Chernigov Governorate as well (ZCHZ, 1877: 255-256).

Note that members of the conservative aristocracy contended that funding the Chernigov Women's Gymnasium was too costly for the zemstvo budget. A report on this was delivered by another member of the liberal camp named A. Karpinsky. He responded to the reproaches of the conservative aristocracy by stating that the women's eight-grade gymnasium was the only educational institution in Chernigov Governorate to be attended by female students of all social backgrounds without exception. It is with this in mind that the Gubernia Zemstvo Assembly provided 3,000 rubles in financial assistance to the gymnasium. A. Karpinsky placed particular emphasis on the fact that the Chernigov Women's Gymnasium had been established exclusively through the efforts of private sponsors and with their private, personal funds and that its budget was replenished via charitable contributions and annual bounties.

A. Karpinsky also mentioned that the governorate had in operation other women's educational institutions as well, most of which were maintained by the uyezd zemstvo institutions. Among the schools distinguished by successful operation were Sosnitsa, Borzna, Glukhov, Krovelets, and Novgorod-Seversky Women's Progymnasiums. The overwhelming majority of graduates from these schools would enroll at Chernigov Women's Gymnasium to continue their education, as this facility offered a broad curriculum. The combined annual budget of these schools was nearly 4,000 rubles, which was quite a burden on the uyezd zemstvo institutions. Therefore, it was no wonder that the above gymnasiums had turned to the Gubernia Zemstvo for financial assistance.

For instance, in 1877 Novgorod-Seversky Women's Progymnasium requested 6,000 rubles toward the construction of a new building for the school. The Chernigov Gubernia Zemstvo Council provided 2,000 rubles for the purpose after a contractor was enlisted who agreed to a large discount. The decision was made not to provide the annual subsidy, since the experience with Chernigov Gymnasium indicated that the educational institutions tended to use only a portion of the funds allocated to them, with the basis of the budget being formed from tuition, charitable contributions, and revenue from social events. Overall, the educational institutions spent no more than two-thirds of the zemstvo funding they received. But, since Chernigov Women's Gymnasium was a unique school, one answerable to the gubernia city and attended by residents from all over the governorate, its needs were arguably bigger than those of facilities of uyezd subordination.

In this regard, A. Karpinsky proposed working out a system of zemstvo subsidies for women's educational institutions with a focus on transparency and accountability in reporting to the public and the zemstvo authorities in Chernigov Governorate. Note that the Zemstvo Assembly and the Council reserved the right to refrain from taking part in the funding process in the event of abuse being spotted. In addition, it was proposed that a clear-cut list of expenditures on the schools be established for the uyezd zemstvo institutions (ZCHZ, 1877: 257-270).

The zemstvo liberals of Chernigov Governorate raised the issue of women's education in the region again in a session of the Chernigov Gubernia Zemstvo Assembly held in January 1879.

The sitting of the Zemstvo Assembly held on January 15 featured an address by I. Petrunkevich focused on the provision of funding from the zemstvo budget for secondary educational institutions in the region. I. Petrunkevich noted that the idea of funding being provided for the already running Sosnitsa and Krovelets Women's Progymnasiums by the corresponding uyezd zemstvo institutions was correct only formally. Although these educational institutions were operating in Sosnitsaoro and Krovelets Uyezds in Chernigov Governorate, they were providing education to students from other uyezds in the governorate as well. Consequently, these educational institutions were of great importance for the region as a whole.

Attention was drawn to the fact that, although substantial funding was provided from the Sosnitsa and Krovelets uyezd budgets toward the development of women's education, there was still a lack of financial resources to cover the hire or construction of decent buildings for the progymnasiums. A member of the liberal wing, I. Petrunkevich called on the Gubernia Zemstvo to help these facilities for the common good. The Chernigov Gubernia Zemstvo Assembly fully agreed with I. Petrunkevich. As a result, the decision was made to provide from the budget of the Gubernia Zemstvo the sum of 950 rubles in infrastructural assistance to Sosnitsa and Krovelets Women's Progymnasiums (ZCHZ, 1878. №3: 124-125).

At the same sitting (the one held on January 15), they examined the needy situation of female students of the Kiev Higher Women's Courses – natives of Chernigov Governorate. A. Karpinsky, a member of the Zemstvo Liberal Party, suggested providing 1,000 rubles from the budget of the Gubernia Zemstvo toward an allowance for these students. I. Petrunkevich proposed entrusting this money to the school's Board of Trustees so as to prevent corruption in distributing the funds among the students. Members of the school's Board of Trustees had all relevant information about the descent and material status of its students and could use a targeted approach to financial aid, i.e. provide it to those who really needed it.

Natives of Chernigov Governorate were the second largest group among the students of the Kiev Higher Women's Courses. The economic capacity of the zemstvo institutions was quite limited. Therefore, it was logical to leave the choice of scholarship recipients up to the school's teaching staff and Board of Trustees, rather than members of the Gubernia Zemstvo. Furthermore, disbursements were to be made by the economic units of the women's courses.

A member of the Zemstvo Liberal Party named I. Shrag put forth a proposal to entrust the allowance funds for students of the Kiev Higher Women's Courses to the school's Board of Trustees and let it decide on the candidates to receive this kind of aid. The Chernigov Gubernia Zemstvo Assembly approved I. Shrag's proposal by a majority vote of 27 to 18 (ZCHZ, 1878. №3: 127-133).

However, as early as January 16, 1879, members of the governorate's conservative aristocracy called the provision of zemstvo aid to students of the Kiev Higher Women's Courses into question. They even contended that the possibility of a student receiving a scholarship funded by the Gubernia Zemstvo through guile and deception prompted the need to establish an institution of zemstvo scholarships so that the Gubernia Council and deputies could make the right decisions in this respect.

A person who stood in defense of the January 15 decision was I. Petrunkevich again. He provided valid reasons as to its viability. They had to conduct a revote on the issue. As a result, it was ordained by a majority vote of 26 to 22 that the decision of the Chernigov Gubernia Zemstvo Assembly as to the provision of financial assistance to students of the Kiev Higher Women's Courses who were from Chernigov Governorate remain in force and without change (ZCHZ, 1878. №3: 153-158).

5. Conclusion

The 1870s were a period of Chernigovshchina's liberal zemstvo members putting a devoted effort into building and funding the network of women's educational institutions in the region.

A seminal achievement of the Liberal Party was the establishment of and provision of support for Borzna Zemstvo Women's Progymnasium. Despite the lack of real assistance from the urban government, the local gubernia administration, and the central executive government, systematic and persistent lobbying by the region's zemstvo liberals for the cause of women's education did bear some fruit. They managed to secure steady funding for the progymnasium from the budget of the Borzna Uyezd Zemstvo, ensure the admission to it of members of all social estates, consolidate the community of sponsors supporting the educational institution, and initiate the preparation of statutory documentation for it. Liberal zemstvo members and their immediate circle not only sponsored the educational institution and were members of its Board of Trustees but managed to enter the ranks of the progymnasium's administration and join its teaching staff.

Of particular note is the introduction, at the behest of members of the opposition aristocratic fronde, of a special progressive tax on urban properties to ensure the operation of Borzna Zemstvo Women's Progymnasium. Another telling fact is that Chernigovshchina's zemstvo liberals insisted on using an election-based system to form the progymnasium's teaching team, as well as granting the status of zemstvo public officers with corresponding rights to its entire teaching staff.

Members of the Zemstvo Liberal Party also did a lot for Chernigov Women's Gymnasium, the governorate's only educational institution at that level. Chernigov City Public Bank funded the needs of the gymnasium on a regular basis, while the Chernigov Gubernia Zemstvo Assembly paid student allowances out of its own budget. The liberals also suggested developing a system of zemstvo subsidies for all women's educational institutions in the region.

Note also that the zemstvo liberals in Chernigov Governorate helped not only women's educational institutions in that region but also had more than once initiated the provision of financial assistance from the budgets of gubernia and uyezd zemstvos toward the needs of women's educational institutions outside of the region attended by females born in Chernigovshchina. Importantly and indicatively, members of the opposition aristocratic fronde had adopted a responsible approach to dealing with corruption in implementing the budgetary policy of the zemstvo institutions in Chernigovshchina in an effort to combat social injustice toward female students.

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The System of Public Education in Astrakhan Governorate in the second half of the 19th and early 20th centuries. Part 1

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Abstract
This set of articles relies on reference and memorandum books from the period 1873–1917 to explore the development of the system of public education in Astrakhan Governorate. This is the first piece in the set. It examines the region's geographic, economic, and social characteristics and provides an insight into the state of affairs in its education sector as at 1873, i.e. the study's lower chronological limit.

The principal sources used in this study are the Memorandum Books for Astrakhan Governorate, relevant statistical descriptions, and relevant laws and regulations. Use was also made of relevant archival documents from the National Archive of the Republic of Tatarstan (Kazan, Russian Federation). These sources contain official correspondence on the organization of the educational process in the region.

Methodologically, use was made of sets of historical (historical-systematic, historical-comparative, historical-typological, historical-genetic, and historical-statistical) and general (synthetic analysis, content analysis, and systems analysis) research methods.

The system of public education in Astrakhan Governorate was not as advanced as that in many other regions of Russia. There were difficulties, especially in the early 19th century, associated with the Russification of the region. As at 1873, the governorate had 38 educational institutions with a combined enrollment of 2,395 (1,702 boys and 693 girls).

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The period 1837–1873 was a time marked by brisk development in the region's female education sector, when its boy to girl student ratio changed from 8.8:1 to 2.45:1.

Keywords: public education, system of public education, public schools, Astrakhan Governorate, education in Astrakhan Governorate

1. Introduction
This set of articles on the development of the system of public education in Astrakhan Governorate comprises four parts:

1) Part 1, which represents a general characterization of the region's geography, economy, social situation, and education sector as at 1873.

2) Part 2, which represents an analysis of the system of public education in Astrakhan Governorate in the post-reform period (1855–1881, i.e. the reign of Alexander II) and the counter-reform period (1881–1894, i.e. the reign of Alexander III).

This part focuses on the period from 1874 to 1894.

3) Part 3, which represents an analysis of the system of public education in Astrakhan Governorate in the period from 1894 to 1907.

This period saw the reign of Nicholas II and witnessed a number of momentous events in the Russian Empire's domestic and foreign policies, including the explosive demographic growth, the failed Russo-Japanese War, and the Revolution of 1905, and, as a consequence, a number of critical structural transformations, including the shift from an absolute monarchy to a constitutional one, the emergence of a parliamentary system of government, and the dismantling of the traditional peasant commune, which had been in place for many centuries.

4) Part 4, which represents an analysis of the system of public education in Astrakhan Governorate in the period 1908–1918.

This chronological period saw the application of the Decree on Allocating 6,900,000 Rubles toward Primary Education of May 3, 1908, intended to make education more accessible to all citizens. The period witnessed World War I and the Revolutions of 1917 – the events that changed the nation forever.

The present article kicks the series off with a general geographic, economic, and social characterization of the region and an account of the system of public education in it as at 1873, i.e. the study's lower chronological limit.

2. Materials and methods
The principal sources used in this study are memorandum and reference books containing data on the region's educational institutions and student body. In particular, use was made of statistical data from the 1873 Memorandum Book for Astrakhan Governorate (Pamyatnaya knizhka, 1873).

Use was also made of relevant archival documents from the National Archive of the Republic of Tatarstan (Kazan, Russian Federation). These sources contain official correspondence on the organization of the educational process in the region.

A wide range of statistics was obtained from 'Statistical Data on Astrakhan Governorate (from a Report from the Chamber of His Majesty the Emperor)', published in 1845 in the *Astrakhanskiye Gubernskiye Vedomosti* newspaper (Statisticheskie svedeniya, 1845). This information helped gain a valuable insight into the development of the region's education system.

Valuable information is also available from 'Public Education', an article covering primary, parish, and parochial schools in Astrakhan Governorate published in 1838 in the June 4 supplement to the *Astrakhanskiye Gubernskiye Vedomosti* newspaper (Narodnoe obrazovanie, 1838).

Certain characteristics of ethnic minority education in the region were discussed in Issue 33 of the *Astrakhanskiye Gubernskiye Vedomosti* newspaper for 1850 (Astrakhanskie tatary, 1850).

Valuable statistical data on the region's ethnic and confessional makeup and the population size of its cities and uyezds are available from the First General Census of the Russian Empire of 1897 (Perepis'…, 1904)

Some information on education in the region in the waning days of the Russian Empire is available from 'The Most Faithful Report of the Chief Procurator of the Holy Synod for 1914', published in Petrograd in 1916 (Vsepoddanneishii otchet, 1916).

It has become a tradition for researchers in this area of study to draw upon laws and regulations reflecting the reaction of the government to changes in the socio-economic situation in the country, i.e. something that must, above all, have had an effect on the education sector. Of particular value in this respect is 'The Complete Collection of Laws of the Russian Empire', which comprises 33 volumes. The second collection covers the period from 1825 to 1881, and the third one covers the period from 1881 to 1913 (PSZRI, 1914).

In terms of methodology, use was made of both historical research methods (traditional and nontraditional) and general research methods.

The following traditional historical research methods were used:

– historical-systematic method (employed to explore the system of education in Astrakhan Governorate through the lens of the region's political, social, demographic, and economic situation);

– historical-comparative method (in terms of (a) the chronological aspect, employed to compare the states of the system of education in Astrakhan Governorate in different stages during the period under review; in terms of (b) the historical-geographic aspect, employed to compare the development of the system of education in Astrakhan Governorate with that in other regions of the Russian Empire);

– historical-typological method (employed to classify the region's educational institutions by level);

– historical-genetic method (employed to investigate the effect of the various preceding events and government policies on the development of the region's education sector).

The only nontraditional historical research method used in this work was the historical-statistical method (employed to conduct a quantitative analysis of the region's educational institutions and student body).

The general research methods employed in this study were synthetic analysis, content analysis, analysis of the literature and sources, and systems analysis.

The use of the above methods in an integrated manner helped conduct the research as objectively and comprehensively as possible.

3. Discussion

There is a relative paucity of dedicated research on the system of education in Astrakhan Governorate. Below is an outline of the prerevolutionary, Soviet, and contemporary historiography covering the development of the education system in the region.

The system of education in Astrakhan Governorate was researched fairly in depth by prerevolutionary historians.

A highly valuable work representing an in-depth analysis of the system of education in the region as an administrative unit is N. Kazansky's 'Public Education in Astrakhan Governorate', a series of articles published in 1898 in the journal *Russkaya Mysl* (Kazanskii, 1898a; Kazanskii, 1898b; Kazanskii, 1898c; Kazanskii, 1898d). The work explores the development of the governorate's education system right from the moment it was established, with insight provided into aspects such as types of educational institutions, ethnic education, and members of officialdom and teaching staff in the region with a substantial contribution to the development of its education system.

Muslim education in the governorate was examined by N. Mikhaylov in the article 'On the Education of Sunni Muslims in Astrakhan', published in 1844 in the February 12 supplement to the *Astrakhanskiye Gubernskiye Vedomosti* newspaper (Mikhailov, 1844).

Ethnic education in the region was examined in the article 'On the Introduction of Instruction in Tatar and Kalmyk at the Astrakhan Ecclesiastical Seminary', published in the *Astrakhanskie Eparkhial'nye Vedomosti* newspaper on March 1, 1891 (O vvedenii…, 1891).

Preschool education in the region was examined in 'On Preschool Education in the Astrakhan Region', published in the journal *Izvestiya Astrakhanskogo Gubernskogo Komissariata po Narodnomu Obrazovaniyu* on May 16, 1918. This article by V. Kalegulov analyzes the state of preschool education in the region both during the author's contemporary period and earlier (Kalegulov, 1918).

The operation of Astrakhan's First Male Gymnasium in the period from 1806 to 1914 was examined by T. Ostroumov in his copious monograph (over 800 pages) (Ostroumov, 1914).

Lastly, definitely worthy of mention are the prerevolutionary works analyzing the region in general and devoting some attention to its education system, namely 'Essays on the Lower Volga Region' by P.I. Nebolsin, published in Saint Petersburg in 1852 (Nebol'sin, 1852), and the 126-page book 'The Astrakhan Chronicle: Historical Figures, Events, Ordinances of Public Authorities, and Facts about Social Life in the City of Astrakhan for the Period from 1554 to 1896 inclusive' by A.N. Shtylko, published in Astrakhan in 1897 (Shtyl'ko, 1897).

Some general information relating to the region's socio-economic characteristics and the state of its education system is available from 'The Brockhaus and Efron Encyclopaedic Dictionary' (Brokgauz–Efron, 1890).

The only dedicated study on the history of education in Astrakhan Governorate released during the Soviet period is the dissertation 'Public Education in the Astrakhan Region in the Period between the 19th and Early 20th Centuries' by A.B. Olneva (Ol'neva, 1988). The region's education sector is mentioned in the period's several integrated works on domestic education only in passing alongside that of other areas in the Russian Empire. These include I.M. Bogdanov's 'Literacy and Education in Prerevolutionary Russia' (Bogdanov, 1964) and V.Z. Smirnov's 'Essays on the History of 19th-Century Progressive Russian Pedagogy' (Smirnov, 1963).

Of particular note are 'Essays on the History of Education and Pedagogical Thought across the Nations of the USSR (Spanning the Second Half of the 19th Century)' (Ocherki, 1976) and 'Essays on the History of Education and Pedagogical Thought across the Nations of the USSR (Spanning the Period from the Late 19th to Early 20th Centuries)' (Ocherki, 1991).

The relevant articles published in Soviet-era periodicals include A.G. Rashin's 'Literacy and Public Education in Russia between the 19th and Early 20th centuries', published in the collection *Historical Notes* (Rashin, 1951), and V.Z. Smirnov's 'The Ways to Maintain Student Discipline in Gymnasiums and Progymnasiums', published in the journal *Sovetskaya Pedagogika* (Smirnov, 1956).

Among the contemporary works covering the history of education in Astrakhan Governorate, of particular note is the monograph 'The Kazan Educational District between the Late 19th and Early 20th Centuries' by I.E. Krapotkina (Krapotkina, 2011) and the textbook 'The Development of the Education Sector in Astrakhan Governorate in the Period between the 18th and early 20th centuries: A Series of Lectures' by A.M. Treshchev, G.V. Alferova, and E.A. Tarabanovskaya (Treshchev i dr., 2001).

There is a fair amount of research exploring the ethno-confessional aspects of education in the region. For instance, the monograph 'Islam in the Astrakhan Region' by V.M. Viktorin, published in Moscow in 2008, devotes a significant amount of attention to the key education-related issues that were faced by the governorate's Muslim residents (Viktorin, 2008). Some information about the ethnic education of Astrakhan Muslims is available from the fundamental work 'Government Regulation of Islam in the Russian Empire between the Last Third of the 18th and Early 20th Centuries' by D.Yu. Arapov (Arapov, 2004).

There appears to be a fairly large amount of research on ethnic and confessional education in Astrakhan Governorate. I.K. Zagidullin explored the Tatar school sector in the light of the Russification-focused policy pursued by the tsarist government in the second half of the 19th century (Zagidullin, 1992). The duo R.G. Rezakov and F.M. Rekesheva analyzed the ethno-confessional aspects of preschool and primary education in Astrakhan (Rezakov, Rekesheva, 2014). E.A. Tarabanovskaya explored the role of non-governmental initiatives in the development of the system of national education in Russia in the early 20th century through the example of Kazakhs receiving education at an Astrakhan school for medical technicians and midwives (Tarabanovskaya, 2016). The series of articles by R.M. Islemisova is devoted to the historiography of the management of the education of Tatars in Astrakhan Governorate in the 19th century (Islemisova, 2013), the government's policy in the area of managing the education of Tatars (through the example of Astrakhan Governorate) (Islemisova, 2014), and the government's activity in the area of managing the education of Astrakhan Tatars in the first half of the 19th century (Islemisova, 2015).

A comparative analysis was also conducted of the development of the system of public education in Astrakhan Governorate vis-à-vis a few other regions of the Russian Empire, including Vologda Governorate (Cherkasov et al., 2019a; Cherkasov et al., 2019b), Voronezh Governorate (Cherkasov et al., 2020), Kars Oblast (Magsumov et al., 2020), Tiflis Governorate (Mamadaliev et

al., 2020), Penza Governorate (Mamadaliev et al., 2022), the territory of the Kuban Cossack Host (Molchanova et al., 2020), and Stavropol Governorate (Natolochnaya et al., 2020).

Some general information about the region's education system is available from A.A. Cherkasov's 'Primary Education in Russia (1894–1917): The Stages in Its Development' (Cherkasov, 2011), which contains data on Russia's literacy levels in the period 1894–1917.

4. Results

Astrakhan Governorate emerged as a standalone administrative unit in 1717 via a decree issued by Peter I on November 22, prior to which the region was part of Kazan Governorate. Its capital was the port city of Astrakhan, Russia's southern outpost. The territory of the governorate changed on a continual basis. At different times in history, it incorporated portions of modern Kazakhstan and parts of the Caucasus and had its territories incorporated into Kazan Governorate (Saratov, Samara, Simbirsk, Syzran), Orenburg Governorate (the territory of the Yaik Cossack Host), and Saratov Governorate (Tsaritsyn). Up to the mid-19th century, the governorate did not have a clearly defined territory. It began to have clearly defined borders only by 1862. However, following the Revolution the Bukey Horde became a separate administrative unit. Astrakhan Governorate was abolished in 1928. By the end of the 19th century, Astrakhan Governorate was comprised of the following areas (Perepis', 1897):

– Astrakhan Uyezd (population – 219,760; capital – Astrakhan (population – 112,880));
– Yenotayevsky Uyezd (population – 76,080; capital – Yenotayev (population – 2,826));
– Krasnoyarsky[1] Uyezd (population – 65,995; capital – Krasny Yar (population – 5,593));
– Tsarevsky Uyezd (population – 198,022; capital – Tsarev (population – 6,977));
– Chernoyarsky Uyezd (population – 100,316; capital – Cherny Yar (population – 4,226));
– the Kalmyk Steppe (population – 128,573);
– the Bukey Horde (population – 214,796; capital – Khanskaya Stavka (population – 2,564)).

The region's capital, Astrakhan, became part of Russia under Ivan the Terrible in 1556. The city was of great importance at the time, being a port and trading outpost. It continues to be so to this day.

As a maritime region, Astrakhan Governorate was big on fisheries, which represented "a substantial source of income for local and non-local residents and was the hub around which other resource use sectors revolved" (Brokgauz–Efron, 1890: 361). A major sector in the region's economy was salt extraction. The region's second most significant sector was livestock farming (mainly horse and cattle breeding). The region was not big on arable farming, with most of this activity concentrated in Tsarevsky Uyezd, which itself could afford to supply wheat to other regions only in high-yield years. Gardening in the region was limited to grapes (Astrakhan's outskirts) and apples (Krasny Yar's outskirts).

In terms of ethnic composition, the governorate's population was dominated by ethnic Russians, with members of this group present in large numbers in Astrakhan, Astrakhan Uyezd, and Yenotayevsky Uyezd. The region's other large ethnic groups were Kazakhs (43.6 % in Krasnoyarsk Uyezd) and Ukrainians (38.2 % in Tsarevsky Uyezd and 40.7 % in Chernoyarsky Uyezd). The bulk of the population in the Kalmyk Steppe and the Bukey Horde was made up of Kalmyks (95.3 %) and Kazakhs (96.5 %), respectively. Overall, the governorate had the following ethnic makeup as at 1897: ethnic Russians – 40.8 %, Kazakhs – 25.5 %, Kalmyks – 13.8 %, Ukrainians – 13.3 %, and Astrakhan Tatars – 5.3 %. (Perepis'…, 1897: 91).

An acute issue facing the region's education sector was slow progress in Russifying it, with most of its ethnic minorities pushing for instruction to be conducted in their own native tongue, which contravened the government's policy of seeking to unite the nation. For example, when in 1821 the head of the Astrakhan Tatar community, M. Niyazov, brought up the matter of opening up a school where Tatar residents could be taught Russian, the proposal had no backing from either members of the Tatar community (which is quite logical) or the Governor (which is somewhat strange, as his input could have contributed to the furtherance of the cause substantially) (NART. F. 92. Op. 1. D. 1278. L. 8). Things changed during the reign of the authoritarian Nicholas I (vis-à-vis the "liberal" Alexander II). The "orthodoxy, autocracy, and nationality" formula by S.S. Uvarov

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[1] The city of Krasny Yar in Astrakhan Governorate is not to be confused with Krasnoyarsk, a modern Russian city located in eastern Siberia.

(Russia's Minister of Public Education at the time), embraced at the government level, provided the momentum to Russify the region. In 1838, professor Mirza Kazembek composed a template invitation for Muslim children not only in the native languages (Tatar and Persian) but in Russian as well, with the aim of urging them to pursue "national" education. The Ministry of Public Education backed the project and gave it the green light (NART. F. 92. Op. 1. D. 4816. L. 2-3).

Astrakhan Governorate's education sector was answerable to the Kazan Educational District.

Based on data from 'The Brockhaus and Efron Encyclopaedic Dictionary', as at 1890 the public education sector in the governorate (exclusive of the city of Astrakhan) was comprised of parish, primary public, parochial, and literacy schools. Across the region's uyezds, there were a total of 11 schools with a combined enrollment of 682 students (505 boys and 177 girls). Across its villages and stanitsas, there were a total of 193 schools with a combined enrollment of 1,809 students (6,203 boys and 1,887 girls). In the Kalmyk Steppe, there were five general schools with a combined enrollment of 118 boys and 36 Tatar schools with a combined enrollment of 1,144 students (1,099 boys and 45 girls). In the Bukey Horde, there were two specialized and six general schools (Brokgauz–Efron, 1890: 361).

The data in Table 1 are based on information from the 1873 Memorandum Book for Astrakhan Governorate and the article 'Public Education in Astrakhan Governorate'.

Table 1. Numbers of Educational Institutions and Students in Them in Astrakhan Governorate in the Period 1837–1873 (Kazanskii, 1898c: 4; Pamyatnaya knizhka, 1873)

Year	Number of educational institutions	Number of students		
		Boys	Girls	Total
1837	20	1,074	122	1,196
1850	23	N/A	N/A	1,412
1861	29	N/A	N/A	Approx. 1,500[1]
1873	38	1,702	693	2,395

As we can see, the period from 1837 to 1873 witnessed a nearly twofold rise in the number of educational institutions in the region and a precisely twofold increase in the size of its student body. In the middle of the first half of the 19th century, boy students outnumbered girls in the region by a wide margin, with the boy to girl student ratio of 8.8:1 reflecting adherence to traditional (patriarchal) values in society at the time. However, things began to change by the middle of the second half of the 19th century, a trend observed in other regions across the country as well (Cherkasov et al., 2020; Molchanova et al., 2020). By 1873, the ratio was 2.45:1. This increase of nearly three times in the number of girl students in the region over a 36-year period is well reflective of liberal tendencies inherent in the reforms undertaken by Alexander II, including in the area of education.

However, the system of education in Astrakhan Governorate can hardly be characterized as advanced if we look at it from the standpoint of the numbers of educational institutions and students in the region against its total population. Certain regions of the Caucasus and Ukraine had a much better developed education system than Astrakhan Governorate (Mamadaliev et al., 2020; Cherkasov et al., 2022). However, there also were regions that trailed Astrakhan Governorate (e.g., Penza Governorate (Mamadaliev et al., 2022)) and those that were nearly on par with it (e.g., Vologda Governorate (Cherkasov et al., 2019a)) in this respect.

5. Conclusion
The following conclusions were drawn from the insights gained from this study:

1) There is currently a relative paucity of research covering the development of the system of education in Astrakhan Governorate. The only component that has been researched more or less in depth is the ethno-confessional aspect.

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[1] The data were obtained from the article 'Public Education in Astrakhan Governorate' (Kazanskii, 1898c: 4).

2) As a multi-ethnic region, Astrakhan Governorate was difficult to Russify, which was especially the case in the first quarter of the 19ᵗʰ century. Ultimately, this problem was resolved.

3) The system of public education in Astrakhan Governorate was not as advanced as that in many other regions of Russia. As at 1873, the region had 38 educational institutions with a combined enrollment of 2,395 (1,702 boys and 693 girls).

4) The liberal reforms undertaken by Alexander II, which brought about the collapse of the old patriarchal worldview, had a profound effect on the region's education sector, with its boy to girl student ratio changing from 8.8:1 in 1837 to 2.45:1 in 1873. And that is considering that a large portion of the region's population was Muslim.

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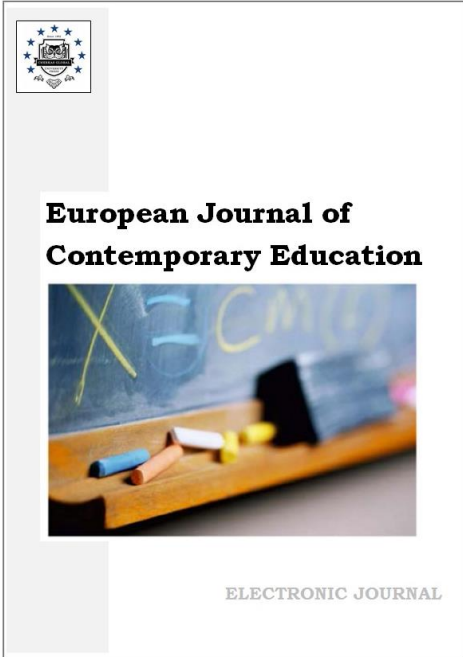
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ELECTRONIC JOURNAL

The System of Public Education in Dagestan Oblast (1860–1917). Part 2

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Abstract

This work explores the system of public education in Dagestan Oblast in the period 1860–1917. The present part of the work examines the period 1884–1900, i.e. from the year the annual reports of the Trustee of the Caucasus Educational District began to be published to the end of the 19th century.

The principal source used in this study is the reports of the Trustee of the Caucasus Educational District released between 1884 and 1900. These collections of statistical information offer a valuable insight into the system of education in Dagestan Oblast in the period through to 1900. Use was also made of certain relevant reference materials.

By 1900, Dagestan Oblast's education sector had a combined enrollment of 1,895 students (an increase of 2.5 times on 1884).

The region's secondary education sector continued to be dominated by ethnic Russian students. By 1900, the region witnessed increased interest in lower education on the part of members of the region's other ethnic groups, and the way in enrollment in primary education began to be led by members of the mountaineer community. This indicates that there was a major shift in the attitude of the local population toward public education.

The number of educational institutions in the region did not increase significantly. The number of secondary educational institutions there remained the same. The number of lower schools increased two times, and the number of primary schools increased 2.5 times. Education became more accessible, with lower education becoming available in the city of Petrovsk and

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primary schools opening up within the agrarian sector. All this facilitated the development of public literacy in multi-ethnic Dagestani society.

Keywords: Dagestan Oblast, Caucasus Educational District, period 1860–1917, history of pedagogy, ethnic composition of the student body

1. Introduction

Dagestan Oblast was established back during the Caucasus War – in 1860. It was situated in the northeastern part of the Caucasus isthmus, north of the Main Caucasian Range. Its capital was Temir-Khan-Shura. Dagestan Oblast was a multi-ethnic region, with the bulk of its population made up of mountaineers and with ethnic Russians accounting for just 5%. This naturally created difficulties in organizing the system of public education in the region, which long remained the most underdeveloped area in the Caucasus. The second part of this work will examine the development of public education in Dagestan Oblast in the period 1884–1900.

2. Materials and methods

The principal source used in this study is the reports of the Trustee of the Caucasus Educational District released between 1884 and 1900. These collections of statistical information offer a valuable insight into the system of education in Dagestan Oblast in the period through to 1900. Use was also made of certain relevant reference materials.

The research reported in this work was conducted with observation of the following major historical research principles: historicism, systematicity, and objectivity. The principle of historicism helped explore the system of public education in Dagestan Oblast in its historical sequence and development. The principle of systematicity helped examine the system of education in the region across the secondary, lower, and primary levels. The principle of objectivity was employed to ensure an unbiased approach in respect of the statistical sources employed and conclusions drawn in the work. Wide use was made of the statistical method to summarize the extensive statistical material on the system of public education in Dagestan Oblast in the period through to 1900. Data were obtained on the size and ethnic composition of the student body, the numbers of educational institutions, and the size of the library stock in the region.

3. Discussion

The historiography dealing with the period 1884–1900 can be divided into works devoted to regions within the Caucasus Educational District and those devoted to other regions of the Russian Empire in the period under review.

The first group, focused on various aspects of the development of the system of public education in the Caucasus in the prerevolutionary period, includes the following body of research: N.A. Shevchenko's 'The Making of the System of Public Education in the Caucasus (1802–1917): Distinctive Features' (Shevchenko et al., 2016), O.V. Natolochnaya's 'Revisiting the System of Public Education in the Caucasus Educational District in 1848–1917. Part 1' (Natolochnaya et al., 2021), T.A. Magsumov's study on the system of public education in Kars Oblast (Magsumov et al., 2020), A.M. Mamadaliev's studies on the system of public education in Tiflis Governorate (Mamadaliev et al., 2020) and on the pedagogical periodical press in the Caucasus (Mamadaliev et al., 2022), and K.V. Taran's study on private education in the Caucasus (Taran et al., 2021).

The second group, focused on various aspects of the development of the prerevolutionary system of public education in other regions of the Russian Empire in the period up to 1900, most notably includes the following body of research: S.I. Degtyarev's study on the system of public education in the Kharkov Educational District (Degtyarev, Polyakova, 2020), A.Y. Peretyatko's study on the system of public education in the Don region (Peretyatko, Zulfugarzade, 2017), and A.A. Cherkasov's study on the system of public education in Vologda Governorate (Cherkasov et al., 2019).

4. Results

For the most part, the system of public education in the Russian Empire was comprised of the following four major levels: higher, secondary, lower, and primary. Note that there were no higher educational institutions in the Caucasus Educational District during the prerevolutionary period. Accordingly, the present work will only focus on the remaining three levels – secondary, lower, and primary.

Secondary education

As at 1884, Dagestan Oblast had two secondary educational institutions – a female progymnasium and a six-grade real school (for boys), with both located in its capital – Temir-Khan-Shura.

On September 1, 1890, the female progymnasium was reorganized from a five-grade educational institution into a six-grade one (Otchet, 1895: № 106), On September 1 1897, the female progymnasium was reorganized into a seven-grade female gymnasium (Otchet, 1899: 166).

Table 1 displays the numbers of secondary educational institutions and students in them in Dagestan Oblast in the period 1884–1900.

Table 1. Numbers of Secondary Educational Institutions under the Purview of the Ministry of Public Education and Students in Them in Dagestan Oblast in the Period 1884–1900 (Otchet, 1885: applications; Otchet, 1886: applications; Otchet, 1887: 4, applications, 168; Otchet, 1890: № 80, 130; Otchet, 1891: № 77, 130; Otchet, 1892: № 51, 80; 106, 130; Otchet, 1893: № 51, 80, 106, 127; Otchet, 1894: № 51, 80, 106, 127; Otchet, 1895: № 51, 80, 106, 130; Otchet, 1896: 51, 80, 106, 130; Otchet, 1897: 109, 138, 166, 214; Otchet, 1899: 109, 138, 166, 208; Otchet, 1900: 109, 138, 166, 214; Otchet, 1901: 109, 138, 166, 214)

| Year | Gymnasiums | | Progymnasiums | | Real schools | Total | Number of students | | |
	Male	Female	Male	Female			Boys	Girls	Total
1884	-	-	-	1	1	2	286	99	385
1885	-	-	-	1	1	2	310	79	389
1886	-	-	-	1	1	2	286	76	362
1889	-	-	-	1	1	2	246	98	344
1890	-	-	-	1	1	2	264	106	370
1891	-	-	-	1	1	2	282	106	388
1892	-	-	-	1	1	2	276	106	382
1893	-	-	-	1	1	2	288	96	384
1894	-	-	-	1	1	2	286	119	405
1895	-	-	-	1	1	2	282	124	406
1896	-	-	-	1	1	2	311	156	467
1898	-	1	-	-	1	2	312	168	480
1899	-	1	-	-	1	2	313	177	490
1900	-	1	-	-	1	2	359	197	556

As evidenced in Table 1, the size of the student body within the region's secondary education sector increased, despite the fact that the number of secondary educational institutions did not. Specifically, the size of the student body at the six-grade real school surpassed 300 as early as 1896 and by 1900 reached its maximum – 359. As regards female secondary education, the region's capital witnessed a continuous increase in interest in secondary education among its population. This led to the reorganization of the female educational institution from a five-grade school into a seven-grade one and resulted in a twofold increase in the size of the student body.

Let us now examine the ethnic composition of the student body within the region's secondary education sector. As a reminder, in 1884 the real school had the following ethnic makeup: ethnic Russians – 174, Georgians – 17, Armenians – 20, Tatars – four, mountaineers – 48, Jews – 14, and Europeans – nine (Rajović et al., 2022: 660). In 1900, its ethnic makeup was as follows: ethnic Russians – 212, Georgians – six, Armenians – 34, Tatars – nine, mountaineers – 64, Jews – 24,

and members of other ethnic groups – 10 (Otchet, 1901: 138). These data indicate that the ethnic composition of the student body within the region's secondary education sector did not change much relative to 1884.

Little change was also observed for the social makeup of the real school, where over half of the student body was made up of children of nobles and functionaries (Otchet, 1901: 138).

As regards the female educational institution, in 1884 the progymnasium had the following ethnic makeup: ethnic Russians – 78, Georgians – five, Armenians – three, Tatars – two, Jews – five, Europeans – five, and mountaineers – zero. In 1900, the female gymnasium had the following ethnic makeup: ethnic Russians – 147, Georgians – eight, Armenians – 13, Tatars – three, Jews – 20, Europeans – six, and mountaineers – zero (Otchet, 1901: 214).

Little change was also observed for the social makeup of the school, which continued to be dominated by children of nobles and functionaries (Otchet, 1901: 215).

Thus, to summarize, the region did not witness much change in the ethnic and social composition of the student body at its secondary educational institutions relative to 1884.

Let us now examine the library stock within the region's secondary education sector at the time. In 1884, the real school in Temir-Khan-Shura had a library stock of 4,006 items in the fundamental library section and 1,176 items in the discipular one (Otchet, 1885: tables). By 1900, the library stock reached 9,106 items in the fundamental library section and 2,188 items in the discipular one (Otchet, 1901: 111). This is a twofold increase over a 16-year period.

In 1884, the female progymnasium in Temir-Khan-Shura had a library stock of 115 items in the fundamental library section and 251 items in the discipular one (Otchet, 1885: tables). By 1900, the figure increased to 250 and 373 items, respectively (Otchet, 1901: 170). There was no sharp increase because students and teachers were allowed to use the library stock of the real school.

Lower education

Prior to 1884, the only lower educational institution in Dagestan Oblast was the urban school in Derbent (established in 1837) (Rajović et al., 2022: 659).

In 1897, Dagestan Oblast became home to another lower educational institution – the urban school in Petrovsk (Otchet, 1899: 295). The demand for lower education in Petrovsk was such that as early as 1898 this urban school had a larger student enrollment than the school in Derbent (Otchet, 1899: 329).

Table 2 displays the numbers of lower educational institutions and students in them in Dagestan Oblast in the period 1884–1900.

Table 2. Numbers of Lower Educational Institutions and Students in Them in Dagestan Oblast in the Period 1884–1900 (Otchet, 1885: applications; Otchet, 1886: applications; Otchet, 1887: 218; Otchet, 1890: № 185, 203; Otchet, 1891: № 184, 202; Otchet, 1892: № 184, 202; Otchet, 1893: № 184, 202; Otchet, 1894: № 184, 202; Otchet, 1895: № 184, 202; Otchet, 1896: 184, 200; Otchet, 1897: 295, 327; Otchet, 1899: 295, 329; Otchet, 1900: 296, 362; Otchet, 1901: 296, 362)

Year	Urban schools	Tradesman's specialized schools	Mountain schools	Tradesman's schools	Total	Number of students		
						Boys	Girls	Total
1884	1	-	-	-	1	92	-	92
1885	1	-	-	-	1	114	-	114
1886	1	-	-	-	1	100	-	100
1889	1	-	-	-	1	127	-	127
1890	1	-	-	-	1	121	-	121
1891	1	-	-	-	1	129	-	129
1892	1	-	-	-	1	132	-	132
1893	1	-	-	-	1	135	-	135

1894	1	-	-	-	1	129	-	129
1895	1	-	-	-	1	146	-	146
1896	1	-	-	-	1	152	-	152
1898	2	-	-	-	2	297	-	297
1899	2	-	-	-	2	355	-	355
1900	2	-	-	-	2	413	-	413

As evidenced in Table 2, during the period under review the region witnessed an increase in interest in lower education. Specifically, the student body at the urban school in Derbent increased between 1884 and 1900 from 92 to 161. The rise in the size of the student body at the urban school in Petrovsk was another testimony to the increasing interest in lower education in the region (152 students in 1898, 218 in 1899, and 252 in 1900). Overall, the number of lower educational institutions in the region increased two times, and the size of the student body within this sector rose more than four times. Due to the region's distinctive characteristics, both of its urban schools were attended by boys only.

In terms of ethnic composition, in 1884 the urban school in Derbent had the following ethnic makeup: ethnic Russians – 49 (nearly half of the total student body), Armenians – 31, and Tatars – 12, and members of other ethnic groups – zero (Rajović et al., 2022: 660). The situation was slightly different in 1900 (the relative shares of Armenian and Tatar students increasing and members of other ethnic groups starting to enroll in the urban school in Derbent): ethnic Russians – 56, Armenians – 42, Tatars – 44, Georgians – one, mountaineers – four, Jews – 10, and Europeans – four (Otchet, 1901: 362). The school in Petrovsk had the following ethnic makeup: ethnic Russians – 182, Georgians – five, Armenians – 15, Tatars – 11, Jews – 32, Europeans – seven, mountaineers – zero (Otchet, 1901: 362).

Little change was observed for the sector's social composition, with members of the urban estates accounting for the bulk of the student body both in 1884 and in 1900 (Otchet, 1901: 363).

Thus, by 1900 the ethnic composition of the student body within the region's lower education sector became more diverse, which indicates an increase in interest in lower education on the part of its multi-ethnic population. By contrast, no major change was observed for the social composition of the student body within the sector, which continued to be dominated by members of the urban estates.

Let us now examine the library stock within the region's lower education sector at the time. In 1884, the urban school in Derbent had a library stock of 1,293 items (1,056 items in the fundamental library section and 237 items in the discipular one) (Otchet, 1885: tables). By 1900, the school had 1,976 items in the fundamental library section and 732 items in the discipular one. The urban school in Petrovsk had 391 items in the fundamental library section and 218 items in the discipular one (Otchet, 1901: 300). Thus, the combined library stock within the region's lower education sector was 3,317 items, i.e. an increase of nearly three times on 1884.

Primary education
As at 1884, Dagestan Oblast had just seven primary schools under the purview of the Ministry of Public Education (three rural state-run schools, one urban school, two rural schools run by the Ministry of Public Education, and one school run by a benevolent society) (Rajović et al., 2022: 659). Two of these schools were two-grade, and five of them were one-grade. Four of them were for boys only, and three of them were for both boys and girls. The region witnessed a continuous increase in primary educational institutions in the period through to 1900.

Table 3 displays the numbers of primary schools under the purview of the Ministry of Public Education and students in them in Dagestan Oblast in the period 1884–1900.

As evidenced in Table 3, the number of primary educational institutions in the region grew quite slowly up to 1898. However, in the last three years of the period under review the figure rose nearly two times – from 10 to 19. The number of students within the sector increased three times in that period.

Table 3. Numbers of Primary Schools under the Purview of the Ministry of Public Education and Students in Them in Dagestan Oblast in the Period 1884–1900 (Otchet, 1885: applications; Otchet, 1886: applications; Otchet, 1887: 272, 296; Otchet, 1890: № 296, 311; Otchet, 1891: № 315, 330; Otchet, 1892: № 317, 332; Otchet, 1893: № 318, 333; Otchet, 1894: № 318, 333; Otchet, 1895: № 318, 333; Otchet, 1896: 476, 506; Otchet, 1897: 506, 536; Otchet, 1899: 486, 516; Otchet, 1900: 536, 566; Otchet, 1901: 536, 566)

Year	Number of schools	Number of students		
		Boys	Girls	Total
1884	7	196	78	274
1885	7	205	103	308
1886	9	232	116	348
1889	10	277	89	366
1890	10	312	92	404
1891	10	335	97	432
1892	10	320	114	434
1893	10	327	96	423
1894	10	371	93	464
1895	10	382	105	487
1896	10	423	119	542
1898	13	406	130	536
1899	17	564	230	794
1900	19	627	254	881

Let us now examine the ethnic composition of the student body within the region's primary education sector. In 1884, it had the following makeup: ethnic Russians – 136, Armenians – 16, Tatars – 13, mountaineers – 70, Jews – 34, and Europeans – five (Rajović et al., 2022: 660). In 1900, there was a change at the top of the list: mountaineers – 418, ethnic Russians – 286, Jews – 82, Armenians – 56, Tatars – 38, and Georgians – six (Otchet, 1901: 566). As can be seen from the statistics, primary education in Dagestan Oblast was making gradual, if slow, progress among the region's mountaineers at the time.

Private education

As at 1884, Dagestan Oblast had only one private educational institution – the mixed primary Jewish school, which had an enrollment of 22 students (18 boys and four girls) (Rajović et al., 2022: 659).

However, private education essentially ceased to be practiced in the region after the above school closed down as early as 1893 (Otchet, 1894: № 310). This state of affairs persisted until 1899, when the region became home to two mixed primary schools (Otchet, 1900: 518).

Table 4. Numbers of Private Educational Institutions and Students in Them in Dagestan Oblast in the Period 1884–1900 (Otchet, 1885: applications; Otchet, 1886: applications; Otchet, 1887: 305, 307; Otchet, 1890: № 288, 292; Otchet, 1891: № 307, 311; Otchet, 1892: № 309, 313; Otchet, 1893: № 310, 314; Otchet, 1894: № 310; Otchet, 1895: № 310; Otchet, 1896: 310; Otchet, 1897: 488; Otchet, 1899: 468; Otchet, 1900: 518, 526; Otchet, 1901: 518, 526)

Year	Number of schools	Number of students		
		Boys	Girls	Total
1884	1	18	4	22
1885	1	20	4	24
1886	1	21	7	28
1889	1	17	8	25
1890	1	19	8	27

1891	1	21	5	26
1892	1	20	4	24
1893	-	-	-	-
1894	-	-	-	-
1895	-	-	-	-
1896	-	-	-	-
1898	-	-	-	-
1899	2	30	23	53
1900	2	22	23	45

As evidenced in Table 4, the sector lacked stability, and its role in the development of the region's education was insignificant. Nevertheless, whereas in 1884 Dagestan Oblast had only one private educational institution (the Jewish primary school), in 1900 it now had two mixed primary schools, which, combined, were attended by 30 ethnic Russians, 10 Armenians, and five Jews (Otchet, 1901: 528), which indicates that private education in the region became multi-ethnic.

5. Conclusion

By 1900, Dagestan Oblast's education sector had a combined enrollment of 1,895 students (an increase of 2.5 times on 1884).

The region's secondary education sector continued to be dominated by ethnic Russian students. By 1900, the region witnessed increased interest in lower education on the part of members of the region's other ethnic groups, and the way in enrollment in primary education began to be led by members of the mountaineer community. This indicates that there was a major shift in the attitude of the local population toward public education.

The number of educational institutions in the region did not increase significantly. The number of secondary educational institutions there remained the same. The number of lower schools increased two times, and the number of primary schools increased 2.5 times. Education became more accessible, with lower education becoming available in the city of Petrovsk and primary schools opening up within the agrarian sector. All this facilitated the development of public literacy in multi-ethnic Dagestani society.

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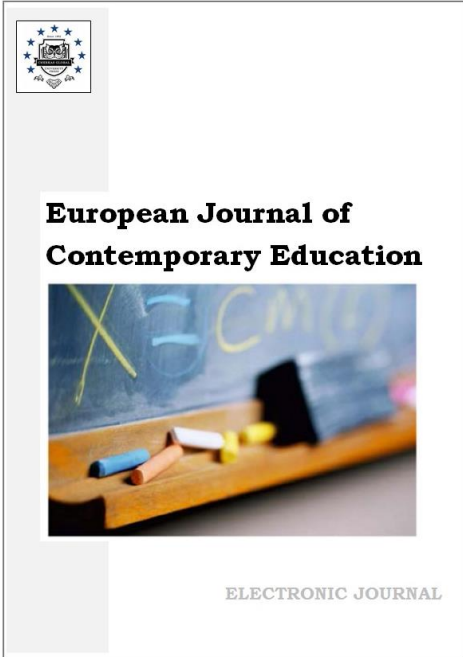
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ELECTRONIC JOURNAL

The System of Public Education in Penza Governorate in the second half of the 19th and early 20th centuries. Part 3

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Abstract

This set of articles explores the development of the system of education in Penza Governorate, a region in the Russian Empire, in the second half of the 19th and early 20th centuries (through to 1917).

The present paper is the third part of the series. It examines the timeframe from 1895 to 1915.

In putting this work together, use was primarily made of relevant documents from the Russian State Historical Archive (Saint Petersburg, Russia), memorandum books, reference books, and the journals of the Ministry of Public Education Narodnoe Obrazovanie and Obrazovanie.

The following historical research methods were employed: historical-comparative, historical-typological, historical-systematic, historical-genetic, and historical-statistical. The general research methods employed in this study were analysis of the literature and sources, systems analysis, and mathematical methods.

A key conclusion drawn from this study was that the period under review witnessed a steady rise in the number of educational institutions in the region. This especially was the case with its lower and primary educational institutions. Vis-à-vis the early 1870s, the region's student body grew nearly 10 times, with the largest increase accounted for by its rural residents and the population of its capital, Penza.

Most of the region's secondary and lower educational institutions had a pronounced agrarian and technical orientation, while its primary education sector was dominated by parochial schools.

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By the end of the first decade of the 20th century, the region began to follow a national trend and witnessed an increase in the number of female students, which especially was the case in cities (a boy to girl student ratio of 1.39:1), as girls tended to attend a trade (vocational) school with a view to being later employed in the field of processing agricultural and livestock farming output. The region's rural residents followed traditional (patriarchal) values, with literacy and education not generally considered important for rural women, which explains the boy to girl student ratio of 3.4:1 in the region's countryside at the time.

Keywords: system of public education, Penza Governorate, education in Penza Governorate, public schools, period 1900–1917.

1. Introduction

Penza Governorate was a relatively small administrative territorial unit located in the heart of the Russian Empire. Primarily focused on arable farming, it had a population of about 1.5 million as at 1897. As Penza Governorate the area existed between 1796 and 1797 and later between 1801 and 1928 (Mamadaliev et al., 2022: 258). The region's capital, Penza, was its largest and most developed city.

The present paper, which is the third and final part of the work, analyzes the timeframe from 1895 to 1915, which includes most of the reign of Emperor Nicholas II. This period witnessed a number of significant events in the history of Russia, including the nation's brisk industrial and technological progress, its powerful demographic growth between the late 19th and early 20th centuries, the Russo-Japanese War, the Russian Revolution of 1905, the resulting economic disruptions, the shift in the form of government from absolute monarchical to de-facto constitutional, the launch of Russian political parliamentarism, the dismantling of the rural commune, and World War I. These developments could not but have had an effect on the education sector of Penza Governorate, a modest Russian province.

2. Materials and methods

In putting the work together, use was made of relevant documents from the Russian State Historical Archive (Saint Petersburg, Russia), memorandum books, reference books, and address calendars. Specifically, the following relevant materials were drawn upon: '1895 Penza Governorate Office Holder Address Calendar' (Adres-kalendar', 1895), '1899 Penza Governorate Reference Book' (Volume 1) (Spravochnaya kniga, 1899), '1900 Penza Governorate Memorandum Book' (Pamyatnaya knizhka, 1900), '1901 Penza Governorate Memorandum Book' (Spravochnaya knizhka, 1901), '1901 Penza Governorate Reference Book' (Volume 2) (Spravochnaya knizhka, 1901), '1902 Penza Governorate Reference Book' (Spravochnaya knizhka, 1902), '1904 Penza Governorate Memorandum Book' (Pamyatnaya knizhka, 1904), '1911 Penza Governorate Reference Book' (Spravochnaya knizhka, 1911), and '1913 Penza Governorate Office Holder Reference Book' (Spravochnaya knizhka, 1913).

Some information was taken from relevant prerevolutionary pedagogical journals, including Zhurnal Ministerstva Narodnogo Prosveshcheniya (Sirotkin, 1905). A significant amount of valuable information was obtained from 'Overview of Primary Education in Penza Governorate Based on Data for the 1899–1900 School Year' (Ocherk, 1903).

Some information was obtained from the 1900 report of the Penza Gubernia Administration on the role of the Penza Gubernia Zemstvo in the development of public education in the region (Doklad gubernskoi upravy, 1900).

Among the relevant education-related regulatory materials drawn upon in this work, of particular note are 'A Digest of Ordinances of the Penza Gubernia Zemstvo Assembly (1865–1911)' (Postanovleniya Penzenskogo..., 1911) and 'The Complete Collection of Laws of the Russian Empire' (Third Collection (1881–1913)) (PSZRI, 1914).

In terms of methodology, use was made of both historical research methods (traditional and nontraditional) and general research methods.

The following traditional historical research methods were used:

– historical-comparative (employed to compare Penza Governorate's education system with that of some other regions of the Russian Empire, including through the lens of the quantitative, chronological, and gender criteria);

– historical-typological (to classify the region's educational institutions by level);

– historical-systematic (to analyze the region's education system during the reign of Nicholas II through the prism of the period's overall historical situation);

– historical-genetic (to investigate the effect of the various preceding events on the development of the region's education sector).

The only nontraditional historical research method used in this part of the work was the historical-statistical method (employed to conduct a quantitative analysis of the region's educational institutions and student body).

The general research methods employed in this work were analysis of the literature and sources (employed to obtain relevant information), systems analysis (to conduct an integrated analysis of available information on the state and development of the region's education system during the reign of Nicholas II), and mathematical methods (to calculate the statistics).

3. Discussion

There is a relative paucity of dedicated research on the system of education in Penza Governorate. Below is an outline of the prerevolutionary, Soviet, and contemporary historiography covering the development of the education system in Penza Governorate in the period under review.

In the prerevolutionary period, the subject was, most notably, explored by the following scholars: N.F. Ezersky, with his detailed analysis of the education system in 'The Zemstvo and the School' (Ezerskii, 1910), 'The Organization of Learning in Public Schools' (Ezerskii, 1912), and 'The Book for Classroom Reading in a Public School' (Ezerskii, 1913), P. Kazantsev, with his 'Studying a Local Area for Pedagogical Purposes' (Kazantsev, 1912), and K. Korol'kov, with his 'The Attitude of the Penza Zemstvo toward Parochial Schools and Certain Measures by the Penza Zemstvo to Help Develop Public Education in the Governorate' (Korol'kov, 1898), which explores the potential of the church to help develop public education.

A valuable reference source on the subject is the entry 'Penza Governorate' in the Brockhaus and Efron Encyclopaedic Dictionary (Volume 23 (45)) (Brokgauz–Efron, 1896).

I.F. Kuz'min provided a brief geographic and historical description of Penza Governorate, which includes an account of its education sector. The time this account was published overlaps with the lower limit of the present study's chronological scope (Kuz'min, 1895).

A brief but interesting comparison of the systems of education in Penza and Perm Governorates was provided by S.G. Sirotkin (Sirotkin, 1905).

In the Soviet period, some information on education in Penza Governorate was contributed by I.M. Bogdanov, with his account of the overall situation in the education sector in prerevolutionary Russia in the monograph 'Literacy and Education in Prerevolutionary Russia' (Bogdanov, 1964). Some attention to the region's education sector was devoted in the joint monograph 'Essays on the History of the Penza Region (Spanning the Period from the Earliest Times to the Late 19th Century)' by a team of researchers including A.F. Dergachev, E.Ya. Dmitruk, and N.V. Karaul'nykh (Ocherki, 1973).

Education in Penza Governorate was briefly touched upon in the joint monograph 'Essays on the History of the Education and Pedagogical Thought in the Nations of the USSR (Spanning the Second Half of the 19th Century)', devoted to pedagogical innovation in the Russian Empire and published under the editorship of A.I. Piskunov (Ocherki, 1976). Some attention to education in Penza Governorate was devoted in the monograph 'Essays on the History of the Education and Pedagogical Thought in the Nations of the USSR (Spanning the Period from the Late 19th to Early 20th Centuries)', which provides a detailed account of the development of the system of education in Russia at the turn of the century (Ocherki, 1991).

A.G. Rashin provided a general characterization of the system of public education in the Russian Empire in the period between the 19th and early 20th centuries (Rashin, 1951). The monograph 'Essays on the History of 19th-Century Progressive Russian Pedagogy' by V.Z. Smirnov explored the progressive ideas propounded by prerevolutionary Russian pedagogues such as K.D. Ushinsky, A.I. Herzen, and D.I. Mendeleyev (Smirnov, 1963). The same scholar also investigated issues of maintaining discipline in secondary educational institutions (Smirnov, 1956).

Lastly, below is an outline of the more prominent contemporary works providing an insight into the development of education in Penza Governorate.

A valuable analysis was provided in 'Essays on the History of Public Education in the Penza Region', produced in 1997 under the editorship of V.I. Nikulin (Ocherki, 1997).

Of particular interest are the dissertations by L.D. Goshulyak focused on analyzing the making and development of the system of public education in Penza Governorate in the period between the second half of the 19th and early 20th centuries (Goshulyak, 1995; Goshulyak, 2002). O.V. Dunayeva investigated the development of vocational education ((Dunaeva, 1999a) and the social composition of vocational educational institutions in the region (Dunaeva, 1999b).

The development of the region's gymnasium education sector in the period between the 19th and early 20th centuries was explored in the dissertation by O.A. Kostyukova (Kostyukova, 2006).

There has been a fair amount of research on female education in Penza Governorate in the period between the second half of the 19th and early 20th centuries, with the following issues explored specifically: its history (Makarkina, Polosin, 1998), its making and development (Parshina, 2007), classifying the region's female educational institutions (Parshina, 2010), and the development of the region's vocational female education sector (Parshina, 2008).

An analysis of the system of public education in Penza Governorate in the period 1900–1905 was provided in the article by N.N. Chetvertkova, which is based on materials from the Penza Governorate Gazette newspaper (Chetvertkova, 2007).

Some general information on the topic is available from the joint monograph 'The Penza Region in the History and Culture of Russia', produced in 2014 under the editorship of O.A. Sukhova (Penzenskii krai, 2014).

Reference was also made to research on other regions of the Russian Empire with the aim of comparing the system of education in Penza Governorate with theirs, including the areas of Kuban Cossackdom (Molchanova et al., 2020), regions within the Caucasus Educational District (Natolochnaya et al., 2016; Cherkasov, 2011; Shevchenko et al., 2016), Vologda Governorate (Cherkasov et al., 2019a; Cherkasov et al., 2019b), and Voronezh Governorate (Cherkasov et al., 2020).

4. Results

The study's geographic scope centers on Penza Governorate, an area that existed as such between 1796 and 1797 and between 1801 and 1928. Its chronological scope is from 1895 to 1915, i.e. from the start of the reign of Emperor Nicholas II (1894–1917) to World War I. As the largest portion of the nation's financial resources went toward the war effort, rather than social policy, a decision was made by the authors not to explore the development of the region's education system at the time of World War I.

The region's educational institutions were classified by type in the work's first two parts.

The reign of Nicholas II can be considered a turning point in the history of the Russian state. Most importantly, there were the three unprecedented revolutions, the second of which put an end to the country's monarchical form of government, which had been in place for many centuries, and the third of which turned Russia into the first major socialist state. Technically, the stage for changes in the country's form of government, which would transform from absolute monarchical to de-facto constitutional, was set by the first revolution. Also, worthy of special mention is what was a phenomenon completely new in Russia – the introduction of a multi-party system and the establishment of the State Duma, a body that both de-facto and de-jure would hold all legislative power in the country. This stage in Russian history, when there existed zemsky sobors, cannot be regarded as a time when Russia had in place the institution of separation of powers, as de-jure legislative power remained in the hands of the tsar. An event that was a total failure for the Russian Empire was the Russo-Japanese War, which was one of the key causes of the First Russian Revolution (1905) and the change in both the political regime (from authoritarian to democratic) and the form of government (from absolute to limited monarchy) in the country. The other problems faced by the Russian government at the time included explosive demographic growth (for which it was not prepared), a highly backward agricultural sector (both in methods of organization[1] and technologically), a considerable amount of foreign capital in industry (hence, low revenues for Russian industrialists and poor workers). However, these challenges did contribute to

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[1] Essentially, the rural commune was dismantled closer to the end of the first decade of the 20th century.

the government's ability to modernize the country in the shortest time possible through the adoption of new technology and attraction of foreign investment.

The present paper relies on relevant statistical data to explore the development of the system of education in Penza Governorate, a region in the heart of the Russian Empire. It will attempt to trace how this process was influenced by the 'Law on Allocating 6,900,000 Rubles toward Primary Education' of May 3, 1908, intended to make education more accessible to all citizens.

The 1899 Reference Book does not list all educational institutions in the region but only those run by benevolent societies, namely (Spravochnaya kniga, 1899: 253):

– First Penza Male Gymnasium (Penza) (Pamyatnaya knizhka, 1900: 33);
– Second Penza Male Gymnasium (Penza) (Pamyatnaya knizhka, 1900: 34);
– Penza Female Gymnasium (Penza) (Pamyatnaya knizhka, 1900: 34);
– Penza Female Progymnasium (Penza) (Pamyatnaya knizhka, 1900: 35);
– Penza Teacher's Seminary (Penza) (Pamyatnaya knizhka, 1900: 35-36);
– Penza Ecclesiastical Seminary (Penza) (Pamyatnaya knizhka, 1900: 36);
– Penza Technical (Real) School (Penza) (Pamyatnaya knizhka, 1900: 36);
– Penza Surveyor's School (Penza) (Pamyatnaya knizhka, 1900: 36);
– Penza Uyezd School (Penza) (Pamyatnaya knizhka, 1900: 62);
– Penza First Noble Ecclesiastical School (Penza) (Pamyatnaya knizhka, 1900: 48);
– Urban School (Insar) (Pamyatnaya knizhka, 1900: 48);
– Krasnoslobodsk Ecclesiastical School (Krasnoslobodsk).

The 1900 Memorandum Book adds the following schools to the list:
– Penza School of Horticulture (Penza) (Pamyatnaya knizhka, 1900: 41);
– Lower School of Forestry (Penza) (Pamyatnaya knizhka, 1900: 41);
– Technical Railway School (Penza) (Pamyatnaya knizhka, 1900: 42);
– Penza Tikhonov Second Ecclesiastical School (Penza) (Pamyatnaya knizhka, 1900: 49);
– N.D. Seliverstov School of Art (Penza) (Pamyatnaya knizhka, 1900: 36-37);
– Diocesan Female Ecclesiastical School (Penza) (Pamyatnaya knizhka, 1900: 50);
– Model School at the Female Ecclesiastical School (Penza) (Pamyatnaya knizhka, 1900: 51);
– Penza Verkhne-Pokrovsky First Parish Male School (Penza) (Pamyatnaya knizhka, 1900: 63);
– Penza Second Parish Male School (Penza) (Pamyatnaya knizhka, 1900: 63);
– Penza Third Parish Male School (Penza) (Pamyatnaya knizhka, 1900: 63);
– Penza Fourth Parish Male School (Penza) (Pamyatnaya knizhka, 1900: 63);
– Penza Fifth Parish Male School (Penza) (Pamyatnaya knizhka, 1900: 64);
– Penza Sixth Parish Male School (Penza) (Pamyatnaya knizhka, 1900: 64);
– Penza Seventh Parish Male School (Penza) (Pamyatnaya knizhka, 1900: 64);
– Penza First Female Urban Primary School (Penza) (Pamyatnaya knizhka, 1900: 64-65);
– Penza Second Female Urban Primary School (Penza) (Pamyatnaya knizhka, 1900: 65);
– Penza Third Female Urban Primary School (Penza) (Pamyatnaya knizhka, 1900: 65);
– Penza Fourth Female Urban Primary School (Penza) (Pamyatnaya knizhka, 1900: 65);
– Penza Fifth Female Urban Primary School (Penza) (Pamyatnaya knizhka, 1900: 65-66);
– Penza Tatishchev Female Trade School (Pamyatnaya knizhka, 1900: 66);
– Penza Female F.E. Shvetsov's Trade School (Pamyatnaya knizhka, 1900: 66);
– Gorodishche Uyezd School (Gorodishche) (Pamyatnaya knizhka, 1900: 78);
– Gorodishche Parish Male School (Gorodishche) (Pamyatnaya knizhka, 1900: 78);
– Gorodishche Parish Female School (Gorodishche) (Pamyatnaya knizhka, 1900: 79);
– Insar Four-Grade Urban School (Insar) (Pamyatnaya knizhka, 1900: 89);
– Insar Parish Male School (Insar) (Pamyatnaya knizhka, 1900: 89);
– Insar Parish Female School (Insar) (Pamyatnaya knizhka, 1900: 89);
– Kerensk Urban School (Kerensk) (Pamyatnaya knizhka, 1900: 99);
– Kerensk First Male Parish School (Kerensk) (Pamyatnaya knizhka, 1900: 99);
– Kerensk Second Male Parish School (Kerensk) (Pamyatnaya knizhka, 1900: 99);
– Kerensk Female Parish School (Kerensk) (Pamyatnaya knizhka, 1900: 100);
– Krasnoslobodsk Four-Grade Urban School (Krasnoslobodsk) (Pamyatnaya knizhka, 1900: 109);
– Krasnoslobodsk Male Parish School (Krasnoslobodsk) (Pamyatnaya knizhka, 1900: 109);
– Krasnoslobodsk Female Parish School (Krasnoslobodsk) (Pamyatnaya knizhka, 1900: 109);

– Krasnoslobodsk Ecclesiastical School (Krasnoslobodsk) (Pamyatnaya knizhka, 1900: 111);
– Verkhny Lomov Primary Male School (Verkhny Lomov) (Pamyatnaya knizhka, 1900: 114);
– Verkhny Lomov Primary Female School (Verkhny Lomov) (Pamyatnaya knizhka, 1900: 114);
– Nizhny Lomov Four-Grade School (Nizhny Lomov) (Pamyatnaya knizhka, 1900: 120);
– Nizhny Lomov Male Parish School (Nizhny Lomov) (Pamyatnaya knizhka, 1900: 120);
– Nizhny Lomov Female Parish School (Nizhny Lomov) (Pamyatnaya knizhka, 1900: 120);
– Mokshan Four-Grade Uyezd School (Mokshan) (Pamyatnaya knizhka, 1900: 129);
– Mokshan Male Parish School (Mokshan) (Pamyatnaya knizhka, 1900: 129);
– Mokshan Female Parish School (Mokshan) (Pamyatnaya knizhka, 1900: 129);
– Narovchat Four-Grade Uyezd School (Narovchat) (Pamyatnaya knizhka, 1900: 139);
– Narovchat Male Parish School (Narovchat) (Pamyatnaya knizhka, 1900: 139);
– Narovchat Female Parish School (Narovchat) (Pamyatnaya knizhka, 1900: 139);
– Saransk Four-Grade Uyezd School (Saransk) (Pamyatnaya knizhka, 1900: 150);
– Saransk Male Parish School (Saransk) (Pamyatnaya knizhka, 1900: 150);
– Saransk Male Parish School (Saransk) (Pamyatnaya knizhka, 1900: 150);
– Troitsk Two-Grade Model Male School (Troitsk) (Pamyatnaya knizhka, 1900: 154);
– Troitsk Female School (Troitsk) (Pamyatnaya knizhka, 1900: 154);
– Chembar Three-Grade Uyezd School (Chembar) (Pamyatnaya knizhka, 1900: 161-162);
– Chembar Parish Male School (Chembar) (Pamyatnaya knizhka, 1900: 162);
– Chembar Parish Female School (Chembar) (Pamyatnaya knizhka, 1900: 162);
– Shishkeyev Parish Male School (Shishkeyev) (Pamyatnaya knizhka, 1900: 165).
The 1904 Memorandum Book adds the following schools to the list:
– Penza Female Second Gymnasium (Penza) (Pamyatnaya knizhka, 1904: 44);
– Penza First Urban Four-Grade School (Penza) (Pamyatnaya knizhka, 1904: 44);
– Penza Second Urban Four-Grade School (Penza) (Pamyatnaya knizhka, 1904: 44);
– Penza Sixth Female Urban Primary school (Penza) (Pamyatnaya knizhka, 1904: 48).
The capital, Penza, also became home to four parochial schools (Pamyatnaya knizhka, 1904: 60-61), and the cities Insar, Gorodishche, Nizhny Lomov, Verkhny Lomov, Narovchat, and Saransk also became home to six parochial schools and five two-grade parish schools (Pamyatnaya knizhka, 1904: 70-159).
The 1911 Reference Book does not systematize the data by type of educational institution and reports only the total numbers of educational institutions and students in the region (Spravochnaya kniga, 1911: 203):
a) number of educational institutions:
– in Penza – 67;
– in uyezd and supernumerary towns – 66;
– in uyezds – 869.
b) number of students:
– in Penza – 6,540 males and 4,706 females;
– in uyezd and supernumerary towns – 4,874 males and 3,507 females;
– in uyezds – 47,190 males and 13,884 females.
There were a total of 1,002 educational institutions and a total of 80,701 students.
As evidenced by the above data, there was a significant increase in the number of students in Penza Governorate at the time, whose percentage relative to its population was quite high. Note also that most of the development of the region's female education sector occurred in its capital, Penza, where (as well as in the region's uyezd cities) the boy to girl student ratio was 1.39:1. In the region's uyezds, i.e. in the heart of its countryside, this ratio was 3.4:1. This was associated with adherence to traditional (patriarchal) values in the region's rural areas, where education (and even literacy) was not generally considered important for women (Goshulyak, 1995; Goshulyak, 2002).
In addition, in 1914 the region had in place an entire network of parochial Orthodox Christian schools, a total of 378 educational institutions, with a combined enrollment of 25,759 (17,681 boys and 8,078 girls) (Vsepoddanneishii otchet, 1916: 122-123).
As at January 1, 1915, Penza Governorate had a total of 170,730 school-age children, with 91,085 of these attending schools run by the Ministry of Public Education (RGIA. F. 733. Op. 207. D. 39. L. 1). Exclusive of private educational institutions, the ratio of children receiving to those not

receiving education in the region was 1:1.87, with children attending parochial schools accounting for a little over a quarter of the region's total student body.

Table 1. Numbers of Educational Institutions under the Purview of the Ministry of Public Education and Students in Them in Penza Governorate in the Period 1899–1915 (Spravochnaya kniga, 1899: 253; Pamyatnaya knizhka, 1900: 33-165; Pamyatnaya knizhka, 1904: 33-165; Pamyatnaya knizhka, 1904: 40-159; Spravochnaya kniga, 1911: 203)

Year	Number of educational institutions				Number of students		
	Higher	Secondary	Lower	Primary	Boys	Girls	Total
1899[1]	N/A	11	1	N/A	N/A	N/A	N/A
1900[2]	N/A	12	36	21	N/A	N/A	N/A
1904[3]	N/A	12	38	36	N/A	N/A	N/A
1911[4]	N/A	N/A	N/A	N/A	58,604	22,097	80,701
1914[5]	N/A	N/A	N/A	378	17,681	8,078	25,759
1915[6]	N/A	N/A	N/A	N/A	N/A	N/A	91,085

The data in Table 1 indicate that, overall, the system of education in Penza Governorate developed in the period between the first and early second decades of the 20th century in quite a stable manner. There were increases in the number of lower and primary educational institutions and the size of the student body in the region. However, given that the period's memorandum and reference books (unlike the Trustee's reports, which are not available through open access) provide only fragmentary information, it is impossible to establish at this time how intensive the development of primary education was in the region subsequent to the passage of the Law of May 3, 1908.

The fact that the size of the region's student body increased several times is an indirect indication of the effectiveness of the measures undertaken by the government to improve access to education for the broad masses of the people.

If we compare the system of education in Penza Governorate with that in the governorates of the Caucasus region, the areas of Kuban Cossackdom, and Voronezh Governorate, we can see that at that time the process of development of the education sector was more intensive in the southern regions (Cherkasov et al., 2020; Molchanova et al., 2020; Magsumov et al., 2020; Natolochnaya et al., 2020), while Penza Governorate did relatively better in this area than Vologda Governorate (Cherkasov et al., 2019a; Cherkasov et al., 2019b). Note also that the boy to girl student ratio of 2.4:1 is quite substantial, which is testimony to adherence to patriarchal values among Russian families in the central part of Russia. During the same period, Tiflis Governorate had a boy to girl student ratio of 1.1:1 (i.e. near parity) (Mamadaliev et al., 2020).

5. Conclusion
The following conclusions were drawn from the insights gained from this study:

1. There is currently a relative paucity of material covering the development of the system of education in Penza Governorate in the early 20th century. The reference and memorandum books available to researchers can provide only a general idea of the process.

2. Even the fragmentary information available attests that the number of educational institutions increased steadily in the region, which especially was the case with its lower and primary schools.

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[1] Data incomplete

[2] Data incomplete

[3] Data incomplete

[4] Based on non-systematized data in the 1911 Reference Book for Penza Governorate

[5] Data incomplete

[6] Data incomplete

3. Vis-à-vis the early 1870s, the region's student body grew nearly 10 times, with the largest increase accounted for by its rural population and with its major cities (above all, its capital, Penza) witnessing increases in both the number of educational institutions and the size of the student body.

4. Most of the region's secondary and lower educational institutions had a pronounced agrarian and technical orientation, which was in line with its economy being dominated by agriculture and livestock farming. The region's primary education sector was dominated by parochial schools, which was associated with the bulk of its population (over 80 %) being made up of ethnic Russians who were Orthodox Christians. However, by 1914 the region's parochial schools were attended by only a quarter of its entire student body. By 1915, over half of the region's school-age children attended schools run by the Ministry of Public Education, which is quite an achievement in terms of making education accessible to all citizens.

5. By the end of the first decade of the 20th century, the region began to follow a national trend and witnessed an increase in the number of female students. This especially was the case in the region's cities, as girls tended to attend a trade (vocational) school with a view to being later employed in the field of processing agricultural and livestock farming output. The boy to girl student ratio in the region's urban sector was 1.39:1. By contrast, in the region's rural areas, where residents followed traditional (patriarchal) values and literacy and education were not generally considered important for women, the boy to girl student ratio was 3.4:1.

6. Vis-à-vis the areas within the Caucasus Educational District and Vologda and Voronezh Governorates, the system of education in Penza Governorate developed in line with common patterns, with the region, overall, being neither a front-runner nor a laggard in this respect.

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**European Journal of
Contemporary Education**

ELECTRONIC JOURNAL

European Journal of Contemporary Education (2012–2022): Accomplishments

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Abstract

This paper surveys the pedagogical research that has been published in the European Journal of Contemporary Education up to this point since it was launched in 2012. It examines the key stages in the development of this periodical, briefly goes over the key pedagogical issues in present-day education systems explored in it over the period, outlines its periodicity, and furnishes some relevant statistical data.

The work covers the research published in the journal in the period from its launch (September 2012) to its beginning to be indexed in Scopus (March 2016) and from then on to the present (June 2022). Information is provided about the journal's editorial board and its peer-review process.

In addition to describing the key stages in the development of the European Journal of Contemporary Education, its philosophy, mission, goals and objectives as a scholarly publication, and the challenges and prospects for it, the paper also provides relevant information relating to statistics, citation rates, and scholarly merit.

Keywords: journal, pedagogical journal, pedagogical research, Scopus, Web of Science.

1. Introduction

This paper surveys the research published over the 10-year period the European Journal of Contemporary Education has been in existence. The journal's mission is to "promote innovative, creative, and unconventional ways to investigate and resolve issues in present-day education and to familiarize the public with the findings of research into issues in education and trends and regular patterns in its development from the perspective of pedagogy, psychology, philosophy, and interdisciplinary science".

The journal seeks to form a broad and objective "perspective of issues in present-day education" and to convey best practices in present-day humanities education, including

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unconventional didactic methods, methodologies, and technologies.

The European Journal of Contemporary Education helps one learn about the latest achievements in pedagogy and in the development of international and interagency cooperation in education and provides an opportunity for one to test both insights from research by young people and ideas from prominent didactic schools of thought.

The journal is, most importantly, oriented toward exploring innovative ideas in pedagogy and unconventional methods and methodologies designed to address pedagogical issues.

The European Journal of Contemporary Education is an open-access journal published in English.

What distinguishes this journal from any other in the field is its dedicated focus on familiarizing one with the latest research in theoretical and practical pedagogy and the latest solutions offered by researchers to help tackle issues in present-day education.

2. Materials

The paper relies on research published in the European Journal of Contemporary Education and statistical data from the citation platforms Scopus, Directory of Open Access Journals, Open Academic Journals Index, Web of Science, and Russian Science Citation Index.

3. Results and discussion

3.1. Key stages in the journal's development, organizational aspects of its operation, and thematic areas of its activity

The European Journal of Contemporary Education was launched in September 2012 as an outlet for exploring issues and research related to education. It is an electronic journal published once every three months – in March, June, September, and December, with the four issues numbered 1 to 4 inclusive. The journal has published studies by researchers from across the world, including Russia, the US, China, India, Pakistan, Afghanistan, Brazil, the UK, France, Spain, Portugal, Italy, Germany, Austria, Switzerland, Slovakia, the Czech Republic, Serbia, Croatia, Bulgaria, Turkey, Kazakhstan, Turkmenistan, Israel, Ukraine, South Korea, Lithuania, Belarus, Egypt, Ghana, Iran, Malaysia, Mexico, Nigeria, Romania, Thailand, the United Arab Emirates, and other countries.

The journal's current Editor-in-Chief is Yury Stanislavovich Tyunnikov, a Doctor of Pedagogical Sciences, professor, and prominent researcher in pedagogy and innovative didactic technology (Sochi State University, Sochi, Russia). The post of Deputy Editor-in-Chief for the journal is currently held by Rushan Ziyatdinov, a well-known developer and researcher of innovative didactic systems (Department of Industrial Engineering, Keimyung University, Daegu, South Korea).

The journal's editorial board is currently comprised of the following well-known specialists in the area of pedagogical research: Stefan Aufenanger (University of Mainz, Mainz, Germany), Elena Bendíková (Matej Bel University, Banská Bystrica, Slovakia), Jana Bírová (Comenius University, Bratislava, Slovakia), Ivica Boticki (University of Zagreb, Zagreb, Croatia), Edmundas Jasinskas (Lithuanian Sports University, Kaunas, Lithuania), Aleksandr Fedorov (A.P. Chekhov Taganrog State Pedagogical Institute, Taganrog, Russia), Mark Malisa (College of Saint Rose School of Education, Albany, USA), Romualdas Malinauskas (Lithuanian Academy of Physical Education, Kaunas, Lithuania), Slavica Ševkušić (Institute of Educational Research, Belgrade, Serbia), and Žaneta Simanavičiene (Mykolas Romeris University, Vilnius, Lithuania).

Before it is published in the European Journal of Contemporary Education, each work undergoes a rigorous peer review process. The following peer-review evaluation criteria must be met:
– originality (each work undergoes a plagiarism check; 100% originality is required);
– provision of persuasive evidence for the validity of the study's methodologies and findings;
– topicality (the study must address topical issues in education).

All manuscripts undergo a rigorous check by the editorial board until they are cleared for publication. If the editorial board judges a publication as not meeting the journal's evaluation criteria, it will be rejected – regardless of the number of positive third-party peer reviews it has. Publications are reviewed by several subject experts, whose collective decision is required. To ensure maximum objectivity, the peer review process is anonymous for both authors and reviewers. This policy helps ensure objective and impartial analysis of works submitted to the

journal. An important aspect of the journal's publication approval process is its dedicated focus on research ethics and safety.

3.2. Authors and subject matter

The journal's first issue, which came out on September 24, 2012, included 12 papers.

The major themes in the issue included the following: issues of classifying invariants of future teachers' information competence (Kazakov, 2012); education research at Sochi State University (major schools of thought and focus areas) (Kharisov, 2012); meta-subject content of a person's education (Khutorskoi, 2012); characteristics of young basketball players' career self-efficacy (Malinauskas et al., 2012); concepts, structure, and educational potential of the so-called 'conjugate education system' (Ostapenko et al., 2012); conceptual and technological organization and operation of the international research school 'The Linguistic-Rhetorical Paradigm: Theoretical and Applied Aspects' (Renz, 2012); key areas of basic research guiding the development of the informatization of domestic education (Robert, 2012); individual student work as a tool for self-education (Saifutdinova, 2012); defining one's education objectives in the knowledge economy from the perspective of the competency-based approach (Shishov, 2012); conceptual knowledge in pedagogy (the taxonomic environment and the classification structure) (Tyunnikov, 2012); development of the conception of a regional standard for the social quality of general education (Yasvin, 2012); dynamic geometric environments as a tool for computer modeling in the system of modern mathematical education (Ziatdinov, Rakuta, 2012).

The average number of views per item in the first issue was 2,700 times. The issue featured authors from Russia, Turkey, Ukraine, and Lithuania.

In 2016, the journal started to be indexed in Scopus. The first issue of 2016 included 16 publications, mainly studies by Turkish researchers, and addressed the following themes: computer-assisted learning, multimedia instruction, learning in general, and design and development in education (İpek et al., 2016); relationship between university students' satisfaction levels and readiness for electronic courses (Topal, 2016); best practices in the use of interactive environments to promote self-regulation in online learning (Delen, 2016); relationship between primary learning styles and learning objects in an online environment (Özdemir, 2016); pre-service teachers' and primary school students' views about online digital storytelling (Karakoyun, Kuzu, 2016); students' opinions on the use of tablet computers in education (Duran, Aytaç, 2016); concept maps' contribution to a computer architecture and organization course (Aydogan, Ergun, 2016); perceptions of mathematics and information literacy self-efficacy levels of pre-service primary mathematics teachers (Dinçer, Yılmaz, 2016); preparation of computer-assisted learning material for fourth-grade primary-school students' English language class for teaching them numbers (Yüzen, Karamete, 2016); effect of computer-assisted teaching material designed based on the ASSURE instructional design model and the ARCS model of motivation on students' achievement levels in mathematics class and their resulting attitudes (Karakış et al., 2016); development of materials for raising awareness of the use of smart boards (Günaydin, Karamete, 2016); education students' computer self-efficacy beliefs and their attitudes toward computers and the implementation of computer-assisted education (Berkant, 2016); cyber-bully and victim experiences of pre-service teachers (Tosun, 2016); students' and teachers' perceptions of an after-school online course (Yalavaç, Samur, 2016); future instructional designers' perceptions of the fundamentals of online courses (Genç, Tinmaz); preferences and attitudes regarding the use of interactive whiteboards in learning (Sözcü, İpek, 2016).

The journal's latest issue (June 2022) includes 29 papers, addressing the following themes in pedagogy: areas for improvement of public procurement procedures in the area of education (Demchenko et al., 2022); levels of satisfaction with their body image among 13-14-year-old students in Lithuanian schools (Derkintiene et al., 2022); cooperation between companies and educational institutions aimed at receipt of cutting-edge education in Kosovo (Dragusha et al., 2022); what young people pursuing a degree in Social Education and older people attending a special training course at the University of Huelva know about sexuality in old age and their attitudes toward it (García-Rojas, Vélez, 2022); EU pedagogy's role and best practices in cross-border youth interaction (Gruzina et al., 2022); enhancing the digital literacy of students with disabilities (Ibraimkulov et al., 2022); teacher leadership in the learning process and the school administration's attitude toward this phenomenon (Kaminskienė et al., 2022); adapting the Teaching Approaches Scale to Kosovo culture (Kervan et al., 2022); fostering students' project

management skills via collaborative work using Smartsheet (Mamaeva et al., 2022); relationship between teachers' inclusive teaching competencies and their professional development and personality traits (Mihić et al., 2022); Israeli pre-service teachers' assessments of their practical experience training during the COVID-19 pandemic (Naifeld et al., 2022); creative abilities of students with a dominant cognitive style (Prosekov et al., 2022); modeling the process of socialization in an orphanage (Sakenov et al., 2022); millennial students' financial literacy, savings culture, and behavior in relation to their retirement savings (De Los Santos-Gutiérrez et al., 2022); assessing mathematics anxiety in students from varied cultures (Sarfo et al., 2022); effect of a social skills training program on adolescents attending physical education classes (Sniras, 2022); mobile applications' didactic potential in terms of fostering students' intercultural competence (Soboleva et al., 2022); exploring student evaluation in Physical Education in Lithuania (Sukys et al., 2022); fostering engineering students' motivation and independent learning skills (Sveshnikova et al., 2022); measuring the cognitive engagement and interest of medical students in a serious game design activity (Zairi et al., 2022); impact of the pandemic on the learning process of foreign students studying in Russia and its effect in terms of educational migration (Zharov et al., 2022); legal education in the Russian Empire in the 18th century (Degtyarev et al., 2022); Kharkov Imperial University as a crucial center for the development of the Don Cossack intelligentsia (1800–1810) (Peretyatko et al., 2022); social criteria describing literacy and education levels in Ukrainian governorates within the Russian Empire at the end of the 19th century (Lebid, 2022); development of the regulatory framework of the Caucasus Educational District in the second half of the 19th century (Allalyev et al., 2022); public education in Penza Governorate in the second half of the 19th and early 20th centuries (the study's second part) (Mamadaliev et al., 2022); education in Turkestan and Western Siberia at the end of the 19th century through to the 1920s (the development and characteristics of the "new method" schools sector) (Tokishkadyrov et al., 2022); public education in Dagestan Oblast (1860–1917) (Rajović et al., 2022); public education in Elisabethpol Governorate in the period 1868–1917 (the study's third part) (Magsumov et al., 2022).

As the above attests, the European Journal of Contemporary Education is committed to addressing a broad spectrum of pedagogical, didactic, and historical-pedagogical issues that are topical in modern pedagogy.

4. Conclusion

As evidenced statistically, the European Journal of Contemporary Education has firmly established itself as a top-rated outlet focusing on topical and objective research in modern pedagogy, didactics, and the history of pedagogy. The journal's objective peer-review process helps ensure that it publishes only works of high scholarly merit. The journal's high standing is attested by the large number of papers with high citation rates published in it.

5. Acknowledgements

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European Journal of Contemporary Education

ELECTRONIC JOURNAL

Cherkas Global University (1992–2022): Yesterday, Today, Tomorrow

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Abstract

This work is dedicated to the 30th anniversary of Cherkas Global University, a private research organization. It traces the evolution of this organization from a military historical society to a university and outlines some of the key characteristics of its development.

The primary source drawn upon is 'Cherkas Global University (1992–2022): A Collection of Documents', a collection of published works that includes 50 documents spanning the period from 1992 to 2022. In addition, use was made of periodical press materials, namely relevant materials from the newspaper Vestnik Leib-Gvardii.

In terms of methodology, use was made of the following traditional principles: systematicity, objectivity, and historicism. The integrated use of these principles helped to transform a vast, scrappy patchwork of data into a systematized body of knowledge, synthesize this kind of information, consider the line of events in a historical sequence, and arrive at conclusive results.

The author's conclusion is that over the 30-year period the organization has come a long way since its inception in 1992 from a regional military historical society in the city of Sochi to a private research university in Washington, DC. In this period, the organization has built a fruitful relationship with its foreign partners, including colleges in the world's top 100. The organization has its own publishing house, which handles top-rated journals. There have been projects on indexing scholarly journals on the university's platforms and popularizing research in the area of history. The university has acted since 2020 as the organizer of the annual research contest 'Slavery in the Past and Present'. In addition, the university is distinguished by significant publication activity, with a focus on research topics such as the history of world civilizations and professional and pedagogical training. The above allows us to look to the future with optimism and take pride in our past and present achievements.

Keywords: Cherkas Global University, Vestnik Leib-Gvardii newspaper, International Network Center for Fundamental and Applied Research, history of an organization.

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1. Introduction

Cherkas Global University is a private research university. It will turn 30 on August 1, 2022. The article explores its entire dynamic journey from the military historical organization Leib Guard Regiment (1992) to the International Network Center for Fundamental and Applied Research (2014), and, finally, to Cherkas Global University via reorganization (2021).

2. Materials and methods

The primary source drawn upon is 'Cherkas Global University (1992–2022): A Collection of Documents' (Cherkas Global…, 2022), a collection of published works that includes 50 documents spanning the period from 1992 to 2022. In addition, use was made of periodical press materials, namely relevant materials from the newspaper Vestnik Leib-Gvardii.

In terms of methodology, use was made of the following traditional principles: systematicity, objectivity, and historicism. The integrated use of these principles helped to transform a vast, scrappy patchwork of data into a systematized body of knowledge, synthesize this kind of information, consider the line of events in a historical sequence, and arrive at conclusive results.

3. Discussion

The historiography on this subject is relatively thin. It can be divided into the following two key themes:

1) The history of Cherkas Global University;

2) Publications on the founder of Cherkas Global University, A.A. Cherkasov.

The first group includes the following works: 'A History of Cherkas Global University: Its Making (1992–2014)' (Taran, 2021), 'The Newspaper Vestnik Leib-Gvardii (1992–1997) as a Historical Source' (Rajović, 2021), and 'INCFAR: Characteristics and Challenges (A Fifth Anniversary Tribute)' (Tarakanov, Ponomareva, 2019). These works cover different chronological periods in the development of the organization. Specifically, K.V. Taran's work analyzes the development of the organization in the period 1992–2014. The one by G. Rajović is focused on the Vestnik Leib-Gvardii newspaper solely, while the one by V.V. Tarakanov and M.A. Ponomareva discusses the organization's activity in the period 2014–2019.

The second group includes the following works: 'Aleksandr Cherkasov: A Scholar, Publisher, and Organizer of Research Collaborations (To the 20th Anniversary of the Scholar's Research and Pedagogical Activity)' (Tarakanov, Ludwig, 2019), 'New Trends in the Organization of Historical Research in the South of Russia: A.A. Cherkasov's Activities in the Study of Slavery' (Peretyatko, 2021), and 'Students' Humanitarian Science Club Activity in 2006–2012' (Ermachkov et al., 2018). The first of these works discusses the research-and-pedagogical activity of A.A. Cherkasov. It is dedicated to the 20th anniversary of his scholarly activity. The one by A.Yu. Peretyatko explores A.A. Cherkasov's activity in the area of the study of slavery. Finally, the work by I.A. Ermachkov and his colleagues analyzes the work of the science club headed by A.A. Cherkasov in the period 2006–2012.

4. Results

The history of Cherkas Global University is closely associated with its founder – Aleksandr Arvelodovich Cherkasov, a Doctor of Historical Science. Mr. Cherkasov was born in 1974 in the city of Sochi. He is descended from the ancient family of the Cherkasovs (Keretsky's), whose progenitor was Prokopy Cherkas, born circa 1685 (Cherkasov, 2021: 1671-1682). Mr. Cherkasov is a tenth-generation descendant of this family.

In early 1992, Mr. Cherkasov established the military historical society Leib Guard Regiment in Sochi, and as early as August 1, 1992, he authorized the publication of the Society's monthly newspaper Vestnik Leib-Gvardii (Cherkas Global…, 2022: 7). This newspaper was published on and off up until 1997, resulting in 14 issues, 12 of which are held today in the US Library of Congress.

The newspaper pursued educational aims, and as early as 1992, it began to carry materials on the history of cadet corps (military educational institutions in the Russian Empire) and the history of World War I. The date August 1, 1992 became the starting point for the history of our organization.

Mr. Cherkasov turned to the educational process as early as 1993. On January 28, 1993, he authorized the establishment of a cadet regiment for youth aged 11 to 14 (Cherkas Global…, 2022: 8). However, this cadet regiment was disbanded a few months later due to a lack of funding. Mr. Cherkasov returned to the educational process in December 1996, when he introduced a theoretical course of study at the above military historical society (Cherkas Global…, 2022: 8-9). This course of study incorporated special military disciplines and was about 6 months long.

Mr. Cherkasov graduated from university in 1999. He then joined the Department of National History at Sochi State University. In 2002, he defended his candidate's thesis. In 2003, he launched his first scholarly journal, Istoriya i Istoriki v Kontekste Vremeni, and in 2006, the first issue of the historical journal Bylye Gody came out. In 2007, Mr. Cherkasov defended his doctoral dissertation.

In 2010, Mr. Cherkasov began to combine his research work with entrepreneurial activity. Specifically, on November 1, 2010, he launched the monthly multidisciplinary journal European Researcher (Cherkas Global…, 2022: 10-15). This would turn out a commercially successful project, one launched at the right time – at a time when there was a shortage of open-access journals in Russia.

On March 25, 2012, Mr. Cherkasov set up in Sochi the commercial organization Researcher Academic Publishing House (Cherkas Global…, 2022: 16-26), which continues to be in operation today. The period 2010–2018 saw the launch of over 50 scholarly journals under the purview of this organization, most of which continue to be published to this day. The launching of new scholarly journals necessitated creating a platform for indexing scholarly journals, and on June 11, 2013, Mr. Cherkasov launched the database Open Academic Journals Index (Cherkas Global…, 2022: 27). Today, this database indexes nearly 3,300 open-access scholarly journals from 116 countries.

In the spring of 2014, Mr. Cherkasov left Sochi State University, and on May 26, 2014, he set up his own research center – the International Network Center for Fundamental and Applied Research (Cherkas Global…, 2022: 37-41). In July 2014, the Center became home to three labs and a research department (Cherkas Global…, 2022: 47). The center primarily focused on research into the history of the Caucasus, slavery as a phenomenon, and the history of pedagogy.

In pursuit of international cooperation, on September 6, 2015, Mr. Cherkasov established the Eastern European Historical Society (Cherkas Global…, 2022: 50-52). This enabled the Center to engage in joint research projects with foreign scholars and provided a boost in publication activity in foreign journals. The Society received input from well-known historians such as Roin Metreveli (Georgia), Sorin Arhire (Romania), Darko Darovec (Slovenia), Asen Kozhukharov (Bulgaria), Miodrag Markovic (Serbia), Sergey Sulyak (Moldova), Gocha Tsetskhladze (UK), Evgeny Vodyasov (Russia), Andrey Dvornichenko (Russia), Evgeny Krinko (Russia), Pavol Tisliar (Slovakia), Andrii Lebid (Ukraine), and Michal Smigel (Slovakia).

The services of foreign specialists were enlisted by the Center as well. Specifically, between 2014 and 2016 it received input from researchers such as Nugzar Ter-Oganov (Israel), Sergey Degtyarev (Ukraine), Goran Rajovic (Serbia), and Jacob Sarfo (Ghana). At that time, the bulk of its staff were Russians, mostly researchers from Sochi State University (Anvar Mamadaliev, Olga Natolochnaya, Konstantin Taran, Violetta Molchanova, and Natalya Shevchenko), research students of Aleksandr Cherkasov (Ivan Ermachkov and Lyubov Polyakova), and external specialists (Nikolas Mityukov, Timur Magsumov, and Artem Peretyatko).

From 2016 to 2018, Mr. Cherkasov was a visiting professor at Matej Bel University in Banská Bystrica (Slovakia). His frequent visits to a foreign university prompted him to open a publishing house in the capital of an Eastern European nation within the European Union, with his choice ultimately falling on Bratislava, the capital of Slovakia. In January 2018, a clone of the publishing house in Sochi was set up in Bratislava. It was named Academic Publishing House Researcher s.r.o. (Cherkas Global…, 2022: 54). The 50 journals under the purview of the commercial organization in Sochi were moved to Slovakia, with just one journal, European Researcher, staying in Russia.

During the period 2016–2019, Mr. Cherkasov took part in four Arctic expeditions organized as part of the Arctic Floating University program (2016 – Novaya Zemlya's western coast; 2017 – Franz Josef Land; 2018 – Novaya Zemlya's eastern and western coasts; 2019 – Spitsbergen). As a result of these expeditions, scholarly ties were successfully established with researchers from Switzerland, Canada, and China.

Fig. 1. A group of researchers holding an American flag and an INCFAR flag in Ny-Ålesund on the island of Spitsbergen (Norway) in July of 2019 (A. Cherkasov second right).

In February 2018, Mr. Cherkasov resolved to move the International Network Center for Fundamental and Applied Research from Sochi to Washington, DC (Cherkas Global…, 2022: 55). As a result, 'INCFAR' became the official abbreviation for the organization (Cherkas Global…, 2022: 56). In the fall of 2018, Mr. Cherkasov took his first familiarization trip to Washington.

The experience with creating Open Academic Journals Index[1] indicated that indexing articles was not the pinnacle in popularizing research. Consequently, on April 30, 2018, the Eastern European Scientific Information Agency was established (Cherkas Global…, 2022: 57). This project helped to kick off the process of picking the more interesting articles on history published in Eastern European journals and presenting them on the platform of the Information Agency.

Central to the activity of the Research Center were information materials, searching for which required a significant amount of time. Consequently, on January 10, 2020, the decision was taken to establish the INCFAR's fundamental electronic library (Cherkas Global…, 2022: 58). The launch of the platform was followed by the uploading of the literature for the Center. The library numbered over 60,000 items as at May 2022.

That same year, 2020, Mr. Cherkasov began to focus on holding international contests for the best research work. On May 10, 2020, it was announced that a contest dedicated to the fifth anniversary of the Eastern European Historical Society would be held soon, the first event of this kind (Cherkas Global…, 2022: 59).

Three weeks later, they officially instituted Slavery in the Past and Present, an annual narrowly specialized contest for research works on slavery (Cherkas Global…, 2022: 60). The contest had a prize of $2,250.

On January 8, 2021, Mr. Cherkasov resolved to reorganize the INCFAR into Cherkas Global University (Cherkas Global…, 2022: 61). The organization was reorganized into a corporation with a board of directors. The Board included Sergey Degtyarev (Sumy, Ukraine), Jacob Sarfo (Effiduase-Koforidua, Ghana), and Aleksandr Cherkasov (Los Angeles, USA), with Mr. Cherkasov appointed as the President of Cherkas Global University.

In 2021, on the 4th of July, the date on which they celebrate Independence Day in the US, the Slovak publishing house Academic Publishing House Researcher s.r.o. was reorganized into Cherkas Global University Press (Cherkas Global…, 2022: 73), and the journals from Slovakia were moved to the US. Today, Cherkas Global University Press numbers 39 journals, some of which are

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[1] It became a full-text database in 2015. The database numbers a hefty over 200,000 articles as at 2022.

indexed in the top-rated databases Scopus and Web of Science. Specifically, the historical journal Bylye Gody (Editor-in-Chief – Sergey Degtyarev), founded in 2006, is indexed in both Scopus and Web of Science, as is European Journal of Contemporary Education (Editor-in-Chief – Yury Tyunnikov), founded in 2012. The journal Media Education (Editor-in-Chief – Alexander Fedorov), founded in 2005, is indexed in Web of Science. International Journal of Media and Information Literacy (Editor-in-Chief – Anastasia Levitskaya), founded in 2016, is indexed in Scopus.

Some of the Publishing House's scholarly journals are indexed in CAS (Chemical Abstracts Service), a division of the American Chemical Society, which are as follows: European Journal of Medicine (Editor-in-Chief – Anatolii Bykov), European Journal of Molecular Biotechnology (Editor-in-Chief – Valerii Novochadov), and European Reviews of Chemical Research (Editor-in-Chief – Viktor Bekhterev).

In addition, the Publishing House works with several revived journals from the Russian Empire period, namely the journal of the Military Department Voennyi Sbornik (Editor-in-Chief – Ivan Ermachkov), the journal of the Ministry of Public Education Zhurnal Ministerstva Narodnogo Prosveshcheniya (Editor-in-Chief – Dmitrii Kudinov), and the historical journal Russkaya Starina (Editor-in-Chief – Evgeny Krinko). There are also a few narrowly specialized journals, namely the journal on the history of slavery Slavery: Theory and Practice (Editor-in-Chief – Sergey Dudarev), the journal Biogeosystem Technique (Editors-in-Chief – Valery Kalinitchenko and Artemi Cerdà), and Propaganda in the World and Local Conflicts (Editor-in-Chief – Andrii Lebid), the world's only journal on the history of military propaganda.

The editorial boards of journals under the purview of Cherkas Global University Press include scholars who are well-known in the research-and-pedagogical community, namely Evgeniya Blagodatskaya (Germany), Tatiana Minkina (Russia), Sudhakar Srivastava (India), Vishnu D. Rajput (Germany), Peter F. Suraĭ (UK), Utku Kose (Turkey), Pandian Vasant (Malaysia), Gerhard-Wilhelm Weber (Poland), Marius Brazaitis (Lithuania), Oleg O. Rybak (Russia), Romualdas K. Malinauskas (Lithuania), Paul R. Josephson (USA), Roger Markwick (Australia), Boris Mironov (Russia), Joshua Sanborn (USA), Frithjof Benjamin Schenk (Switzerland), Willard Sunderland (USA), Guangxiang Zhang (China), Rushan Ziatdinov (South Korea), Jana Birova (Slovakia), Boticki Ivica (Croatia), Szijarto Imre (Hungary), Maria Ranieri (Italy), Sirkku Kotilainen (Finland), Henry Giroux (Canada), and Emma Camarero (Spain).

At the time of its reorganization into Cherkas Global University, the organization numbered around 20 staff members, who were employed at the two labs, the Laboratory for World Civilizations and the Laboratory for Professional and Pedagogical Training, and the Research Information Department.

Cherkas Global University in Scopus

As at July 17, 2022, Cherkas Global University numbered 415 works written by 24 staff members of the organization.

The top 20 organizations interacting with Cherkas Global University include Volgograd State University (284 works), Plekhanov Russian University of Economics (148), Penza State University of Architecture and Construction (66), Université de Genève (55), Sumy State University (54), East European History Society (37), Matej Bel University (21), Universidad Cristóbal Colón (16), Tel Aviv University (10), and others.

The organization's works have been published in the following journals: Bylye Gody, European Journal of Contemporary Education, Vestnik Sankt Peterburgskogo Universiteta. Istoriya, International Journal of Media and Information Literacy, Rusin, Terra Sebus, Muzeológia a Kultúrne Dedičstvo, Voprosy Istorii, Annales: Anali za Istrske in Mediteranske Študije. Series Historia et Sociologia, Brukenthal Acta Musei, Bulletin of the Georgian National Academy of Sciences, Konštantínove Listy, and others.

Figure 2 illustrates the distribution of the number of Cherkas Global University publications in Scopus across the years.
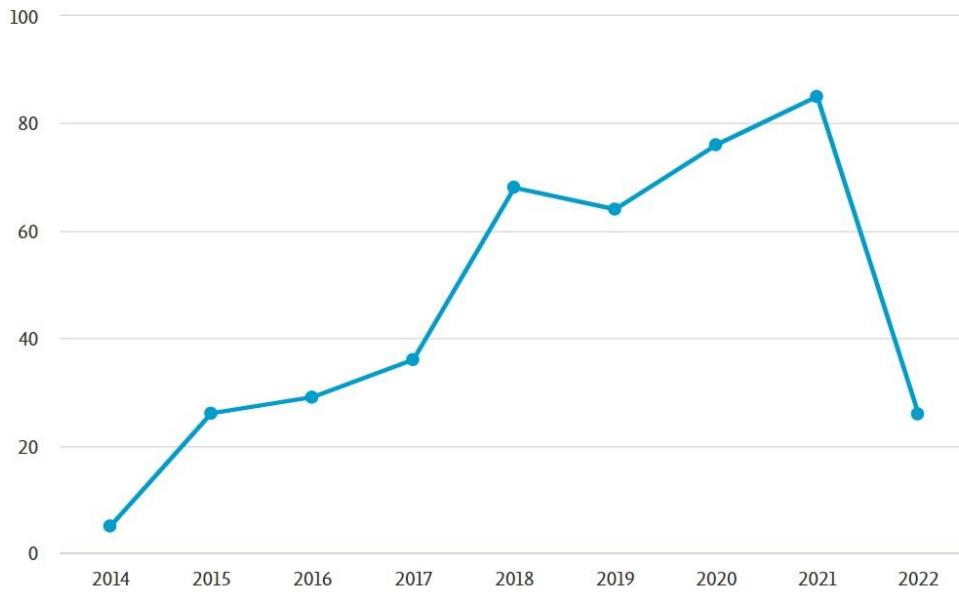
Fig. 2. Distribution of the number of Cherkas Global University publications in Scopus across the years.

Note that the data for 2022 in Figure 2 are currently incomplete.
Figure 3 illustrates the organization's interaction with researchers from other countries.
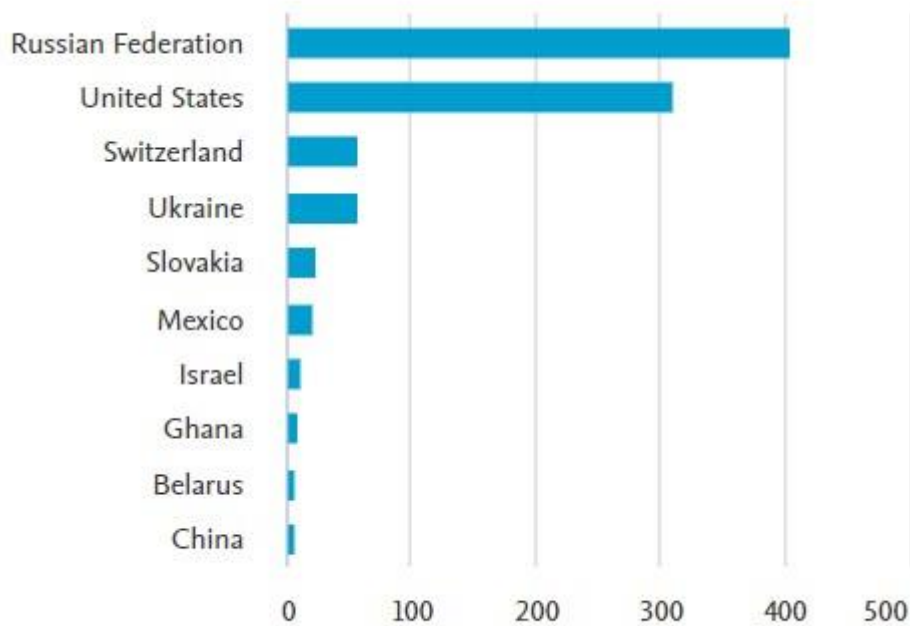

Fig. 3. Top 10 countries with which Cherkas Global University has engaged in joint activity.

As evidenced in Figure 3, the university has actively engaged in collaboration with researchers from Switzerland, Ukraine, Slovakia, and Mexico, followed by Israel, Ghana, China, and other nations.

In terms of the area of knowledge, the largest portion of publications has been accounted for by Social Sciences (56.1 %) and Arts and Humanities (40.7 %) (Figure 4).
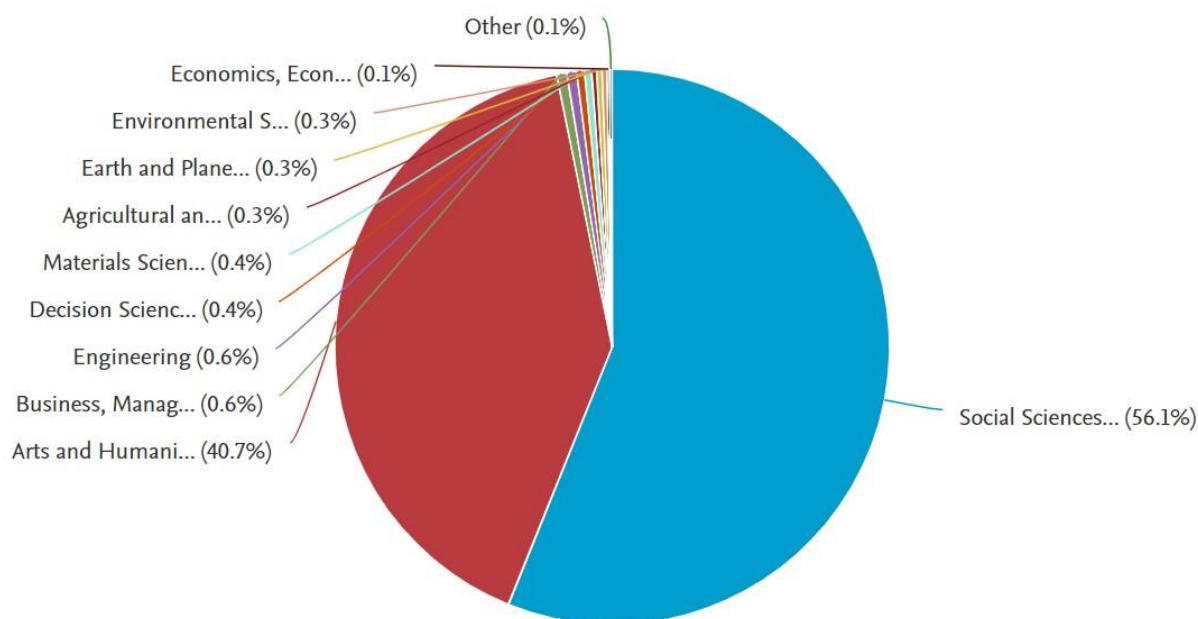
Fig. 4. Distribution of the organization's publications across the different areas of knowledge

The organization's most cited papers

This selection incorporates papers with the most citations (22 to 54 citations).

The presented works fall under two themes. Most of the papers, 16 out of the 20, deal with the subject of the system of public education in different regions across the Russian Empire, which is an area of focus at Cherkas Global University. These works were published between 2016 and 2020. Some of them explore the entire system of public education in the Caucasus (Shevchenko et al., 2016; Magsumov et al., 2018; Natolochnaya et al., 2018), while others are focused on specific regions of the Caucasus, like Kuban Oblast (Molchanova et al., 2019; Molchanova et al., 2019a; Molchanova et al., 2020), Kars Oblast (Magsumov et al., 2020), and Tiflis Governorate (Mamadaliev et al., 2020; Mamadaliev et al., 2020a).

Besides the Caucasus, research has also been conducted into public education in Vologda Governorate (Cherkasov et al., 2019; Cherkasov et al., 2019a), Vyatka Governorate (Magsumov et al., 2018), the Don region (Peretyatko, Zulfugarzade, 2017; Peretyatko, Zulfugarzade, 2017a), and Vilna Governorate (Natolochnaya et al., 2019; Natolochnaya et al., 2019a).

The second portion of the publications are works on the history of the Caucasus published between 2015 and 2017. During this period, a group of researchers led by A.A. Cherkasov implemented a fundamental research project entitled 'The Caucasus in the Dialogue of Civilizations: Mechanisms behind Global Change (The Experience from the Period between the 18th and 19th Centuries)' (Cherkasov et al., 2015; Cherkasov et al., 2016; Cherkasov et al., 2016a; Cherkasov et al., 2017).

5. Conclusion

Over the 30-year period, the organization has come a long way since its inception in 1992 from a regional military historical society in the city of Sochi to a private research university in Washington, DC. In this period, the organization has built a fruitful relationship with its foreign partners, including colleges in the world's top 100. The organization has its own publishing house, which handles top-rated journals. There have been projects on indexing scholarly journals on the university's platforms and popularizing research in the area of history. The university has acted since 2020 as the organizer of the annual research contest 'Slavery in the Past and Present'. In addition, the university is distinguished by significant publication activity, with a focus on research topics such as the history of world civilizations and professional and pedagogical training. The above allows us to look to the future with optimism and take pride in our past and present achievements.

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ELECTRONIC JOURNAL

From the History of Rifle Association in the Cherkas Global University (1992–2022)

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Abstract

The paper examines the development history of sports shooting as part of the culture in the Cherkas Global University. The attention is paid to the characteristic features of the development of this sport, taking into account the legislation.

There were used as materials the "Vestnik Leib-Gvardii" newspaper files for 1996–1997, as well as the collection of documents "Cherkas Global University 1992–2022: Collection of Documents". The photographs from the personal archive of A.A. Cherkasov were used as illustrative material.

The paper relies on the historical-chronological method, which allowed us to consider the events in their historical-chronological sequence and to identify the characteristic features of the development of sports shooting organization, taking into account time, regulatory and other features. A descriptive method was also used, which was naturally applied due to the absence of other publications about these events.

In conclusion the author states that shooting training has always been an integral part of the culture in Cherkas Global University. The first attempts to develop this sport were made already in the period of the creation of the cadet class in January 1993, then this work was well-practiced in 1996–1999. These classes were also carried out subsequently, but this training has reached to a qualitatively new level since 2020, when completely different equipment became available for classes.

On August 1, 2022, on the 30th anniversary of the Cherkas Global University, the Rifle Association was established, the Charter of the organization and its logo were published, and this means that the Rifle Association at the university has finally acquired its legal status. The creation of this organization was preceded by an almost 30-year history of shooting sports at the university, which clearly demonstrated the presence of deep roots of mass sports events in this scientific institution.

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Keywords: Rifle Association, Cherkas Global University, history, 1993–2022, Vestnik Leib-Gvardii.

1. Introduction

Sport is essential in the life of the youth community (university, school). Thanks to this, a competitive environment is formed, as well as the desire of young people to achieve certain successes. Shooting sports is one of these. The first attempts to introduce sports shooting in the Cherkas Global University as part of cultural and mass work with students date back to the time of the creation of the cadet platoon in January 1993. As is known, only boys aged 10 to 14 years were trained in the cadet platoon (Cherkas Global..., 2022: 8).

2. Materials and methods

There were used as materials the "Vestnik Leib-Gvardii" newspaper files for 1996–1997, as well as the collection of documents "Cherkas Global University 1992–2022: Collection of Documents" (Cherkas Global..., 2022). The photographs from the personal archive of A.A. Cherkasov were used as illustrative material.

The paper relies on the historical-chronological method, which allowed us to consider the events in their historical-chronological sequence and to identify the characteristic features of the development of sports shooting organization, taking into account time, regulatory and other features. A descriptive method was also used, which was naturally applied due to the absence of other publications about these events.

3. Results

The cadet platoon lasted only a few months (Taran, 2021: 1079), as a result, sports shooting had to be abandoned for a while.

The resumption of regular classes began in September 1996. Specially for these purposes, the Kalashnikov assault rifles and a 12-charge Grosman 1077 air rifle (Figure 1) with an optical sight were purchased.

Fig. 1. Crosman 1077 air rifle

It is important to note that the 12-charge Crosman 1077 air rifle with an optical sight allowed to achieve the amazing results in shooting.

The training program included the field exercises on rough terrain, material studies and sports shooting.

On September 6, 1996, the first field trip to the Semyonovsky Spire Mountain (996 m above sea level) took place.

Fig. 2. The first field exit. Shooting training classes on the Semyonovsky Spire Mountain. September 6, 1996

On November 17, 1996, the second field trip to the Semyonovsky Spire Mountain took place. The day before there was a fire on the mountain, the chestnut forests were burning, as a result, the ascent was in extraordinary conditions (Figure 3).

Fig. 3. The second field exit. Semenovsky Spire Mountain without green coating. November 17, 1996

During the second field trip, the tactical exercises were also held with training weapons on the mountain (Figures 4, 5).

Fig. 4. Tactical exercises during the second field trip

Fig. 5. Participants of the Second field exit under the Semyonovsky Spire Mountain

In the "Vestnik Leib-Gvardii" newspaper No. 10 for 1996 in the section "Weekdays and holidays of the district" it was noted that from September to November 1996 there were 3 field exits: two to the Semenovsky spire and one to the Agur waterfalls. During field exits, fire training was carried out too (Budni i prazdniki, 1996: 2).

Usually sports shooting classes took place in enclosed spacious environments. The shooting was carried out from an air rifle with an optical sight at a distance of up to 15 m, with an open sight – at a distance of 10 meters. There were used two firing positions: standing and kneeling.

Indoor shooting classes began on December 24, 1996. There is a paper about this in the January issue of the "Vestnik Leib-Gvardii" newspaper, which reported: "... since December 24, regular fire training classes have been held. Over the past time (meaning until the end of January – Auth.), 5 shootings were carried out, including at speed using a 4.5 mm 12-charge gas cylinder rifle manufactured in the USA" (Budni i prazdniki, 1997: 2).

According to the "Vestnik Leib-Gvardii" newspaper No. 12 for 1997, the similar classes were conducted in February 1997, both as part of the educational process and in connection with the working visit of a representative from Nalchik city (Budni i prazdniki, 1997a: 2-3).

Fig. 6. During sports shooting classes. November 1996

Often, an optical sight was used during training with a rifle (See Figure 6), but cases of shooting with an open sight were also practiced (Figures 7, 8).

Fig. 7. Shooting with an open sight. January 1997

The organizers of shooting training also took part in the shooting with an open sight (Figure 8).

Fig. 8. Shooting organizer Aleksandr Cherkasov at the firing line. January 1997

Since 1997, the shootings, if the weather permitted, have often taken place in mountainous wooded areas (Figure 9). So, on March 2, the first field trip took place in 1997 around the Abazinka River. During the exit, shooting was also carried out, which showed a significant improvement in shooting results (Budni i prazdniki, 1997b: 2).

Fig. 9. The organizers of the shooting – Aleksandr Cherkasov (left) and Roman Nekhoroshev during the next field exit. March 1997

Firing lines were set up in various places, including other side of the river (Figure 10).

Fig. 10. Firing line. Targets on the other side of the river. July 1997

Here is an example of another firing line (Figure 11), as in Figure 10, the two shooting stances are used: standing and kneeling.

Fig. 11. Firing line during the next field exit

Firearms training was also carried out later, but they were more episodic in nature. During these classes, shooting techniques from the Saiga 410k smoothbore carbine were practiced (Figure 12).

Fig. 12. "Saiga" 410 K smooth-bore carbine

Unfortunately, this carbine did not differ by aimed shooting, the spread of bullets was significant. Nevertheless, fire exercises were conducted even in winter (Figure 13).

Fig. 13. Fire exercises. February 2005

Since 2020, the sport shooting has become permanent again in Los Angeles. For sports shooting, the rifles based on the AR-15 (Figure 14), as well as Glock and Beretta pistols, began to be used.

Fig. 14. On the firing line with an AR-15 rifle. March 12, 2020

The shooting was carried out with a standard NATO cartridge of 5.56 mm caliber (Figure 15).

Fig. 15. AR-15 rifle and ammunition

As for the Glock pistol, both 9 and 10 mm pistols were used during the shooting (Figure 16).

Fig. 16. The best target from a Glock pistol. March 23 , 2020

There were also used the open areas (shooting ranches) for practice (Figure 17).

Fig. 17. At the shooting range. October 2021

In 2022, a Glock pistol with a collimator sight was used in practical classes (Figure 18).

Fig. 18. Shooting from a Glock pistol with a collimator sight. August 2, 2022
As well as shooting from an AR-15 with an open sight (Figure 19).

Fig. 19. Shooting lessons from an AR-15 rifle. August 15, 2022

In 2022, the average ammunition consumption was about 150 rounds for one lesson, often an AR-15 rifle and some kind of pistol are used during exercise. This allows the shooter to combine his occupation, switch to a different shooting distance.

On August 1, 2022, on the 30th anniversary of the Cherkas Global University, the Rifle Association was established. We believe it is possible to publish here the Charter of the organization without abbreviations:

CHARTER Rifle Association of the Cherkas Global University

1. General provisions

1.1. Rifle Association is the sports organization of Cherkas Global University, hereinafter referred to as the Rifle Association.

1.2. Rifle Association in its activities is guided by the Charter of Cherkas Global University.

The activities of the Rifle Association are based on the principles of voluntariness, equality of its members, self-governance and legality.

1.3. Rifle Association is not liable for the obligations of its members, just as members are not liable for the obligations of the Rifle Association.

2. MAIN GOALS AND OBJECTIVES. ACTIONS

2.1. The goals of Rifle Association are:

- development and popularization of bullet and bench shooting as a sport at Cherkas Global University;

- training of the safe use of sporting firearms;

- assistance in social protection of the rights and interests of employees of Cherkas Global University.

2.2. The objectives of Rifle Association are:

- creation of favorable conditions for the unification of specialists in bullet and bench shooting and the realization of the creative and scientific potential of members of Rifle Association, expanding the circle of people involved in shooting sports, improving the skills of athletes;

- increasing the role of shooting sports in the sports life of Cherkas Global University, the formation of skills for the safe use of weapons;

- organizing training and providing effective assistance to members of Rifle Association for participation in competitions;

- participation in the organization and financing of research and development work on the production of new types of sports equipment or facilities.

- development and strengthening of relations with sports and other organizations.

2.3. In order to achieve its goals, the Rifle Association carries out the following activities:

- carries out sports international relations within its competence and represents the interests of bullet and bench shooting;

- organizes lectures, conferences, seminars and events to improve the skills of specialists in bullet and bench shooting;

- carries out promotion of shooting sports through, including its own mass media;

- organizes the publication of methodological, sports information and other printed materials on issues of bullet and bench shooting;

- carries out publishing, advertising, information activities;

- ensures compliance with sports ethics by members of the Rifle Association and takes measures to prevent the use of prohibited means and methods in sports.

3. RIGHTS AND OBLIGATIONS OF THE ORGANIZATION

3.1. In order to attain its desired Charter objectives, the Rifle Association, in accordance with applicable law, has the right to:

- to represent and protect their rights, the legitimate interests of their members in state authorities, local governments and other organizations;

- actively disseminate information about their activities;

- convene and hold conferences, meetings, meetings and other events on issues within the competence of the Rifle Association;

- establish mass media and carry out publishing activities;

- assist in the organization of sports and entertainment events;

- dispose of own funds and property for the implementation of their activities;
- independently determine their internal structure, forms and methods of activity;
- have flags, emblems, pennants and other symbols of the Rifle Association.

3.2. Rifle Association is required to publish an annual report on the use of its property or make such report available for review.

4. MEMBERS OF THE ORGANIZATION, THEIR RIGHTS AND DUTIES

4.1. Membership in the Rifle Association is voluntary.

Members of the Rifle Association can be students and employees of Cherkas Global University aging over 21 years old, who share the statutory goals and objectives of the Rifle Association, take part in its activities, provide effective assistance in the work of the Rifle Association, who have submitted an application in accordance with the law and this Charter.

4.2. Admission to the Rifle Association is based on a personal written application submitted to the local office or directly to the Council of the Rifle Association.

Admission and exclusion of Rifle Association members is carried out by the Council on the basis of lists of candidates from among individuals submitted by the local office, similar lists submitted by the Secretary of the Rifle Association, if such applications were submitted directly to the Rifle Association Council. The decision on admission and exclusion from the Rifle Association members are made by a simple majority of votes of the total number of Council members.

4.3. All members of the Rifle Association have the right to:
- make proposals to any bodies of the Rifle Association on issues related to its activities;
- receive information about the planned events of the Association and take part in them;
- receive information about the activities of the Rifle Association;
- voluntarily withdraw from membership of the Rifle Association;
- participate in the development and implementation of projects and programs, use the educational, methodological, scientific, informational developments of the Rifle Association.

4.4. Members of the Rifle Association are required to:
- observe the norms of the Charter of Rifle Association;
- to promote the development and popularization of bullet shooting and bench shooting;
- actively contribute to the achievement of the goals and objectives of Rifle Association, defined by this Charter;
- participate in decision-making, without which the Rifle Association cannot continue its activities in accordance with applicable law, if its participation is necessary for making such decisions;
- not to commit acts deliberately aimed at causing harm to the Rifle Association;
- take care of the property of the Rifle Association.

4.5. Membership in Rifle Association is disabled:
- upon voluntary withdrawal from the Rifle Association membership;
- when excluded from the Rifle Association membership.

4.6. A member of Rifle Association may be excluded from its membership for a number of reasons:
- committing actions discrediting Rifle Association, violation of the sports ethics;
- non-observance of the requirements of this Charter.

5. CHANGING OR ADDING AMENDMENTS TO THE CHARTER

5.1. Changes and amendments to this Charter are made by decision of the Council and are accepted if at least 2/3 of the participating members have voted for them. The new version of the Charter is adopted in the same manner.

6. LIQUIDATION AND REORGANIZATION OF THE ORGANIZATION

6.1. The reorganization and liquidation of Rifle Association is carried out by the decision of the Rifle Association Council;

6.2. In case of the decision to liquidate the Association Liquidation Commission is created in accordance with the established procedure».

Furthermore, the Rifle Association logo was approved (Figure 20).

Fig. 20. Rifle Association Logo of the Cherkas Global University

Logo design. The company logo is based on the emblem, behind which the two images of M4 rifles were placed. At the top of the logo there is a decorative crown with a pattern and the inscription "Rifle", and below the inscription "Association", and even lower there is a decorative pattern.

4. Conclusion
Summing up, it is important to mention that shooting training has always been an integral part of the culture in Cherkas Global University. The first attempts to develop this sport were made already in the period of the creation of the cadet class in January 1993, then this work was well-practiced in 1996–1999. These classes were also carried out subsequently, but this training has reached to a qualitatively new level since 2020, when completely different equipment became available for classes.

On August 1, 2022, on the 30th anniversary of the Cherkas Global University, the Rifle Association was established, the Charter of the organization and its logo were published, and this means that the Rifle Association at the university has finally acquired its legal status. The creation of this organization was preceded by an almost 30-year history of shooting sports at the university, which clearly demonstrated the presence of deep roots of mass sports events in this scientific institution.

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