



Has been issued since 2012.  
E-ISSN 2305-6746  
2019, 8(4). Issued 4 times a year  
MIAR ICDS 2019 – 9,3

EDITORIAL BOARD

- Dr. Yury Tyunnikov** – Sochi State University, Sochi, Russian Federation (Editor-in-Chief)  
**Dr. Rushan Ziatdinov** – Keimyung University, Daegu, Republic of Korea (Deputy Editor-in-Chief)  
**Dr. Aufenanger Stefan** – University of Mainz, Mainz, Germany  
**Dr. Bendikova Elena** – Matej Bel University, Banská Bystrica, Slovakia  
**Dr. Birova Jana** – Comenius University, Bratislava, Slovakia  
**Dr. Boticki Ivica** – University of Zagreb, Croatia  
**Dr. Jasinskas Edmundas** – Lithuanian Sports University, Lithuania  
**Dr. Esi Marius-Costel** – Stefan cel Mare University of Suceava, Romania  
**Dr. Fedorov Alexander** – Anton Chekhov Taganrog State Pedagogical Institute, Taganrog, Russian Federation  
**Dr. Malisa Mark** – College of Saint Rose School of Education, Albany, USA  
**Dr. Malinauskas Romualdas** – Lithuanian Academy of Physical Education, Kaunas, Lithuania  
**Dr. Ševkušić Slavica** – Institute of Educational Research, Belgrade, Serbia  
**Dr. Simanavičiene Žaneta** – Kaunas University of Technology, Lithuania

Journal is indexed by: **Cross Ref** (USA), **EBSCOhost Electronic Journals Service** (USA), **Electronic scientific library** (Russian Federation), **Global Impact Factor** (Australia), **Index Copernicus** (Poland), **Journal Index** (USA), **Open Academic Journals Index** (USA), **Scopus** (Netherlands), **Web of Science** (USA).

All manuscripts are peer reviewed by experts in the respective field. Authors of the manuscripts bear responsibility for their content, credibility and reliability.

Editorial board doesn't expect the manuscripts' authors to always agree with its opinion.

Postal Address: 1367/4, Stara Vajnorska str., Bratislava – Nove Mesto, Slovak Republic, 831 04  
Release date 15.12.19.  
Format 21 × 29,7/4.

Website: <http://aphrsro.net>  
E-mail: [ejce.aphr@gmail.com](mailto:ejce.aphr@gmail.com)

Headset Georgia.

Founder and Editor: Academic Publishing House Researcher s.r.o.  
Order № 229.

## CONTENTS

**The Problems of Contemporary Education**

How Teacher Educators Develop Trust in Educational Systems A.I. AlHouli, A.M. Alrashidi .....	695
Teachers Carrying out their Professional Roles as View of Zarqa Town's Teachers Z. Al-Zoubi, N. shamroukh, N. Ahmad banyounis .....	715
Corrective-Developmental Work with Children and Their Parents via a College-Based Research-and-Education Center as a Means of Enhancing the Child's Emotional Well-Being I.I. Degtyareva, M.A. Maznichenko, I.A. Mushkina, O.P. Sadilova .....	726
Bounded Rationality, Uncertainty, and Complexity as Decision-Making Contexts: A Case of One University in Russia E.A. Drugova, O.N. Kalachikova .....	738
Phonematic Awareness and Chosen Cognitive Functions of a Child J. Duchovicova, E. Kovacikova, A.N. Khuziakhmetov, A.A. Valeev .....	751
Analysis of Sport Motivation Factors amongst Eastern European Higher Education Students V. Fenyves, K. Dajnoki, D. Kerezsi, É. Bácsné Bába .....	761
Digital Technologies in Education: Problems and Prospects for "Moscow Electronic School" Project Implementation E.V. Frolova, T.M. Ryabova, O.V. Rogach .....	779
Correlations Between Components of Social Emotional Learning of Secondary School Students in Ho Chi Minh City, Vietnam S. Van Huynh, V. Thien Giang, T. Thi Nguyen, L. Tran .....	790
Analysis of Management of Higher Education Institutions M.S. Kozyrev, T.V. Bogacheva, E.E. Jukova, P.V. Palekhova .....	801
Education and Financial Inclusion. An Empirical Study in Students of Higher Education N. Larracilla-Salazar, I. Yadira Peña-Osorio, V.S. Molchanova .....	810
Social Capital of Territorial Educational Complexes: Development Features and Problems (Using the Example of Moscow) N.V. Medvedeva, E.A. Vetrova, E.E. Kabanova, N.V. Havanova .....	819
Empirical Study on Financial Education. Case Study of Public Accounting Graduates in Veracruz, Mexico E. Moreno García .....	828
The Formation of the Eurasian Research-and-Education Ecosystem and the Internationalization of Educational Platforms: the Case of Russia and China N. Pestereva, S. Yuhua, M. Belyakova, F.Jgin .....	841

The Role of Family Education Strategies in the Development of Self-Regulation within Behavior of Students in 9–11 Grades Yu.P. Povarenkov, N.A. Baranova, N.W. Mitiukov .....	855
An Approximation of University Students' Learning Ability in the Area of Probability S. Sandoval-Bravo, P. Luis Celso-Arellano, V. Gualajara, S. Coronado .....	864
Students' Experiences of Philosophy Classes in Higher Education: A Case Study T. Saulius, R.K. Malinauskas .....	879
Cross-Disciplinary Higher Education between Medialogy and Bibliology: Book Science as Degree Programme in Universities Worldwide M. Tsvetkova .....	889
M-learning in Teaching ESP: Case Study of Ecology Students N.G. Valeeva, E.B. Pavlova, Y.L. Zakirova .....	920

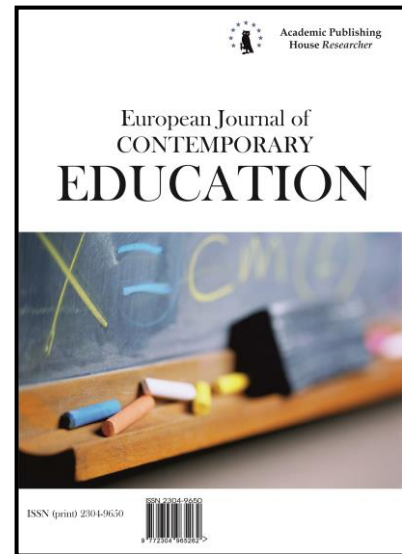
### **The History of Education**

The Development of the Public Education System in Northeastern Ukraine in the Period Spanning the 18 <sup>th</sup> and the first half of the 19 <sup>th</sup> centuries S.I. Degtyarev, M.V. Plotnikova, L.G. Polyakova, J. Gut .....	931
The German System of Public Education in the Period between the 15 <sup>th</sup> and early 20th centuries. Part 3 A.M. Mamadaliev, N.V. Svechnikova, I.A. Ermachkov, A. Médico .....	951
The Relationship of Education and Economic in the Don Host at the 1890 A.Yu. Peretyatko .....	
The History of the Public Education System in Vilna Governorate (the Second Half of the 19th and the Early 20th Centuries). Part 2 O.V. Natolochnaya, Bella A. Bulgarova, Yu.A. Voropaeva, A.N. Volkov .....	964
The Development of the School Education System in Vologda Governorate (1725–1917). Part 4 A.A. Cherkasov, S.N. Bratanovskii, L.G. Zimovets .....	973
INCFAR: Characteristics and Challenges (A Fifth Anniversary Tribute) V.V. Tarakanov, M.A. Ponomareva .....	984



Copyright © 2019 by Academic Publishing House Researcher s.r.o.  
All rights reserved.  
Published in the Slovak Republic  
European Journal of Contemporary Education  
E-ISSN 2305-6746  
2019, 8(4): 695-714  
DOI: 10.13187/ejced.2019.4.695  
[www.ejournal1.com](http://www.ejournal1.com)

**WARNING!** Article copyright. Copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of the violation of the author(s) rights will be pursued on the basis of international legislation. Using the hyperlinks to the article is not considered a violation of copyright.



## The Problems of Contemporary Education

### How Teacher Educators Develop Trust in Educational Systems

Ali I. AlHouli <sup>a, \*</sup>, Alanoud M. Alrashidi <sup>b</sup>

<sup>a</sup> Department of Curriculum and Instruction, Kuwait University – College of Education, Kuwait

<sup>b</sup> Department of Foundations of Education, Kuwait University – College of Education, Kuwait

#### Abstract

The purpose of this study is to identify teacher educators' trust levels in four cross-national educational systems, namely the United States (US), the United Kingdom (UK), the Arab world (AW), and the Gulf Countries (GC). In addition to identifying the trust levels, the factors involved in trust building in these systems were also investigated. A two-phase explanatory sequential mixed methods design was developed in which a survey and focus group interviews were utilized to collect the quantitative and qualitative data. The quantitative data analysis showed that the highest level of trust for most study participants was directed toward the American educational system. The analysis and interpretation of qualitative phase participants inputs yielded 26 factors that affected trust in educational systems. The overall conclusion of this study indicates that teacher educators develop trust in educational systems by being influenced by a number of integrated cognitive and emotional factors.

**Keywords:** cross-national educational systems, US, UK, Arab world, Gulf countries, trust building, trust factors, teacher educators.

#### 1. Introduction

A literature review of the concept of trust reveals different meanings regarding varying factors. These factors can be affected by different places, occasions, individuals, philosophies, entities, and study disciplines that benefit from this concept of trust. McKnight and Chervany's (2001) analysis of research across disciplines on the nature of the trust concept concluded that trust is used as a different factor in different studies—namely, as an attitude, behavior, belief, disposition, expectation, structure, or intention. Additionally, trust is recognized as a moral value

---

\* Corresponding author

E-mail addresses: [ali.ismail.kuniv@gmail.com](mailto:ali.ismail.kuniv@gmail.com) (Ali I. AlHouli)

(D'Olimpio, 2016; Uslaner, 2002) or an ideal that rests on human values (Morselli et al., 2012). It is difficult, therefore, to establish a single definition of trust. However, context can be used as a guiding factor to select from the various alternatives. The context, time and place, and actual use of this concept will lead to selection of the appropriate meaning and definition of trust for any situation or study.

Trust also takes different forms or types. One method of categorizing these forms is by identifying the agent or party that receives the trust (trustee) and labeling trust as individual, social, or institutional, according to the nature of that agent (Carr, 2014). The present study mainly concerns institutional trust. Institutional trust involves businesses that offer products or services, and government bodies such as a police force, healthcare facility, judicial system, or educational system (ES) (Carr, 2014).

## **2. Literature review**

### **2.1. Trust Research in Education**

In the last 10 years, several studies have investigated trust in educational institutions. These studies can be organized into four categories: the educational institution level; the geographical location of the institution; the degree/level of trust each institution receives; and the nature of the trustor. Trust studies have mainly been conducted at middle and secondary schools (McMorran, 2012; Resh, Sabbagh, 2014; Saglam, 2016) and higher-education institutions (Gray, Weir, 2014; Martins, Baptista Nunes, 2016; Siefkes-Andrew, 2017; Wilson, 2011). Other studies on trust in educational institutions at different levels have been conducted in various countries, including the US and Canada (Ament, 2013; Mann, 2012; Shelden et al., 2010; Simmons, 2012a; Simmons, 2012b), the UK (Bates, 2012; Schoon, Cheng, 2011; Simpson, Baird, 2013), Belgium, Germany, and Ukraine (Claes, Hooghe, 2017; Landwehr, Weissen, 2016; OECD, 2017), Hong Kong and Confucian Asian countries (Carless, 2009; Tan, Tambyah, 2011), Ghana (Addai et al., 2013), and New Zealand (Shephard, 2017).

Furthermore, several studies have focused on low/negative or high/positive degrees/levels of trust (trust amount) in educational institutions (Bowman, 2012; Saglam, 2016). Additionally, studies on educational institutions have explored the derivation of trust types/forms from interconnected components of beliefs, intentions, behaviors, and dispositions (Vidotto et al., 2012), which are different in political-manipulation-oriented (Lewis, 2005) and accountability-oriented studies (Beaulieu, 2006; Carless, 2009).

Finally, studies have focused on different trustors who granted trust decisions to educational institutions, including the general public (Goepel, 2012; Gray, Weir, 2014), parents (Eng et al., 2014; Santiago et al., 2016), students (Carvalho, de Oliveira Mota, 2010; Romero, 2015), instructors (Hoppes, Holley, 2013; Wilson, 2011; Zayim, Kondakci, 2015), and administrators and non-academic staff (Rahman et al., 2015).

### **2.2. Trust-building Factors**

Different studies have identified the various factors that contribute to building trust in educational institutions or systems. For example, White-Cooper et al., (2009) found that building interpersonal relationships is an important factor for forming educational trust. Stensaker and Harvey (2013), in studying higher education in 19 countries, concluded that the tight relationship between accountability and quality assurance and accreditation is a major factor in building educational trust. Claes and Hooghe's (2017) study on Belgium demonstrated that citizenship education contributes to building trust in general and political trust in particular. Simpson and Baird (2013) showed that the credibility of public examinations (e.g., A-level examinations in England), as perceived by key stakeholders, is another factor in forming educational trust.

Cross-national studies of trust in ESs or institutions are rare. Czerniawski (2011) examined trust in accountability and teaching by focusing on the experiences of 32 new teachers in Norway, Germany, and England. Stensaker and Maassen (2015) investigated quality assurance as a mechanism for creating more trust in cross-national higher educational institutions.

### **2.3. Literature Gaps in Relation to the Present Study**

Previous studies have examined trust within one area or part of an educational institution at a time. It is concluded that "few studies ... explicitly address trust in the education system"

(Bormann, John, 2014: 2). The present study expands the approach to cover most components or parts of an ES. Previous studies used one stage to collect data and one research method, either qualitative or quantitative, whereas the present study uses two data-collection stages and a mixed-methods approach to deepen understanding of trust in educational institutions. Finally, teacher educators have not been previously studied as trustors or participants in relation to the phenomenon under investigation.

### **3. Research Problem**

Trust in any ES can exist from the perspective of either the beneficiaries (e.g., public, parents, students, job market officials) or the providers (e.g., educational policymakers, administrators, curriculum designers, teachers, teacher educators). One area that requires investigation is what trust in an ES looks like from a teacher educator's perspective. It is assumed that implicit (internal) beliefs or attitudes (factors) plays a significant role in establishing trust in any ES, but these factors need to be described and explored because they have not been examined before. Furthermore, it is important to understand why some ESs generate a higher level of trust than others.

This study selected four cross-national ESs: the US, UK, the Arab world (AW), and the Gulf countries (GC). It aimed to determine the location (place) of teacher educators' highest trust (first choice of trust) toward any of the four ESs, and the unidentified factors (reasons) that played a significant role in establishing this trust.

Why these four systems?

These educational systems were selected because the participants have lived, studied, trained, and developed in them. Furthermore, participants are familiar with them and have been exposed to their different educational policies and practices, and various entities, groups, associations, and individuals therein. Participants have attended these systems' conferences, workshops, and other educational activities. They are members of educational associations within the systems, and continually use their educational resources for teaching, research, and professional development. Finally, many participants' graduate students continue their education in the UK or US; no other African, Asian, Australian, Canadian, or European systems were selected because the participants lack familiarity with them.

#### **3.1. Significance of the Study**

Tschannen-Moran (2014) indicated the importance of studying trust in schools and ESs by acknowledging that trust enhances relationships, facilitates communication, and expands work energy. It thereby enhances productivity, performance, and goal accomplishment; prevents disagreements; and fosters student achievement.

To our knowledge, this study is the first to measure participants' degree/level of trust in Western (US and UK) and Arabic (AW and GC) ESs. Therefore, this study augments the literature on trust in ESs. Policymakers and leaders in the educational field, organizations, and institutions will benefit from better understanding factors that shape trust and applying them to their ES components to ensure stakeholders' trust. Additionally, they can encourage students to further their studies in trustworthy system(s). Finally, this study's results will help identify which ES(s) mainly affect, inspire, or guide Kuwaiti teacher educators' educational thinking and practice.

#### **3.2. Purpose of the Study**

The purpose of this cross-national, two-phase, sequential mixed-methods study is to identify the trust level of teacher educators of the College of Education at Kuwait University toward the ES and to identify the factors involved in building or developing trust in an ES. The purpose here is not to measure the quality of any educational system presented in this study, but to identify how and why participants build their educational trust towards these systems.

#### **3.3. Operational Definitions of the Study Terms**

- Educational System: A set of connected components of professions, types, resources, schools, institutions, departments, and associations of education that form a complex whole.
- Trust: A positive attitude and belief in the quality, effectiveness, integrity, and fairness of an ES or one of its components.



- Arab World: All Arab countries in Asia and Africa, excluding the GC.
- Gulf Countries: The six countries of the Cooperation Council of the Arab States of the Gulf – namely, Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.

### **3.4. Research Questions**

#### **Phase One: Quantitative Research Questions**

The main question of the quantitative phase is: Among the given ESs (US, UK, AW, GC), in which one do study participants place their highest trust? Four research questions were derived from the main question:

In which ES do participants place their highest trust regarding (1) education professionals, (2) educational departments, institutions, and associations, (3) educational types, and (4) educational knowledge resources?

Q5. Is the selection of the most trusted educational system related to whether the teacher educator is male or female? This question will be answered by testing the following null hypothesis: there is no association (relation) between selection of the most trusted educational system and the teacher educator's gender.

Q6. Is the selection of the most trusted educational system related to whether the teacher educator received his/her high education degree from US, UK, or other location? This question will be answered by testing the following null hypothesis: there is no association (relation) between selection of the most trusted educational system and the teacher educator's degree location.

Q7. Is the selection of the most trusted educational system related to whether the teacher educator is a professor, associate professor, assistant professor, or teacher assistant? This question will be answered by testing the following null hypothesis: there is no association (relation) between selection of the most trusted educational system and the teacher educator's academic rank.

#### **Phase Two: Qualitative Research Question**

The qualitative phase was intended to follow up participants' responses to explain and interpret the quantitative-phase results. Therefore, one research question directed the qualitative phase: "What factors influence the level of trust in any ES?"

#### **Mixed-methods Question**

How does the information obtained from participants assist in explaining the factors that influence the establishment and level of trust?

## **4. Methodology**

### **4.1. Research Design**

An explanatory sequential mixed-methods design was used to address the difficulty of measuring trust. In a two-phase project, "the researcher collects quantitative data in the first phase, analyzes the results, and then uses the results to plan (or build on) the second, qualitative phase" (Creswell, 2014: 224). In this study, therefore, we purposively selected the participants and constructed the question types from the quantitative survey results to conduct follow-up qualitative focus-group interviews, which were analyzed to help understand the initial quantitative results. In this study design, the emphasis was on the second (qualitative) phase.

In the Results and Discussion sections, we integrate and explain the findings of both phases, and extend the qualitative findings to enhance understanding of the study.

### **4.2. Phase One: Quantitative Methods**

#### **4.2.1. Population.**

The study population consisted of all faculty members of the College of Education (i.e., teacher educators) at Kuwait University who were present during the first semester of the 2017–2018 academic year, resulting in 95 participants. No sampling procedures were used due to the small population number. Therefore, the study was conducted on the entire population.

Teacher educators were selected as a target population for several reasons. First, teacher educators usually hold doctorate degrees and are considered highly educated. According to Hollis (1998), highly educated individuals probably have more access to diverse networks, which assists them in making appropriate trust decisions. Second, Borgonovi and Burns (2015) indicated that

highly educated individuals have a greater sense of autonomy and self-efficacy, which can enable them to express their objective judgments freely and without pressure. Finally, teacher educators are experienced specialists in education, making them the most qualified and suitable participants for this study's purpose.

#### 4.2.2. Quantitative instrument.

After reviewing the literature and theoretical framework of ES components, and relating them to the current study's purpose, we designed and built a questionnaire comprising 24 items organized into four sections: (a) education professionals (seven items); (b) educational departments, institutions, and associations (four items); (c) educational types (nine items); and (d) educational knowledge resources (four items). A nominal scale of four alternatives was used to record participants' responses. Each participant selected one ES (US, UK, AW, or GC) that he/she perceived as the most trusted alternative system.

#### 4.2.3. Validity and reliability of the quantitative instrument.

Instrument validity was established by utilizing an expert panel. Five faculty members from the College of Education reviewed the questionnaire content and format in light of the study's purpose. Minor changes were made to the instrument based on panel members' suggestions.

Reliability was determined by using the test-retest reliability coefficients. Ten people from this study's actual population participated in the pilot study. The survey was applied twice, with a two-week gap between the two applications. The scores were collected and analyzed, and Pearson's correlation for all instrument items was  $r = .97$ , indicating high reliability.

#### 4.2.4. Quantitative data collection and analysis.

All population members ( $n = 95$ ) received a copy of the questionnaire during the first semester of the 2017–2018 academic year. The return rate was 85 instruments (89.5 %). Returned instruments were classified according to the independent variables (see Table 1). Descriptive statistics, frequencies, and percentages were used to analyze and rank the data. Also, the Freeman–Halton extension of Fisher Exact probability Test was used to test the current research hypotheses.

**Table 1.** Study participants

Variable	Category	N	%
Gender	Male	47	55.3
	Female	38	44.7
Total		85	100
Degree Place	UK	19	22.4
	US	53	62.4
	Other	13	15.3
Total		85	100
Rank	Professor	14	16.5
	Associate professor	24	28.2
	Assistant professor	34	40.0
	Teacher assistant	13	15.3
Total		85	100

### 4.3. Phase Two: Qualitative Methods

**4.3.1. Selection and profile of participants.** Considering the similarities and differences in results produced during the first phase, and the study's aim, we divided the participants into three main groups:

**Group 1.** Six participants (four male and two female teacher educators who graduated from American universities) placed 100 % of their highest trust in the US ES. They included one professor, one associate professor, and four assistant professors.



**Group 2.** Six participants (three male and three female teacher educators who had graduated from UK universities) placed more than 50 % of their highest trust in the UK ES, with the rest of their highest trust distributed among other systems (US, AW, and GC). This group comprised two associate professors and four assistant professors.

**Group 3.** Six participants (one male and five female teacher educators) granted their highest trust to a range of 6–15 research instrument items linked to the GC ES. The group comprised one associate and two assistant professors who had graduated from UK universities, and three teacher assistants who had graduated from Kuwait University.

**4.3.2. Qualitative data collection: Focus-group interviews (FGIs).** Three focus-group interviews were held to collect data and insights to interpret the previously gathered quantitative findings. Wilkinson and Birmingham (2003) emphasized that what makes focus-group interviews are valuable for their reflection of participants' experiences, attitudes, perspectives, and assumptions, and their encouragement of interaction among participants during each interview, which provides opportunities to generate rich descriptive data and more insights.

**4.3.3. Qualitative data analysis.** Data collected from the three groups were analyzed separately, and further analysis identified similarities and differences among the three groups. The same analysis steps were used for all groups:

- Reading all data to get a sense thereof.
- Analyzing data and dividing it into segments, with each representing similar thoughts, attitudes, and experiences of participants.
- Organizing segments into topics.
- Compiling topics into themes.
- Reporting themes.
- Conducting further analysis of stated themes to identify similarities and differences among the three groups and remove any redundancies.

**4.3.4. Validity and trustworthiness of results.** Member checking was used as a validity strategy to check the accuracy of the findings and our interpretation. Two members of each group were contacted and presented with a written summary of our understanding of their inputs during FGIs to verify the credibility of data and seek participants' agreement with our interpretation.

## 5. Results

### 5.1. Phase One: Quantitative Results

Overall results for all survey items showed that most participants (average of 71.7 %,  $n = 61$  out of the total  $n = 85$ ) placed their highest trust in the US ES, followed by the UK ES (average of 21.1 %,  $n = 18$ ), GC ES (average of 4.7 %,  $n = 4$ ), and AW ES (average of 2.5 %,  $n = 2$ ). The results are organized, ranked, and presented in Tables 2–5 (each table represents one research question). Notable results only are briefly described.

Q1. In which ES do participants place their highest trust regarding education professionals?

**Table 2.** Teacher educators' trust in education professionals

Items	US		UK		AW		GC	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
I place my highest trust in instructional designers from	69	81.2	11	12.9	2	2.4	3	3.5
I place my highest trust in curriculum developers from	67	78.8	12	14.1	4	4.7	2	2.4
I place my highest trust in university professors from	59	69.4	13	15.3	7	8.2	6	7.1
I place my highest trust in educational researchers from	57	67.1	19	22.4	6	7.1	3	3.5
I place my highest trust in teachers from	52	61.2	17	20.0	9	10.6	7	8.2
I place my highest trust in school counselors from	51	60.0	11	12.9	11	12.9	12	14.1
I place my highest trust in school managers from	48	56.5	24	28.2	5	5.9	8	9.4

As shown in Table 2, most participants placed their highest trust in education professionals from the US ES. The highest and lowest trust within the US system went to instructional designers (81.2 %) and school managers (56.5 %), respectively.

**Q2.** In which ES do participants place their highest trust regarding educational departments, institutions, and associations?

**Table 3.** Teacher educators’ trust in educational departments, institutions, and associations

<i>Items</i>	US		UK		AW		GC	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
I place my highest trust in universities from	71	83.5	13	15.3	0	0.0	1	1.2
I place my highest trust in educational associations from	69	81.2	14	16.5	2	2.4	0	0.0
I place my highest trust in teacher educational institutions from	66	77.6	13	15.3	3	3.5	3	3.5
I place my highest trust in departments of education from	51	60.0	28	32.9	2	2.4	4	4.7

Table 3 shows that universities from the US ES received highest trust (83.5 %), whereas universities from AW did not attract any participants’ highest trust (0 %). The US educational associations were also most participants’ first choice for trust (81.2 %), and this element in the GC ES received 0 % of participants’ choice of trust.

**Q3.** In which ES do participants place their highest trust regarding educational types?

**Table 4.** Teacher educators’ trust in educational types

<i>Items</i>	US		UK		AW		GC	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
I place my highest trust in technology education from	78	91.8	7	8.2	0	0.0	0	0.0
I place my highest trust in special education from	69	81.2	15	17.6	1	1.2	0	0.0
I place my highest trust in physical education from	69	81.2	14	16.5	2	2.4	0	0.0
I place my highest trust in vocational education from	69	81.2	13	15.3	2	2.4	1	1.2
I place my highest trust in health education from	65	76.5	20	23.5	0	0.0	0	0.0
I place my highest trust in art education from	63	74.1	19	22.4	3	3.5	0	0.0
I place my highest trust in business education from	63	74.1	20	23.5	1	1.2	1	1.2
I place my highest trust in politics education from	56	65.9	22	25.9	4	4.7	3	3.5
I place my highest trust in citizenship education from	45	52.9	11	12.9	4	4.7	25	29.5

As seen in Table 4, the AW and GC ESs did not attract any participants’ highest trust for their technology and health education. Instead, the technology education of the US ES attracted the highest trust of most participants (91.8 %, n = 78). The UK ES received highest trust from a moderate number of participants (23.5 %, n = 20) in health education and business education.

**Q4.** In which ES do participants place their highest trust regarding educational knowledge resources?

**Table 5.** Teacher educators’ trust in educational knowledge resources

Items	US		UK		AW		GC	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
I place my highest trust in educational conferences from	78	91.8	7	8.2	0	0.0	0	0.0
I place my highest trust in educational websites from	78	91.8	5	5.9	2	2.4	0	0.0
I place my highest trust in educational journals from	75	88.2	8	9.4	2	2.4	0	0.0
I place my highest trust in educational books from	70	82.4	13	15.3	2	2.4	0	0.0

As shown in Table 5, the US ES garnered 91.8 % of participants’ highest trust for its educational conferences as a source of educational knowledge. Meanwhile, the GC ES attracted 0 % of participants’ highest trust for educational knowledge resources, such as educational conferences, websites, journals, and books.

Analysis for research questions five to seven done by using Freeman –Halton extension of the Fisher Exact probability Test instead of the Chi Squair Test because it is more suitable for analyzing current research data of using contingency (crosstabs) tables larger than 2X2 and more than one cell in these tables have small expected frequency count of five or less (see Cochran’s Rule).

Findings Related to the Fifth Research Question

A two-way Freeman–Halton extension of the Fisher exact probability test for four-rows by a two-column contingency table was conducted to evaluate the null hypothesis that the variable of selection of the most trusted educational system was independent of the variable of the teacher educator’s gender. Findings showed that the test was statistically significant, p value = .005 at Alpha level .05. The null hypothesis was rejected and concludes that at the 5 % level, there is a significant association between the two variables, and they are not independent. Because the test result was significant, standardized residuals were calculated to know more about the association between the two variables. Table 6 presents a summary of the results for question five.

**Table 6.** Trusted System and Gender Crosstabulation\*

			Sex		
			Male	Female	Total
Trusted System	USA	Count	40	21	61
		Expected Count	33.7	27.3	61.0
		Standardized Residual	1.1	-1.2	
	UK	Count	5	13	18
		Expected Count	10.0	8.0	18.0
		Standardized Residual	-1.6	1.7	
	AW	Count	0	2	2
		Expected Count	1.1	.9	2.0
		Standardized Residual	-1.1	1.2	
	GC	Count	2	2	4
		Expected Count	2.2	1.8	4.0
		Standardized Residual	-1	.2	
Total	Count	47	38	85	
	Expected Count	47.0	38.0	85.0	

\*Fisher’s Exact Test: Exact Sig. (2-sided) = .005. p < .05, two-tailed

As shown in Table 6, none of the residuals are significant because they are not greater than 2 or less than -2. However, there were four positive and four negative values. This means that if we assume that there is no association between the two variables, the male teacher educators are more likely to select the US educational system as their first trusted system, but the significance is low (residual = 1.1). On the other hand, they are less likely to select the UK, AW, or GC educational systems as their first trusted system because the residuals values are negative and small (-1.6, -1.1, -.1, respectively). Alternatively, the female teacher educators are more likely to select the UK, AW, GC, and GC educational systems as their trusted educational systems because residuals were positive (1.7, 1.2, .2) respectively, but the significance is low. On the other hand, they are less likely to select the US education system as their first choice because the residual is negative (-1.2), but the significance is small (less than -2).

Findings Related to the Sixth Research Question

A two-way Freeman–Halton extension of the Fisher exact probability test for four-rows by a three-column contingency table was conducted to evaluate the null hypothesis that the variable of selection of the most trusted educational system was independent of the variable of the teacher educator’s degree location. Findings showed that the test was statistically significant, probability value = .0004 at Alpha level .05. Therefore, the null hypothesis was rejected, indicating that the two variables were not independent. Because the test result was significant, standardized residuals were calculated to understand the association between the two variables. Table 7 presents a summary of results for question five.

**Table 7.** Trusted System and Degree Place Crosstabulation\*

			Degree Place			
			US	UK	Other	Total
Trusted System	USA	Count	46	10	5	61
		Expected Count	38.0	13.6	9.3	61.0
		Standardized Residual	1.3	-1.0	-1.4	
	UK	Count	5	8	5	18
		Expected Count	11.2	4.0	2.8	18.0
		Standardized Residual	-1.9	2.0	1.4	
	AW	Count	1	0	1	2
		Expected Count	1.2	.4	.3	2.0
		Standardized Residual	-.2	-.7	1.3	
	GC	Count	1	1	2	4
		Expected Count	2.5	.9	.6	4.0
		Standardized Residual	-.9	.1	1.8	
Total	Count	53	19	13	85	
	Expected Count	53.0	19.0	13.0	85.0	

**\*Fisher’s Exact Test: Exact Sig. (2-sided) = .0004. p < .05, two-tailed.**

It can be concluded from the residuals values in Table 7 that if there was no association between the two variables (trusted educational system and degree place), then:

Teacher educators who received their degree from the US were more likely to select the US educational system as their first trusted system (residual = 1.3) and less likely to select the UK, AW, and GC systems (residuals = -1.9, -.2, -.9, respectively).

Teacher educators who are UK degree holders were more likely to select the UK (residual = 2) and GC (residual = .1) educational systems as their first trusted systems and less likely to select the US (residual = -1.0) and AW (residual = -.7) educational systems.

Teacher educators who received their degrees from other places (other than the US and UK) were more likely to select UK, AW, and GC as their first trusted educational systems (residuals = 1.4, 1.3, 1.8, respectively) and less likely to select the US educational system (residual = -1.4).

**Findings Related to the Seventh Research Question**

A two-way Freeman–Halton extension of the Fisher exact probability test for four-rows by a four-column contingency table was conducted to evaluate the null hypothesis that the variable of selection of the most trusted educational system was independent of the variable of the teacher educator’s rank. The findings showed that the test was not statistically significant, p value = .307 at Alpha level .05. Therefore, the test didn’t provide evidence to reject the null hypothesis. Because the test result was not significant, no standardized residuals were calculated. Table 8 presents a summary of the results for question five.

**Table 8.** Trusted System and Rank Crosstabulation\*

			Teacher Educator Rank				
			Professor	Associate	Assistant	T.A.	Total
Trusted System	USA	Count	10	16	28	7	61
		Expected Count	10.0	17.2	24.4	9.3	61.0
	UK	Count	2	7	5	4	18
		Expected Count	3.0	5.1	7.2	2.8	18.0
	AW	Count	1	0	0	1	2
		Expected Count	.3	.6	.8	.3	2.0
	GC	Count	1	1	1	1	4
		Expected Count	.7	1.1	1.6	.6	4.0
Total	Count		14	24	34	13	85
	Expected Count		14.0	24.0	34.0	13.0	85.0

\*Fisher’s Exact Test: Exact Sig. (2-sided) = .307. p > .05, two-tailed.

**5.2.Phase Two – Qualitative Results**

The qualitative phase of the study revealed 15 themes for Group 1, six themes for Group 2, and two themes for Group 3. Quotations from participants are shown in italics.

**5.2.1. Group 1**

**1) Based on standards.** When participants were asked about the factors that encouraged them to select the US ES as their first choice to trust, two members referred to it as being organized around standards, which made the system trustworthy in their view. The remaining group members agreed with this view.

*“The American [ES] is built around actual standards, not like the [AW ESs] where standards—if any—are pretended or only written on documents but not applied to actual situations.”*

**2) Richness and high-quality educational resources.** The focus-group members declared that their trust in the American ES was shaped largely by the quality and quantity of educational journals, books, conferences, and websites in the US.

*“I rely on American academic books and journals due to the big effort used to write them, the up-to-date information, the direct language, the documentation, topic variation, and good organization.”*

*“I attended many educational conferences in different countries—I never found better than American conferences.” A third interviewee stated: “If you are looking for rich, well-organized, and up-to-date educational information, documentation, and video/audio clips from the Internet, you should go first to the American sites.”*

**3) Advancement of the country.** During the interview, participants discussed how a country's advancement leads to advancement of its ES.

*"Advancements in the US economy, industry, technology, health, communication, democratic practice, business, public services, and social organization work provide a solid ground for advancements in the American [ES], which in turn has led to it becoming a trustworthy system."*

**4) Reputation.** The good reputation of US education, especially in higher-education and graduate-level studies, is evident to other countries' publics, as noted by the interviewees. They also noted that people and many governments send students to the US at their own expense or on scholarships to continue their education. Likewise, the participants claimed that the strong media machine of the US pushed this reputation locally and internationally.

*"I know people who plan to send their children to a US university after finishing secondary school never travel to the US—they depend only on the university's reputation."*

**5) Advancement of higher-education institutions and universities.** The participants expressed this advancement through their discussion, attitudes, and agreement.

*"American higher-education institutions and universities exist in a large number, offer multiple and diverse majors and specializations, initiate genuine and scientific ideas, lead as a major source of change, and provide lots of variety in counseling and guidance for their national and international students."*

**6) Adaptability and flexibility.** The participants believed that although the US ES is based on principles and rules, it is flexible, especially with exceptional individual cases. This adaptability is evident in public schools and universities.

*"The [American elementary school] evaluated my child's level of English and put him in a special class with attentive teaching and activities. After a few months, my boy was placed with his American classmates in the same grade."*

*"With the assistance of my advisor, I was able to tailor a special master's and doctorate program that fulfills my goals and needs."*

**7) Technology.**

*"If you really want to learn about technology in general and educational technology, you should go to the US."*

When a participant made this statement, the remainder nodded in agreement. The participants also explained how special conferences in the US updated their awareness of technology uses in education and teaching.

*"A colleague and I attended two conferences recently in the US, and we learned about utilizing educational applications and other programs, which benefited us in our teaching and interaction with our students."*

The availability of many distance and online educational programs at secondary, undergraduate, and graduate levels was another reason participants trusted the American ES first.

**8) Graduates.** The participants believed that quality graduates are essential for determining the trust level of any ES. They described the graduate characteristics of the American ES, especially at the higher-education level, as follows: knowledgeable, skillful, adaptable to new situations, lifelong learner, ready for the job market, researcher, critical and creative thinker, up to date, open minded, responsible, self-confident, open to other cultures, daring, possessing positive values, own practical and social experiences, and trustworthy.

*"A graduate from a US college usually owns the ability to deal with how questions."*

*"If I have a choice to choose teachers for my children, I will choose those who graduated from an American university."*

**9) Respecting cultural diversity.** The participants reflected on their experiences by indicating that they were treated with equality and respect from the faculty, staff, administrators, and other national and international students in American colleges and universities, regardless of their different cultures, races, languages, customs, and religions.

*"I felt at the beginning when I attended classes that I was different, and I would be alienated; a few months later this feeling dissolved and I immersed myself in college and community life without any negative feelings or thoughts."*

Some participants with children in American public schools reported that their children were not exposed to any bias or mistreatment due to their names, traditions, or origins.

**10) Developing individual responsibility.** Participants indicated that most faculty members during their study in the US encouraged them to develop their individuality and take initiative and present their points of view even if they were unusual or different.

*“Whenever new ideas or a theory of learning is presented, the professor always asks me for my opinion. This type of interaction made me a critical reader and implanted confidence in me.”*

*“The American way of education did not aim to dissolve me into a predefined entity or feed me ideas that I am not convinced of.”*

**11) Accreditation.** Another main reason for participants identifying trust in the American ES is the accreditation system used for post-secondary institutions and grade schools.

*“[Before joining a US graduate school] I was told to get an acceptance from an accredited university and the accreditations needed to be valid and from a reliable accreditor.”*

In general, participants felt that trust in any school, college, or program of study is strongly associated with accreditation by a reputable agency.

*“It, in short, means that American schools and universities are held accountable for offering a quality education and are under continuous evaluation.”*

**12) Specialized professional associations.** The participants acknowledged that the American ES owes its high quality and trustworthiness to the availability of an enormous number of non-governmental, non-profit, educational associations and organizations for every field of study, category of education professional, educational level, and educational type.

*“Standards and goals for each area of study and profession are created and developed in these professional associations and sent to whom it may concern to improve education in the US.”*

*“I joined a professional association in my field to broaden my contacts with international colleagues, to be aware of new research and updated practice, and to advance my teaching skills.”*

**13) Mutual respect and trust.** Participants expressed their admiration for and trust in the US ES because of the widespread mutual respect and trust between teachers and parents, professors and their students, and administrators and their staff. Interviewees cited parent-teacher associations in American schools as an example. Participants also identified this phenomenon in higher-education institutions.

*“Professors leave the classroom and students continue the work due to mutual trust.”*

**14) Fair assessment.** Participants regarded the US ES as trustworthy due to its objectivity and performance-based assessment practices. They commented that the assessment used in American schools and colleges is not limited to written summative exams, and that, unlike other ESs where the focus is on standardized testing or on perceiving exams and tests as synonymous to assessment, the US ES uses a variety of approaches and opportunities for learners to be assessed more accurately and objectively.

*“In our local system, the fate of the student depends on one or two midterm tests and a final exam.”*

**15) Insignificant effects of politics.** Participants stated that any ES not influenced largely or directly by politics is worthy of their first choice of trust. They believed that American politics only minimally affects its ES; therefore, the US ES received their trust. One participant identified a contrary case:

*“The Arab world’s ES is not independent politically to build its educational policies, programs, and curriculum. Consequently, it will receive my lower level of trust.”*

### 5.2.2. Group 2

**1) Discipline.** The second group of participants regarded discipline as one of the strongest features of the UK ES. They illustrated that punctuality, respecting assigned dates, abiding by rules and regulations, respecting school dress codes, and acting respectfully are common outcomes of the UK’s schools and colleges.

**2) Learner-based education.** According to the participants, UK post-secondary education develops learning ability and makes acquiring knowledge the students’ business.

*“Our professor provides us with main outlines and some guiding steps. It is our duty to search for detailed knowledge and application examples.”*

**3) Bachelor’s degrees.** Participants referred to UK bachelor studies as a sign of the system’s strength. They explained that UK bachelor education includes early emphasis on subject



specialization, making the program more related to a student's field of study, providing graduates with more relevant and applicable knowledge, and preparing them for the workplace. One interviewee with an English major said:

*"I was an admirer of my professor's deep knowledge of English linguistics, and in one informal meeting I asked him about his ability. He smiled and said it is the foundation of the bachelor program."*

**4) Examination.** Participants commented that tests and exams in UK schools are organized, well-constructed, and based on curriculum standards.

*"Two of my children are in a British secondary school in Kuwait, and they are tested every month on the curriculum materials that they actually study."*

Participants added that the UK ES's use of well-constructed tests and standardized entrance and exit exams at secondary and college levels is reflected in students' improved learning, and that these tests and exams provide reliable assessment means, leading to better education that can be trusted.

**5) Multiculturalism.** Participants noted that the widespread participation of international students, staff, teacher assistants, and faculty members is a clear feature in UK schools and universities. They specified that UK grade schools always welcomed and treated all new students from other countries equally. A participant revealed:

*"When I moved with my family to the UK to continue my postgraduate study, my daughter, who was in third grade, came to me one day and told me, 'Everyone in my school is nice, and no one stares at me.'"*

Participants added that when international students attend UK schools or higher-education institutions they do not feel alienated, and their customs, traditions, and religious beliefs are respected.

**6) Advisement.** As noted by participants, advisement is everywhere in UK educational institutions. It occurs in schools through teachers and counselors.

*"My son's secondary-school teachers step out of their comfort zone and offer extra help and advice to build students' knowledge and self-esteem to reach their goals."*

*"Special staff are usually available in my college library from 8 am to 4 pm daily to offer their advice in how to use appropriate academic English language in research papers and dissertations." Participants also remarked on the availability of many free workshops for secondary and college students focusing on various abilities and skills.*

### 5.2.3. Group 3

**1) National instructors for certain subjects.** The participants clarified that faculty members and teachers of subjects like Arabic language, social studies, and Islamic philosophy and education from GC ES are more trustworthy. They explained that these national teachers and professors are usually more aware of the course content and materials, more attached emotionally, and more eager to teach these subjects because they reflect their own cultural elements.

*"My son was taught social studies in the seventh grade by a foreign teacher, and by a national teacher in the eighth grade; the difference was clear in my son's attitude and knowledge in favor of the national teacher."*

**2) Citizenship education.** The focus-group participants specified that when it came to implanting citizenship principles in students, they trusted the local or national curriculum and programs first. They perceived the GC ES as the most appropriate to educate nationals about citizenship because it is the most related to them. One participant elaborated:

*"Even if we can borrow some methods and techniques from other advanced educational systems for many types of our educational programs, we cannot, and we should not, import citizenship education from other educational systems."*

Furthermore, participants declared that the formal curriculum in social studies and civic classes, and extracurricular activities related to public and national occasions such as presentations, theatrical shows, drawings, national songs, video displays, and exhibitions, are used to develop and enhance citizenship in GC students.

## **6. Discussion**

In regard to the first phase of this study, it can be concluded from the quantitative data, statistical values, and hypotheses testing that the current study participants have a tendency to more positively rate the educational systems in which they received their higher academic studies. This phenomenon was more noticeable in the graduates of the US educational system more than other participants. This may be because they are affected by the influence of the capacity of the US system and its spread. Another study may be required to discover other reasons. Also, from the statistical results, it can be implied that female participants are more likely than males to place their trust in other educational systems - in addition to the US system. Moreover, it is noticeable that male teacher educators placed their trust in the US educational system more than the females. A research study is required to determine the reasons for this finding. Furthermore, statistically, the factor of academic rank (e.g., professors, associate professors, assistant professors, or assistant teachers) of the participants in this study did not have any effect on their trust selection toward any educational system as indicated by the non-significance of the test result used to explore this matter.

The rest of this section addresses the mixed-methods approach of the study. We discuss the results from surveys regarding the themes elicited from the focus groups to enhance understanding of where and why teacher educators give a certain ES their priority trust. Our approach involves integrating phase one results with corresponding phase two results. We then provide explanations for the integrated results, while also relating our results to the findings of previous research.

### **6.1. Factors of Trust in Education Professions**

Our findings indicate that several direct factors play a role in forming trust in instructional designers, curriculum developers, university professors, educational researchers, school teachers, school counselors, and school managers.

First, when these professions rely on high standards, they have the foundation needed to produce well-qualified education professionals. This result agrees with Stensaker and Maassen's (2015) general findings that quality assurance is used as a mechanism for creating trust in higher-education institutions.

Second, accreditation processes and accredited institutions produce better graduates or education professionals, consistent with Stensaker and Harvey's (2013) finding of a strong relationship between accreditation and building educational trust in higher education. Third, the availability of a high quantity and quality of educational resources provides better preparation for education professionals. Fourth, various professional education associations contribute to developing and improving these professions. Fifth, mutual respect and trust among education professionals and their students, staff, or beneficiaries positively impacts earning someone's highest trust in education professionals. Similarly, White-Cooper et al. (2009) demonstrated that forming interpersonal relationships is a major factor for constructing educational trust.

All these factors, according to participants, were available in the US ES. This explains why these professions within the US system received 68 % (n = 58) of participants' highest trust, on average. Among educational professions, teaching stands out in the process of trusting any ES. This observation concurs with Czerniawski's (2011) finding that qualified teachers are needed to build trust. In the UK, school managers received some participants' highest trust (average of 28 %; n = 24) due to the belief that these managers are well qualified and their administrative performance is outstanding. Furthermore, national teachers for subjects like Arabic language, social studies, and religious education received the highest trust from several AW and GC participants (9.4 %; n = 16), who commented that these subjects require national teachers who share the local culture. The remaining participants perceived trust in teachers from the angle of teachers' quality preparation and teaching skills.

### **6.2. Factors of Trust in Institutions and Associations of Education**

Probably one reason behind trust in educational institutions is the country's advancement, which positively reflects on these institutions. Another reason is the advancement of higher-education universities and colleges, which are characterized by their large scale, multiple majors, good reputation and publicity, integrity, role as change agents, and embodiment of genuine scientific ideas. Additionally, instructors' and administrators' humane, just, and caring behavior

toward students enhances trust in these institutions. Indeed, 83 % of participants agreed on these factors and selected the US ES to represent them. Teacher-education institutions in the US are integral parts of these universities and share similar characteristics. Therefore, 77.6 % of participants felt reassured by their present studies in these colleges or schools of education.

Universities in the AW ES received none of the participants' highest trust. This is likely due to the use of traditional methods and policies. This cause supported by studies conducted by Shaaban (2017) and Khaled (2014). Further studies needed to identify other causes.

Professional educational associations or organizations actively cover most educational fields, professions, types, and levels of education, suggesting why they are trusted. These bodies and their activities are likely to encourage individuals to construct their trust in any ES. However, once again, GC educational associations received 0 % of participants' highest trust; this could be due to the low number of these associations.

Regarding departments of education, participants gave their highest trust to the US or UK ESs but did not elaborate on their experiences with these departments—perhaps because they are not in direct contact with them.

### **6.3. Factors of Trust in Types of Education**

More than half of participants showed their highest trust in nine types of education in the US system: technology, special, physical, vocational, health, art, business, politics, and citizenship education. Trust in these education types in the UK ES ranked second, except citizenship education, which ranked third. The greater trust in these types of education in the US and UK systems referred generally to most of the factors presented by participants in the second phase of this study. However, more specific reasons for this phenomenon are: the advancement of the US and UK, where these education types are perceived as essential; use of scientific method and thinking; advanced technology; development of individual responsibility; and a focus on learner-based education. Furthermore, their accountability and accreditation processes lead to educational quality. The latter result matched the findings of Stensaker and Harvey (2013) and Stensaker and Maassen (2015), who emphasized the importance of accountability and accreditation processes in educational trust construction.

Worth noting here is trust in the GC ES toward citizenship education, which ranked second after the US system: 29.4 % ( $n = 25$ ) of participants gave their highest trust to the GC system. This result matched similar findings in a study on Belgium (Claes, Hooghe, 2017), which indicated that local citizenship education plays a significant role in trust. Participants in our study seemed to perceive citizenship education as a special kind of education connected to their country and region. Osler and Starky (2005) discussed how citizenship is experienced as a feeling of belonging to a community. Most participants in our study were Gulf citizens living in Kuwait. Some might have perceived citizenship education from the content angle, believing this content should be delivered by national teachers and reflect the local culture. However, other Kuwaiti participants who selected the US ES (52.9 %;  $n = 45$ ) for their highest trust probably considered citizenship education from the angle of teaching and learning methods, techniques, activities, and strategies.

### **6.4. Factors of Trust in Educational Knowledge Resources**

Educational knowledge resources in this study consisted of educational conferences, websites, journals, and books. None of the participants gave the GC their highest trust for all items, and only two gave the AW their highest trust. This can be explained by comparing the four educational knowledge resources of the US/UK systems to GC/AW systems.

The limitations of educational conferences in the GC/AW systems are due to only a very few conferences being held annually. This observation is in line with Alnaif's (2014) study. Current study participants also indicated that most US higher-education institutions or universities likely consider their websites as instruments of education that reflect the state and advancement of education. Conversely, these participants have a different view of the websites of GC/AW higher-education institutions or universities. The previous assumption is consistent with the findings of a study conducted by Al-Salem (2012). In addition, further studies are needed to determine the underlying causes of this difference.

Most educational journals and research periodicals in the GC/AW ESs are general in nature, with few specializing in a level or type of education. Unlike Western journals, periodicals in the

GC/AW that focus on one topic are few. These reasons may have contributed to the fact that no participants in our study selected GC/AW journals as their first choice. Geagea's (2014) study provided agreement for the preceding discussion.

Furthermore, there is a clear difference between the quality of US/UK college textbooks and many textbooks (especially humanities and social sciences) used in GC/AW universities. This could be due to a failure to apply the criteria for quality of authorship and production for these books. Both Khalifa (2008) and Albaredi (2012) supported this explanation.

## **7. Conclusion**

In conclusion, our findings indicate that teacher educators' development of trust in ESs is a multi-factor, multi-step process. First, this trust building is affected by the location or country of their high education as inferred by the qualitative and quantitative data as well as the hypotheses testing in the current study. Second, this trust development is largely based on two integrated factors: cognitive and emotional. This finding concurs with similar results in earlier studies on organizational and institutional trust (Bachmann et al., 2015; Lamsa, Pucetaite, 2006; Schoorman et al., 2007).

This study finds that developing teacher educators' trust in ESs consists of the following integrated steps (mechanism):

Teacher educators:

1. generate thoughts and rationales of certain criteria or features associated with trustworthy ESs (cognitive factors);
2. affirm the existence and application of prior criteria or features in the ESs under examination (cognitive factors); and
3. establish positive emotions or attitudes toward the ES due to their positive interaction with different individuals and components of that system (emotional factors).

Some criteria might be categorized under more than one factor.

This study's findings are limited by the sample—namely, teacher educators (trustor). Other studies may reveal different factors of trust development in ESs. Additionally, as trust development in this study is directed toward ESs, the trust-formation process might differ for other systems (or trustees).

### **7.1. Implications**

Teacher educators, educational leaders, policymakers, administrators, and especially those in charge of different public sectors of any ES should consider the following actions:

- Work toward obtaining the trust of beneficiaries and providers by applying the factors of trust revealed in this study.
- Enhance the trust degree in education professions by building high-standard preparation and development programs for education professionals, as well as trusting them and marketing their quality transparently in different media to reach the public and special groups within society. Additionally, connect each profession to a well-established and active specialized association to improve that profession.
- Connect different types of education with accountability, high standards of performance, and quality assurance, and adopt successful international standards and practices of well-developed countries, with appropriate adjustments to suit each country's ES.
- Involve all stakeholders in planning, application, and evaluation processes of all components of the country's ES.
- Establish — especially in developing countries — specialized educational associations like those in developed countries, and connect them with similar international associations to enhance the ES's quality and generate the necessary trust.
- Build and develop educational knowledge resources (e.g., books, journals, conferences, and websites), in a scientific, objective, reliable, and modern manner, based on advanced planning, constructing, reviewing, and evaluating mechanisms to raise trust in these resources.
- Govern and administer educational institutions to provide stakeholders with credible information, establish sound plans and applications, welcome opinions and innovative ideas from concerned and specialist individuals, use evidence-based designs, be open to new developments,

and make required changes based on research, logic, and practical wisdom. It has been noted (Morselli et al., 2012: 53) that “a strong association was found between well governance and trust in institutions.”

- In each country, develop independent non-profit unit(s) or center(s) to measure (e.g., biennially) trust judgments of all stakeholders toward the ES and its sectors and components. Additionally, follow up on reports from similar international centers about trust in education and ESs. Increase awareness of the importance of trust and trust studies for society. As the nature and factors of trust change over time, such a unit or center is needed to follow up on these changes.

## 7.2. Implications for Future Research

A follow-up investigation could examine what it means to trust an ES, or define the effects of this trust on teacher educators’ performance in their academic and teaching work. Further research should also explore other ESs in different countries or regions to locate and compare trust-building factors.

Future research should investigate and measure the degree of trust in ES components and include different groups of participants (e.g., students, teachers, the public, and/or businesses). Outputs of these groups can be further examined to discover the causes of high, middle, or low degrees of trust in any ES element.

Finally, future investigations could compare trust judgments toward government and non-government educational bodies, or between public and private universities or grade schools within the same country or across cultures.

## References

- Addai et al., 2013 – Addai I., Opoku-Agyeman C., Ghartey H.T. (2013). An exploratory study of religion and trust in Ghana. *Social Indicators Research*, 110(3): 993-1012.
- Albareidi, 2012 – Albareidi, A. (2012). A seminar on the industry of Arabic university textbook. *AlJazirah*, 4 December, 13946.
- Alnaif, 2014 – Alnaif, S. (2014). Role of scientific conferences in the activation of research culture among students in higher education: A case study of University of Ha’il in Saudi Arabia. *Journal of Arabi Universities Union for Research in Higher Education*, 3(1): 47-67.
- Alsalem, 2012 – Alsalem, S. (2012). Arab content of the Internet. *King Saud University, Information Studies*, 13: 7-53.
- Ament, 2013 – Ament, T. (2013). The role of the superintendent and school board chair in building relational trust with newly elected board members in small rural Washington school districts. EdD Dissertation, Washington State University, United States–Washington.
- Bachmann, 2015 – Bachmann, R., Gillespie, N., Priem, R. (2015). Repairing trust in organizations and institutions: Toward a conceptual framework. *Organization Studies*, 36(9): 1123-1142.
- Bates, 2012 – Bates, A. (2012). Transformation, trust and the ‘importance of teaching’: Continuities and discontinuities in the coalition government’s discourse of education reform. *London Review of Education*, 10(1): 89-100.
- Beaulieu, 2006 – Beaulieu, P. (2006). Accountability and the public trust: Restoring the balance. An annotated bibliography [Electronic resource]. URL: <https://files.eric.ed.gov/fulltext/ED547402.pdf> (accessed 5 August 2018).
- Borgonovi, Burns, 2015 – Borgonovi, F., Burns, T. (2015). The educational roots of trust. *OECD Education Working Papers, No. 119*. Paris, France: OECD. DOI: 10.1787/5js1kv85dfvd-en (accessed 3 September 2018).
- Bormann, John, 2014 – Bormann, I., John, R. (2014). Trust in the education system – thoughts on a fragile bridge into the future. *European Journal of Futures Research*, 2(35): 1-12. DOI: 10.1007/s40309-013-0035-0 (accessed 7 September 2018).
- Bowman, 2012 – Bowman, R. (2012). The need to trust and to trust more wisely in academe. *Education*, 132(4): 907-914.
- Carless, 2009 – Carless, D. (2009). Trust, distrust and their impact on assessment reform. *Assessment & Evaluation in Higher Education*, 34(1): 79-89.



Carr, 2014 – Carr L.J. (2014). Trust – distinguishing forms, kinds, and degrees: I. [Electronic resource]. URL: <http://www.rivier.edu/faculty/lcarr> (accessed 9 August 2018).

Carvalho, De Oliveira Mota, 2010 – Carvalho, S., De Oliveira Mota, M. (2010). The role of trust in creating value and student loyalty in relational exchanges between higher education institutions and their students. *Journal of Marketing for Higher Education*, 20(1): 145-165.

Claes, Hooghe, 2017 – Claes, E., Hooghe, M. (2017). The effect of political science education on political trust and interest: Results from a 5-year panel study. *Journal of Political Science Education*, 13(1): 33-45.

Creswell, 2014 – Creswell, J.W. (2014). Research design: Quantitative, qualitative, and mixed methods approaches (4th ed). Thousand Oaks, CA: SAGE Publications.

Czerniawski, 2011 – Czerniawski, G. (2011). Emerging teachers–emerging identities: trust and accountability in the construction of newly qualified teachers in Norway, Germany, and England. *European Journal of Teacher Education*, 34(4): 431-447.

D'Olimpio, 2016 – D'Olimpio, L. (2016). Trust as a virtue in education. *Educational Philosophy and Theory*, 50(2): 193-202.

Eng, 2014 – Eng, S., Szmodis, W., Mulsow, M. (2014). Cambodian parental involvement: The role of parental beliefs, social networks, and trust. *The Elementary School Journal*, 114(4): 573-594.

Geagea, 2014 – Geagea, H. (2014). Sources of information in Arab educational research. Master Thesis, University of Lebanon, Lebanon.

Goepel, 2012 – Goepel, J. (2012). Upholding public trust: An examination of teacher professionalism and the use of teachers' standards in England. *Teacher Development*, 16(4): 489-505.

Gray, Weir, 2014 – Gray, D., Weir, D. (2014). Retaining public and political trust: Teacher education in Scotland. *Journal of Education for Teaching*, 40(5): 569-587.

Hollis, 1998 – Hollis, M. (1998). Trust within reason. Cambridge, UK: Cambridge University Press.

Hoppes, Holley, 2013 – Hoppes, C., Holley, K. (2013). Organizational trust in times of challenge: The impact on faculty and administrators. *Innovative Higher Education*, 39(3): 201-216.

Khaled, 2014 – Khaled, G. (2014). Preparing scale for service quality in higher education. *Educational Technology: Studies and Research – Special Issue*: 127-149.

Khalifa, 2008 – Khalifa, A. (2008). University textbook between the present and the vision of the future. *Journal of College of Education – Tanta University*, 38: 196-228.

Lamsa, Pucetaite, 2006 – Lamsa, A. M., Pucetaite, R. (2006). Development of organizational trust among employees from a contextual perspective. *Business Ethics: A European Review*, 15(2): 130-141.

Landwehr, Weissenro, 2016 – Landwehr, B., Weissenro, G. (2016). The significance of trust in the political system and motivation for pupils' learning progress in politics lessons. *Citizenship, Social and Economics Education*, 15(3): 212-226.

Lewis, 2005 – Lewis, A. (2005). Trust versus manipulation. *Phi Delta Kappan*, 87(1): 3-4.

Mann, 2012 – Mann, L. (2012). Exploring trust between the higher education president and the assistant to the president. EdD Dissertation, University of Alabama, United States – Alabama.

Martins, Baptista Nunes, 2016 – Martins, J., Baptista Nunes, M. (2016). Academics' e-learning adoption in higher education institutions: A matter of trust. *The Learning Organization*, 23(5): 299-331.

McKnight, Chervany, 2001 – McKnight, D.H., Chervany, N.L. (2001). Trust and distrust definitions: One bite at a time. In: Falcone R, Singh M, and Tan Y-H (eds). *Trust in cyber-societies*. Berlin, Germany: Springer, 27-54.

McMorran, 2012 – McMorran, T. (2012). The relationship between the comprehensiveness of a school system's eighth to ninth grade transition process and the degree of trust shared by middle-school principals and high-school principals. EdD Dissertation, Seton Hall University, United States – New Jersey.

Morselli, 2012 – Morselli, D., Spini, D., Devos, T. (2012). Human values and trust in institutions across countries: A multilevel test of Schwartz's hypothesis of structural equivalence. *Survey Research Methods*, 6(1): 49-60.

OECD, 2017 – OECD (2017). OECD reviews of integrity in education: Ukraine 2017. Paris, France: OECD Publishing.

Osler, Starkey, 2005 – Osler, A., Starkey, H. (2005). Changing citizenship: Democracy and inclusion in education. Berkshire, England: Open University Press.

Rahman, 2015 – Rahman, M., Osmangani, A., Daud, N., Chgowfhury, A., Hassan, H. (2015). Trust and work place spirituality on knowledge sharing behaviour. *The Learning Organization*, 22(6): 317-332.

Resh, Sabbagh, 2014 – Resh, N., Sabbagh, C. (2014). Justice, belonging and trust among Israeli middle school students. *British Educational Research Journal*, 40(6): 1036-1056.

Romero, 2015 – Romero, L. (2015). Trust, behavior, and high school outcomes. *Journal of Educational Administration*, 53(2): 215-236.

Saglam, 2016 – Saglam, A. (2016). The Effects of Vocational High School Teachers' Perceived Trust on Organizational Silence. *Journal of Education and Training Studies*, 4(5): 225-232.

Santiago, 2016 – Santiago, R., Garbacz, S., Beattie, T., Dragoo, Ch. (2016). Parent-teacher relationships in elementary school: An example of parent-teacher trust. *Psychology in the Schools*, 53(10): 1003-1017.

Schoon, Cheng, 2011 – Schoon, I., Cheng, H. (2011). Determinants of political trust: A lifetime learning model. *Developmental Psychology*, 47(3): 619-631.

Schoorman et al., 2007 – Schoorman, F. D., Mayer R. C., Davis, J. H. (2007). An Integrative Model of Organizational Trust: Past, Present, and Future. *Academy of Management Review*, 32(2). DOI: <https://doi.org/10.5465/amr.2007.24348410>

Shaaban, 2017 – Shaaban, A. (2017). Mechanisms of improving the ranking of Arab universities in the international classifications of universities: Egyptian and Saudi universities model. *Future of Arabic Education*, 24(109): 11-94.

Shelden, 2010 – Shelden, D., Angell, M., Stoner, J., Roseland, B. (2010). School principals' influence on trust: Perspectives of mothers of children with disabilities. *The Journal of Educational Research*, 103(3): 159-170.

Shephard, 2017 – Shephard, K. (2017). Discovering tertiary education through others' eyes and words: Exploring submissions to New Zealand's review of its tertiary education sector. *Journal of Higher Education Policy and Management*, 39(1): 4-19.

Siefkes-Andrew, 2017 – Siefkes-Andrew, A. (2017). A crisis of trust or trust in crisis? Examining internal stakeholder trust in higher education. PhD Dissertation, Regent University, United States – Virginia.

Simmons, 2012a – Simmons, C. (2012). Budgeting and organizational trust in Canadian universities. *Journal of Academic Administration in Higher Education*, 8(1): 1-12.

Simmons, 2012b – Simmons, C. (2012). Participative budgeting, budget evaluation and organizational trust in Post-Secondary educational institutions in Canada. *Journal of Academic Administration in Higher Education*, 8(2), 41-53.

Simpson, Baird, 2013 – Simpson, L., Baird, J. (2013). Perceptions of trust in public examinations. *Oxford Review of Education*, 39(1): 17-35.

Stensaker, Harvey, 2013 – Stensaker, B., Harvey, L. (2013). The accountability dimension in quality assurance: An international comparison. *Higher Education Review*, 45(2): 26-40.

Stensaker, Maassen, 2015 – Stensaker, B., Maassen, P. (2015). A conceptualisation of available trust-building mechanisms for international quality assurance of higher education. *Journal of Higher Education Policy and Management*, 37(1): 30-40.

Tan, Tambyah, 2011 – Tan, S., Tambyah, S. (2011). Generalized trust and trust in institutions in Confucian Asia. *Social Indicators Research*, 103(3): 357-377.

Tschannen-Moran, 2014 – Tschannen-Moran, M. (2014). Trust matters: Leadership for successful schools (2<sup>nd</sup> ed). San Francisco, CA: Jossey-Bass.

Uslaner, 2002 – Uslaner, E. M. (2002). The moral foundations of trust. Cambridge, United Kingdom: Cambridge University Press.

Vidotto, 2012 – Vidotto, G., Massidda, D., Noventa, S., Vicentini, M. (2012). Trusting beliefs: A functional measurement study. *Psicologica: International Journal of Methodology and Experimental Psychology*, 33(3): 575-590.



[White-Cooper, 2009](#) – *White-Cooper, S., Dawkins, N., Kamin, S., Anderson, L.* (2009). Community-Institutional Partnerships: Understanding Trust Among Partners. *Health Education & Behavior*, 36(2): 334-347.

[Wilkinson, 2003](#) – *Wilkinson, D., Birmingham, P.* (2003). Using research instruments: A guide for researchers. New York, NY: Routledge Falmer.

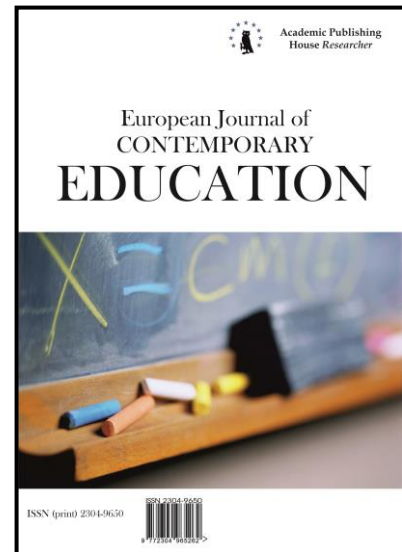
[Wilson, 2011](#) – *Wilson, G.* (2011). Trust or consequences: The relationship between faculty trust and faculty learning communities in higher education. PhD Dissertation, University of Alabama at Birmingham, United States – Alabama.

[Zayim, 2015](#) – *Zayim, M., Kondakci, Y.* (2015). An exploration of the relationship between readiness for change and organizational trust in Turkish public schools. *Educational Management Administration & Leadership*, 43(4): 610-625.



Copyright © 2019 by Academic Publishing House Researcher s.r.o.  
All rights reserved.  
Published in the Slovak Republic  
European Journal of Contemporary Education  
E-ISSN 2305-6746  
2019, 8(4): 715-725  
DOI: 10.13187/ejced.2019.4.715  
[www.ejournal1.com](http://www.ejournal1.com)

**WARNING!** Article copyright. Copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of the violation of the author(s) rights will be pursued on the basis of international legislation. Using the hyperlinks to the article is not considered a violation of copyright.



## Teachers Carrying out their Professional Roles as View of Zarqa Town's Teachers

Zuhair Al-Zoubi <sup>a, \*</sup>, Nabil shamroukh <sup>b</sup>, Najati Ahmad banyounis <sup>a</sup>

<sup>a</sup> Hashemite University, Jordan

<sup>b</sup> Yarmouk University, Jordan

### Abstract

The teacher is the dynamic axis in the educational process. An effective teacher is a source of inspiration and has an effective and positive impact on students learning. Students rely on teachers to make decisions about their studies, work, and living in the future. This study aimed to investigate the degree of how much teachers carry out their professional roles and the affecting factors from the point of view of Zarqa Governorate's teachers. To achieve these goals, researchers created a questionnaire that measures the degree of teachers doing their professional roles and another questionnaire that measures teachers' estimations for the most important affecting factors on carrying out the professional role. The study's sample consisted of (1200) teachers from public schools in Zarqa Governorate's education directorates. This study was conducted during academic year 2018–2019. The study results showed that the percentage of teachers doing their professional role in Zarqa Governorate's education directorates were high, there are no statistically significant differences for the degree of teachers doing their professional roles according to sex, educational qualification, level and years of experience. The researchers recommend to focus on highlighting teacher's role during teaching through the curricula and focusing on field exercise for future teachers.

**Keywords:** teacher, professional role, Zarqa Governorate.

### 1. Introduction

The world is witnessing a shift in civilization, since the beginning of the century, which included all the aspects of life whereas in every day of life there is always a new data that appears in the theater of life and needs skills and knowledge so you can interact with successfully. These transformations have overshadowed on the infrastructure of the educational system. Moreover, we need non-traditional education as the one we know. In order to build humans who are able to respond to all these changes and shifts, we need to reconsider the educational systems' definition,

---

\* Corresponding author

E-mail addresses: [zohair971@yahoo.com](mailto:zohair971@yahoo.com) (Z. Al-Zoubi)

content and style, and that is by having new foundations based on effective scientific strategies that accommodate the available financial and human resources. Since then, different countries began to race in their development on their educational system comprehensively and partly at other times, and the issue of reform and development related to teachers witnessed a great attention in different states which seeks to improve the educational system and thus improving its outputs (Al-Quraan, 2012). Some of the most prominent results of the modern and future educational challenges are those which are related to the teacher's role in the education process during the rapid changes in economics and politics because the modern world needs new ways of teaching (Harries, Mojies, 2007). An educational research noted that there is a positive relationship between having personal and functional characteristics for the teachers' didactic effectiveness (Al-Azami, 2016). These characteristics can be classified into two major categories: personal and general characteristics and operational capacities in the form of functional duties (Al-Ahmad, 2005). It is important to emphasize that the more teachers could have these qualities, the more they could have effective teaching methods and skillful guidance in the educational process in and out of the classroom and then making a huge difference in the students' personalities (Majdalawi, Abu Samar, 2016). Teachers seeking to have all of these qualifications one by one can be considered as a positive sufficient indicator for their willingness to shape their educational personality and give an effective educational impact (Ibrahem, 2002). The teacher represents a subsystem in class management as a whole system, and they take full responsibility in many roles whether it was in or out of the classroom. Moreover, everyone expects teachers to do all of these roles in order to achieve the goals that the classroom education seeks based on community's philosophy (Al-Naqa, Abu-Ward, 2009). It is no longer acceptable to look at the teacher in a narrow view, as if he is just a tool to link between the textbook and the minds of the pupils. In other words, it is inappropriate to look at the teacher as only a knowledge converter (Al-Ajes, Al-Bana, 2004). And anything else the teacher does for educating students is just a normal action steaming from the heart without any prior preparation, and without any exaggeration, this narrow view to the teachers' role means that everyone who has a good amount of information and connection can do the teachers' role (Cohen, 2008).

The primary roles can be determined by describing it and by relating it to the expectations of the heads, students, and others. These expectations form by the surrounding environmental factors towards the teachers' duty (Mhani, 2010). This mostly leads to a divergence in the teachers' behavior in doing their role, and the different sources for these expectations which imposed from the surroundings and the internal organization for schoolwork are responsible for this divergence in their behavior (Day, 2004).

These roles are acquired and not inherited in which they can be taught and learnt through a training phase or in practice. Many of these roles can be learnt by observing and mimicking or stimulating and practicing it. And then doing these roles becomes automatic (Harlin, 2008).

Unquestionably, teaching profession is a highly respected profession that gets everyone's attention for its great influence on the nation's present and future (Alheleh, 2007) and the importance of this profession manifests in its human face, educational course and humanitarian and societal (Abu-Alnemer, 2008). Moreover, this respected profession that is based on the intentional education and carried out by school members is not from a vacuum, but it is stemmed from the society that the school grew in, agreed on and designed for it textbooks and curriculums (Retshard, 2005).

Teachers are members of the community that they belong to, they participate in its development and improvement with a great responsibility where the community asks for an effective role from them to their members (Wood, 2007). Education is a social industry, and teaching is the art of developing the future. Moreover, there is no goal that can be achieved without having a good relationship between the school and the society; also between the teacher and the students (Kamaal, 2009), and this confirms that the teacher's role has to be integrated with families particularly and the society generally (Akishi, 2014). Teachers are demanded to strengthen their role in the most important part which is the cultural aspect, so they can contain the society and be contained in return (Green, 2008).

Teachers are considered to be the pioneers of the educational process since they are the ones who start the educational process. They also find ways and techniques to improve the educational process. The teacher's job includes being an educator, guide and supervisor. Considering the

message of teachers, they should ascend into nobility to find their prestigious in society and between their students by developing his message properly and to stay away from what will decrease their status. Thus, they should do their guiding role fully taking into consideration their educational students while being armed with determination, so they can be the creative and active role model (Obaid, 2006). Therefore, if these were the teacher's characteristics, their guiding role will be influential as an interesting character that grabs everyone's attention and leads them into success and moral high ground (Al-Astal, Al-Khaldi, 2005).

The nature of the message that is assigned to the teacher has two primary dimensions: educational one (guiding and indicative) and academic one including teaching duties, education and the consequent classes and shares that are assigned to the teacher (Mousa, Al-khawaldeh, 2007), as well as the consequent duties that are assigned from the school administration such as tutoring on educating one of the classes, shifting, participating in training courses and the work of the various school committees and councils (Deslandes, 2009).

From the formal point, teachers should perform the two tasks together (the educational role and the academic role) without separating them due to the fact the teacher works in this exact field. Also, because of the importance of "education," it has been preferred on "the academic education" as a basis for a well environmental structure (Abu-Sardaneh, 2017).

The philosophy of education in Jordan has confirmed the importance of the educational role for teachers, giving them the utmost care. While it has provided for the importance on focusing on the educational role in the educational process by focusing on inculcating values that emerge from Islamic religion, the Arab nation and the principles of the Great Arab Revolution (Ministry Of Education, 2005). And from another perspective, the teacher's professional role in education is being accused with every day that goes by because their lack in doing their job fully especially when there are issues in education such as school violence. Therefore, all of school, society and media getting accused for the omission (Al-Dajani, 2013), in some cases, these accusations are limited to the principal and teachers themselves where everyone starts accusing the other for being negligent (Al-Rashed, 2015).

A number of researchers conducted studies about the teacher's role. The result of Bray (2002) study showed that an intimate respectful relationship between the teacher and the student smoothens of the education process, enhances the attitude of students and improves the educational level of students. According to Mutawaliy and Alhuluw (2002), the importance of the curriculum's content of "School Of The Future" is built on two primary elements: Arab and Islamic culture and openness to global cultures not exceeding from our own culture.

The practice of teachers in their educational role was significantly low in most of the classes. Arabic language teacher, social teacher and religion teacher were the most participating in this role (Nashwan, Salman, 2005). According to Reusser (2007) study, performance of students in some course has improved due to the use of quality principles in the program of educating teachers that was implied in the American Midwest universities. The characteristics that will be looked for in a teacher are to be the open-minded friend and acceptance, listener, understandable for their needs, encouraging them, ensure that they have a comfortable environment, to have the ability to give an interesting education, to have communication skills and diligent in his work (Viialla, Quigley, 2007). The county's study (2009) showed that the most important characteristics for the future teacher to have are: good knowledge in his field, decent knowledge in his students' abilities and psych, highly skilled in teaching methods, high potential in communicating with his students and to keep up with developments in using computers. The ability of a good teacher in communicating with the school environment is limited and below the required level and the inability in prioritization (Russell, 2009). The availability rate of quality standards for the teacher from the perspective of faculty members in faculties of education (Al-Azhar, the Islamic and Al'aqsa) came to a medium level (Alhasiu, 2012). There is an affective role for the Palestinian teacher in helping and developing the community attributed to the gender, years of experience and the differences attributable to the supervising authority of the school (Al-Naaqat, Shaykh-Aleid, 2012). According to Shahan (2014), counseling skills were average for counselors' estimation, and counselors skills were the lowest in dealing with the educational process parties. Moreover, the results showed that there are statistically significant differences in the level to which counselors have counseling skills according to sex variable and females, but the differences weren't significant according to those who have a changeable academic achievement, major and years of experience. Mu'tasim (2014)

study showed that there numerous problems concerning guidance such as the lack of interest paid by the student for educational counseling goals and reducing the role of extension services given by the educational adviser in school by the guardians. Furthermore, the results showed that there is a difference in problems that face the educational advisers in their work in public schools attributed for males, variable experience, major and educational qualification.

According to Nasir (2016), overcrowding schools and classrooms have a negative impact on the educational process, and the lack of interaction between home and school makes the teacher's role twice harder in the educational process. Also, the huge number of vacations and the delay on the official working hours affect the performance level of the teacher for his educational roles. Khalifa's study (2017) found that educational objectives strengthen national affiliation, and it is important for the teacher to have technological skills and focusing on educating principals to have technological skills and improvement.

**Research Problem and Questions:**

The problem is identifying teachers' professional role from the teachers' point of view in Zarqa Governorate. More specifically the study aims to answer following questions:

**Q1:** What is the degree of teachers doing their professional role from Zarqa teachers' point of view?

**Q2:** Does the degree of teachers doing their professional role towards their students change according to the sex, educational qualification, years of experience and the level of schools?

**Importance of the Study:**

The importance of this study stems from shedding the light on and increasing the teachers' responsibilities towards the students, the expected improvement in the educational process in all of its elements and demonstrating the importance schools and the educational institutions in the new millennium. The study is also important because it tries to raise the awareness of educational policymakers, decision makers, administrators of educational qualifying and training programs in universities and in the ministry of education to the topic of studying and its results, and raise teachers' awareness about the importance of their educational roles and guidance.

**2. Methodology**

**Research Sample**

The study's population consisted of 4576 of the public schools' teachers in Zarqa's three directorates of education: Zarqa the first, Zarqa the second and Russeifa. The study's sample consisted of 1200 teachers which were chosen randomly from all Zarqa's Directorates of education [Table 1](#).

**Table 1.** Distribution of the Sample Participants over the Study Variables

Variable	Category	Frequencies	Percentage
Gender	Male	546	46 %
	Female	645	54 %
Educational qualification	Bachelors	812	68 %
	Postgraduate	388	32 %
Years of experience	5 years and less	375	31 %
	6-10 years	432	36 %
	11 years and more	393	33 %
Level	Primary school	316	26 %
	Middle school	432	36 %
	Secondary school	452	38 %
<b>Total</b>		<b>1200</b>	<b>100 %</b>

**Instrument**

The instrument was developed based on the previous studies and research works that the researchers reviewed, such as: Al-Qar'an (2012), Mahani (2010), Nasser (2016), Akishi (2014), Abu Sardana (2017). The instrument consisted 22 items, and all items are measured on a 5-point Likert scale (1) strongly disagree, to (5) strongly agree.



**Instrument’s validity**  
**Referees Validity**

Researchers distributed the questionnaire in its first primary image to ten referees, who are university professors and specialists from all educational and psychological majors. This was done to check the validity, linguistic correctness and applicability of the paragraphs. The researchers made the required changes like deleting, editing and adding, which gave the questionnaire a reasonable validity.

**Internal Consistency**

In order to find the internal consistency of the paragraphs, paragraphs’ correlates and the total score of the instrument, in both of its parts, were found. Table 2 illustrates the correlates between each paragraph’s score and the total score.

**Table 2.** Paragraphs’ correlates and the total score of the study’s instrument

Paragraph Number	Correlate	Level of Statistical Significance	Paragraph Number	Correlate	Level of Statistical Significance
1	0.56	0.00	12	0.59	0.00
2	0.68	0.00	13	0.75	0.01
3	0.69	0.00	14	0.86	0.00
4	0.81	0.00	15	0.77	0.00
5	0.76	0.02	16	0.81	0.00
6	0.78	0.00	17	0.56	0.00
7	0.64	0.00	18	0.78	0.00
8	0.82	0.00	19	0.55	0.02
9	0.81	0.00	20	0.62	0.00
10	0.73	0.01	21	0.88	0.00
11	0.86	0.00	22	0.71	0.00
The instrument as a whole				0.75	0.00

It is clear in Table 2 that all the paragraphs attained statistically significant level at the level of  $(0.05 \geq \alpha)$ .

**Instrument Constancy**

In order to check the constancy of the instrument, researchers calculated the instrument’s stability coefficient according to Cronbach Alpha’s equation to calculate stability. The stability coefficient reached (Alpha = 0.94), and this result means that the stability coefficient is high and suitable for the purposes of the current study.

**Data Analysis**

Arithmetical averages and standard deviations were used to answer the first and third questions. One-way ANOVA analysis, L.S.D test and T-test were used to answer the second and forth questions.

**3. Results and discussion**

***First question: What is the degree of teachers doing their professional role from Zarqa teachers’ point of view?***

In order to answer this question, arithmetic averages and standard deviations were calculated. Table 3 illustrates the arithmetic averages and standard deviations for all instrument’s paragraphs.

Table 3 shows that the degree of teachers doing their professional role in Zarqa’s education departments is high. The arithmetic average is (3.87) and the standard deviation is (0.89). Researchers attribute this result to the awareness of the teachers’ sample about the importance of their professional role towards their students. This will hopefully be the suitable degree of the anticipated role. The educational level also reflects the importance of understanding and being aware of this professional role and that’s why most teachers hold at least a bachelor’s degree.

**Table 3.** Arithmetic averages and standard deviations for the degree of teachers doing their professional role towards their students according to the instrument as a whole

Item Number	Item	Rank	Arithmetic Averages	Standard Deviations	Degree
1	I deliver guidance sessions for students through the school broadcasts.	6	3.93	0.88	High
2	I give guidance regarding students' looks especially about their clothes and haircuts.	11	3.89	0.91	High
3	I devote time to sit with students and understand their educational problems that are not related to education.	12	3.88	0.93	High
4	I participate in parent-teacher meetings.	10	3.90	0.92	High
5	I offer guidance and tips for students during classes.	4	3.95	0.86	High
6	I try to improve students' bad behavior outside school.	22	3.69	0.93	High
7	I encourage students to obey the commands of the Islamic religion.	1	4.00	0.85	High
8	I teach students Islamic Arab values in direct and indirect ways.	7	3.92	0.94	High
9	I spread awareness about the moral hazard of modern technologies (satellites, mobile phones and CDs)	<b>13</b>	3.87	0.96	High
10	I reinforce values like respecting time and investing it.	8	3.91	0.94	High
11	I ask students to keep the classrooms and schoolyard clean.	8	3.91	0.94	High
12	I deliver remarks about students' behavior to the school administration.	3	3.98	1.00	High



13	I develop students' love for Islamic figures and nationalism.	2	3.99	0.90	High
14	I encourage students to use the Arabic language because it is the language of Islam.	20	3.72	0.96	High
15	I motivate students to obey the society's customs and traditions and to respect their parents.	14	3.86	0.94	High
16	I resolve conflicts between students even if they happen outside school.	15	3.85	0.71	High
17	I warn students about smoking and explain its harm.	18	3.81	0.99	High
18	I advise my students to not follow unnecessary consumerist tendencies.	17	3.82	0.96	High
19	I encourage students to protect school furniture and property.	16	3.83	0.92	High
20	I contact parents to fill them in on their kids' behavior.	21	3.71	0.93	High
21	I motivate students to study and show the importance of education.	5	3.94	0.90	High
22	I encourage students to freely express themselves during classes, or by participating in the school's broadcast and wall magazines.	19	3.80	0.99	High
Grand Total			3.87	0.89	High

Results also showed that item (7): (I encourage students to obey the commands of the Islamic religion.) came in the first place with an average of (4.00) and a (0.85) standard deviation. It can be noted from the result that teachers' professional role priorities were centered in: encouraging students to freely express themselves, spreading awareness about modern technological threats, encouraging them to use the Arabic language, motivating them to study and strengthening time values and respecting it. These priorities are considered extremely important; especially in a time where students should be aware of the risks of globalization and information along with the risks they include which affect the nations' cultural identity and values and this can be achieved by arming students with knowledge, culture and respect for time. Another thing we can notice in the

result is that even though these items got high degrees, but their averages were in the minimum range degree, they were approaching the central degree and none of them exceeded level 4.

Results showed the item (6): (I try to improve students' bad behavior outside school.) came in last, with an average of (3.69) and a standard deviation of (0.93). Researchers think the reason behind this is that teachers think this is not a part of their professional role, modern regulations prevent doing this outside school, it's the responsibility of the school's administration or the school counselor only, given that these duties the core of their professional roles especially that the teachers' new duties include that teachers should be multi-functional and high level of communication skills inside and outside school.

**Second question: Does the degree of teachers doing their professional role towards their students change according to the sex, educational qualification, years of experience and the level of school?**

In order to answer this question, multiple variance analysis (MANOVA) was used to examine the differences between the total averages of Zarqa Governorate's teachers' responses to whether teachers do their roles differently when the (sex, educational qualification, years of experience and the level the school teaches) are different. Table 4 illustrates the test results.

**Table 4.** Summary of MANOVA results

Variable	The Test	Test Value	Degrees of Freedom	The Value of (F)	Level of Significance*
Sex	Hotling	0.019	1	1.135	0.341
Educational qualification	Walikus	0.966	1	1.046	0.404
Years of experience	Walikus	0.978	2	1.0347	0.235
level	Walikus	0.951	2	1.559	0.099

\*Statistical function at  $(0.05 \geq \alpha)$  significance level.

It is shown from Table 4 that:

- There are no statistically significant differences in the degree of teachers doing their professional role towards their students from the point of view of Zarqa Governorate's teachers caused by the sex of the teacher at  $(0.05 \geq \alpha)$  significance level. The value of (F) reached (1.135) at (0.341) level of significance and that is higher than 0.05.

-There are no statistically significant differences in the degree of teachers doing their professional role towards their students from the point of view of Zarqa Governorate's teachers caused by the variable (educational qualification) of the teacher at  $(0.05 \geq \alpha)$  significance level. The value of (F) reached (1.046) at (0.404) level of significance and that is higher than 0.05.

- There are no statistically significant differences in the degree of teachers doing their professional role towards their students from the point of view of Zarqa Governorate's teachers caused by years of experience's variable at  $(0.05 \geq \alpha)$  significance level. The value of (F) reached (1.0347) at (0.235) level of significance and that is higher than 0.05.

- There are no statistically significant differences in the degree of teachers doing their professional role towards their students from the point of view of Zarqa Governorate's teachers caused by the level which the teacher teaches  $(0.05 \geq \alpha)$  significance level. The value of (F) reached (1.559) at (0.099) which is higher than 0.05.

The researchers attribute this result of not having statistically significant differences in the study's sample, for the degree of teachers doing their professional roles in the point of view of Zarqa Governorate's teachers to all the variables. Teachers do their professional roles whether they are males or females and regardless of their educational qualification because the regulations and instructions impose teachers to do their professional role. Also, the teachers' role doesn't change according to the level he is teaching because this professional role imposes itself regardless of the variables.

#### 4. Conclusion and recommendations

In view of the situation, researchers gave couple of recommendations:

- Double the professional role of teachers, school principals and counselors in Jordanian schools.
- Build cooperation between the teacher, educational and social institutions, family, school, mass media, mosques and clubs to gain values.
- Reconsider educational preparation and rehabilitation programs for teachers in universities and in the Ministry of Education to make teachers more capable of doing their role better.
- Teachers participating with researchers in doing scientific researches and attending scientific conferences to constantly be aware of new developments.
- Encourage social interaction by teachers directly dealing with the society and sharing the happiness and sadness of others.
- Focus on highlighting teacher's role during teaching through the curricula and focusing on field exercise for future teachers.
- Interest in the programs of faculties of education while balancing between the curricula of educational, academic and cultural majors according what is being done in the universal universities.
- Conduct more researches about teachers' educational and valuable role from the students and parents' point of view.
- Conduct researches about the teachers' role in developing the society, school and people working in it.

#### References

- [Aazmi, 2016](#) – *Aazmi, B.* (2016). A proposed proposal for developing the system of preparing the teacher in general education in the Arab world to meet local and global developments. *Journal of the Faculty of Education-Banha University*, 27(108): 1-98.
- [Abu Nimr, 2008](#) – *Abu Nimr, A.* (2008). The role of the teacher in the light of Islamic education and the extent to which it represents the members of the faculty of the faculties of education from the point of view of their students. Unpublished MA Thesis. Islamic University, Gaza.
- [Abu Sardana, 2017](#) – *Abu Sardana, M.* (2017). Effectiveness of the continuing professional development program of the school-based teacher in improving the classroom practices of teachers in UNRWA schools in Jordan. Unpublished MA. Middle East University, Amman.
- [Ahmad, 2005](#) – *Ahmed, K.* (2005). Teacher training from preparation to training. University Book House: Al Ain.
- [Ajez, Al-Banna, 2004](#) – *Ajez, F., Al-Banna, M.* (2004). Classroom Management between Theory and Practice. Dar al-Miqdad Press, Gaza: Palestine.
- [Akishi, 2014](#) – *Akishi, N.* (2014). Teacher's social status and its role in the educational process. unpublished master thesis, University of the Valley, Algeria.
- [Al-Kalefa, 2017](#) – *Al-Kalefa, W.* (2017). The role of secondary education in building the personality of a high school student in the light of the variables of the twenty-first century from the point of view of secondary school teachers in the region of Riyadh. *Journal of Scientific Research in Education*, 18(2): 83-115.
- [Al-Astal, Al-Khalidi, 2005](#) – *Al-Astal, I., Al-Khalidi, N.* (2005). Education and Teacher's Role in the Future School. Dar Al-Maashah for Publishing and Distribution, Amman: Jordan.
- [Al-Hailah, 2007](#) – *Al-Hailah, M.* (2007). Teaching Skills. Dar Al-Masirah for Publishing and Distribution, Amman: Jordan.
- [Al-Hashimi, Al-Azzawi, 2013](#) – *Al-Hashimi, A., Al-Azzawi, F.* (2013). Factors Affecting the Performance of Arabic Language Teachers in Government Schools in the Arab World and Proposals for their Solutions. Second International Conference on Arabic Language, Dubai: United Arab Emirates.
- [Al-Naqa, Sheikh, 2012](#) – *Al-Naqa, S., Sheikh, I.* (2012). Palestinian teacher's Role in promoting social reform and development. *Al-Aqsa Journal*, 16(1): 1-29.
- [Al-Qar'an, 2012](#) – *Al-Qar'an, A.* (2012). Factors affecting the survival of the teacher in the teaching profession in the Directorate of Education for the Irbid Region III, the leading center for outstanding students and talented, Ministry of Education Jordan, Amman: Jordan.

**Al-Rasheed, 2015** – *Al-Rasheed, M.* (2015). Evaluation of teaching practices among science teachers in the primary stage in light of the trends based on the knowledge economy in Saudi Arabia. *Journal of Educational Sciences*, 27(2): 39-61.

**Bary, 2002** – *Bray, J.* (2002). The social relationships between learning disabled and non-learning disabled (Special education). *Journal Articles*, 88(4): 41-48.

**Cohen, 2008** – *Cohen, I.* (2008). That's not treating you as a professional – teachers constructing complex professional identities through talk teachers and teaching. *Theory and practice*, 14(2): 79-93.

**Dajani, 2013** – *Dajani, L.* (2013). The degree of practicing supervisors of the conduct of participatory supervision in the capital Amman governorate and its relation to the level of effectiveness of teachers from their point of view. Unpublished Master Thesis, Middle East University, Amman: Jordan.

**Day, 2004** – *Day, C.* (2004). Change Agendas: The Roles of Teacher Educators. *Teaching Education*, 15(2): 79-93.

**Deslandes, 2009** – *Deslandes, R.* (2009). International Perspectives on Contexts, Communities and Evaluated Innovative Practices: family-school-community partnerships. London: Routledge.

**Green, 2008** – *Green, M.* (2008). The Racial Academic Achievement Gap. February 14, pp. 1-10.

**Harlin, 2008** – *Harlin, R.* (2008). Bullying and violence issues in children's lives: Examining the issues and solutions. *Childhood Education*, 84(6): 3-36.

**Harris, Mojis, 2007** – *Harris, A., Mojis, D.* (2007). Improving schools through the role of teacher as leader, translation. Ola Reform, Nile Group Arab, Cairo.

**Hessi, 2012** – *Hessi, J.* (2012). The reality of teacher preparation in the faculties of education in the universities of the Gaza Strip in the light of the overall quality standards. Unpublished master thesis, Al-Azhar University: Gaza.

**Ibrahim, 2005** – *Ibrahim, M.* (2005). The system of preparing the teacher in the light of the overall quality standards. Dar Al-Fikr Publication, Amman: Jordan.

**Kamaal, 2009** – *Kamaal, N.* (2009). The Role of Teachers as Nation Builders in India. [Electronic resource]. URL: <http://www.Associated content.Com/article/1482272/the-role-of-teachers-as-nati-pg2.html?cat=9>

**Khalifa, 2017** – *Khalifa, W.* (2017). The role of secondary education in building the personality of a high school student in the light of the variables of the 21st century from the point of view of secondary school teachers and instructors in Riyadh region. *Journal of Scientific Research in Education-Egypt*, 83-115.

**Mahaftha, 2009** – *Mahaftha, S.* (2009). Teacher of the Future: Characteristics, Skills, and Competencies. Conference on a Better Investment of Educational and Psychological Sciences in Contemporary Challenges. *Damascus University, College of Education*, 27-25.

**Mahani, 2010** – *Mahani, R.* (2010). The teacher's role's support in improving the educational process from the point of view of permanent teachers in UNRWA schools in the Gaza Strip. Unpublished master thesis, the Islamic University.

**Majdalawi, Abu Samar, 2016** – *Majdalawi, F., Abu Samar, M.* (2016). Educational Problems Facing Secondary School Students (Tawhidi) in Palestine: A Field Study in Ramallah and Al Bireh Schools. *International Specialized Educational Journal*, 5(6): 122-134.

**Metwally, Sweet, 2002** – *Metwally, N., Sweet, T.* (2002). Raising and nurturing the individual in a balanced framework between the culture of his society and the interactions with other societal cultures – an analytical conceptual study. Symposium of the future, King Saud University.

**Ministry of Education, 2005** – Ministry of Education (2005). The Annual Book of 2005 Achievements and Indicators, Amman: Jordan.

**Musa, Al-Khawaldeh, 2007** – *Musa, S., Al-Khawaldeh, A.* (2007). The degree of teachers' commitment to social values in the practice of education. *Um Al-Qura Educational, Social and Human Journal*, 19(1): 179-222.

**Mutasem, 2014** – *Mutasem, M.* (2014). The problems faced by educational counselors in their extension work in government schools in the northern governorates from the perspective of

supervisors of educational guidance. *Najah University Journal of Human Sciences – Palestine*, 28(12): 2815-2852.

[Naga, Abu Ward, 2009](#) – Naga, S., Abu Ward, E. (2009). Teachers' professional preparation and development in the light of future challenges, the educational conference, the Palestinian teacher – reality and hope. Islamic University of Gaza.

[Nashwan, Mohammed, 2005](#) – Nashwan, J., Mohammed, S. (2005). The Educational Role of the Preparatory School Teachers in UNRWA Schools to Meet the Challenges of Cultural Globalization", Paper presented to the Sixth Conference of the Faculty of Education "Educational and Psychological Sciences: Future Developments and Applications" 22–24 November 2005, Yarmouk University.

[Nasser, 2016](#) – Nasser, M. (2016). The role of educational teacher from the point of view of school principals and educational supervisors. *Journal of the Faculty of Arts-Iraq*, 4(3): 335-356.

[Obaid, 2006](#) – Obaid, J. (2006). Teacher and preparation of his training competencies. Dar Safa for publication and distribution, Amman: Jordan.

[Reusser et al., 2007](#) – Reusser, J., Butler, L., Symonds, M., Vetter, R., Wall, T. J. (2007). An assessment system for teacher education program quality improvement. *International Journal of Educational Management*, 21(2): 105-113.

[Richard, 2005](#) – Richard, K. (2005). Teacher is a contemplative practitioner and procedural researcher. Translation on Hasnawi, University Book House, Gaza: Palestine.

[Russell, 2009](#) – Russell, R. (2009). A program evaluation of Cardinal Stritch university undergraduate teacher education program. Ph.D. Dissertation, Cardinal Stretch university.

[Saffan, Mahmoud, 2002](#) – Saffan, M., Mahmoud, S. (2002). Teacher: Preparation, status and roles in public education – Special Education – Counseling psychological. Alexandria: Modern Book House.

[Sahouri, 2008](#) – Sahouri, Y. (2008). Modeling the building of the teacher to meet the educational challenges in the age of globalization. Unpublished master thesis, University of Jordan, Amman: Jordan.

[Shaheen, 2014](#) – Shaheen, M. (2014). The Degree of Ownership of Educational Mentors in Palestinian Public Schools for Extension Skills. *Journal of Educational and Psychological Sciences – Bahrain*, 15(3): 183-208.

[Wood, 2007](#) – Wood, D. (2007). Teachers Learning Communities: Catalyst for Change or a New Infrastructure for the Status Quo. *Teachers College Record*, 109(3): 699-739.





Copyright © 2019 by Academic Publishing House Researcher s.r.o.  
All rights reserved.  
Published in the Slovak Republic  
European Journal of Contemporary Education  
E-ISSN 2305-6746  
2019, 8(4): 726-737  
DOI: 10.13187/ejced.2019.4.726  
[www.ejournal1.com](http://www.ejournal1.com)

**WARNING!** Article copyright. Copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of the violation of the author(s) rights will be pursued on the basis of international legislation. Using the hyperlinks to the article is not considered a violation of copyright.



## Corrective-Developmental Work with Children and Their Parents via a College-Based Research-and-Education Center as a Means of Enhancing the Child's Emotional Well-Being

Irina I. Degtyareva <sup>a, \*</sup>, Marina A. Maznichenko <sup>a</sup>, Irina A. Mushkina <sup>a</sup>, Oksana P. Sadilova <sup>a</sup>

<sup>a</sup> Sochi State University, Russian Federation

### Abstract

This paper captures insights from a recent study about the effect of corrective-developmental work with preschool-age children and their parents on the child's emotional well-being and anxiety levels and its benefits in terms of an improved emotional microclimate in the family. The authors share the findings from a diagnostic assessment of the emotional state and anxiety levels of six and seven-year-olds attending Coryphaeus, a research-and-education center operating as part of Sochi State University (Sochi, Russia). The paper describes a special program on corrective-developmental work with children and counseling work with their parents that is being carried into effect at the center by students at the university's Department of Social Pedagogics, which is entitled 'Preparation for School'. The authors conclude that corrective-developmental work with children conducted by senior students majoring in Pedagogics can help improve children's emotional well-being and reduce their anxiety levels, which is crucial to their readiness for school.

**Keywords:** college-based research-and-education center, preparation of children for school via a college-based research-and-education center, Coryphaeus research-and-education center operating as part of Sochi State University, child's emotional well-being, anxiety index, corrective-developmental program, emotional responsiveness in children and adults, emotional microclimate in a family.

### 1. Introduction

Given the current state of affairs regarding preschool childhood in Russia (shortage of places in kindergartens, increase in the number of housewives who are raising a child on their own, increase in the number of troubled families, increase in the number of children with speech, mental, and emotional disorders, including retarded mental development, autism, and

---

\* Corresponding author

E-mail addresses: [irina23121974@mail.ru](mailto:irina23121974@mail.ru) (I.I. Degtyareva), [mia-1609@mail.ru](mailto:mia-1609@mail.ru) (I.A. Mushkina), [sadilova.op@yandex.ru](mailto:sadilova.op@yandex.ru) (O.P. Sadilova), [maznichenkoma@mail.ru](mailto:maznichenkoma@mail.ru) (M.A. Maznichenko)



hyperactivity and attention deficit, many preschoolers lacking real-life communication with their peers and parents as a result of being habituated early on to TV shows, cartoons, computer games, etc.), of special relevance today is the need to conduct special corrective-developmental work with children to help them get ready for school.

In today's climate of insufficient places in kindergartens and inability to devote individual attention to the psychological and emotional problems of each child and family in the context of school preparation activity in the kindergarten, including within short-term day care groups, of relevance is the search for innovative ways of preparing a child for school. A possible option is corrective-developmental classes for children at college-based research-and-education centers focused on the psychological-pedagogical and pedagogical aspects of preparation. Having senior students hold this type of classes may provide an additional boon to both participating children and their parents (e.g., relatively low cost; the child being taught by a young instructor, someone who is likely to be devoid of professional-pedagogical deformations such as self-idealization, a know-all attitude, a tendency to look down on children, or excessive strictness; a better focus on individual development, which could help resolve the problems of individual children and their family; this can open a way to increased creativity and courage, so typical of those in their college years, which can help them generate and implement various innovative techniques and methods for working with children) *and* colleges (opportunity to provide students with valuable practical teaching experience).

In 2016, to help galvanize the process of training future pedagogues and psychologist pedagogues, as well as promote the contribution of backbone colleges to resolving relevant social objectives, Krasnodar Krai's backbone college, Sochi State University, set up Coryphaeus, a research-and-education center for children and adolescents. The center is a functional unit within the university's Office of Research. Via this research-and-education center, senior students at the university's Department of Social Pedagogics are mentored by instructors at the Department of Pedagogical and Psychological-Pedagogical Education to provide a range of educational, social, and psychological-pedagogical services to children of preschool and junior school age and adolescents. These services are provided via the following supplementary education programs for children: Preparation for School; English for Schoolchildren; Logopaedics; Psychology Sessions; Homework Assistance; Fitness Workouts for Adolescents. Students are trained for the provision of these services while undergoing academic and on-the-job practical training at the center. The cost of enrolling in the supplementary education programs is not very high, as these services are provided by students. These services could be of particular benefit to low-income families and families in a difficult life situation, as well as the children of personnel employed by the institution.

This paper aims to describe a study conducted at the Coryphaeus research-and-education center as part of a supplementary education program for children entitled 'Preparation for School'. The objective was to verify experimentally how the center's corrective-developmental classes and individual counseling of parents offered as part of the above program influence a child's emotional well-being and anxiety levels and impact on the emotional climate in their family.

## **2. Discussion**

Most parents wrongly reduce preparation of their children for school to just teaching them to read and write. However, in present-day conditions it is also rather crucial to foster children's personal readiness for it, which, among other things, implies developing their emotional sphere, cultivating their emotional resilience, fostering their capacity for volitional regulation of their behavior, and nurturing a sense of responsibility in them.

Today, children are often faced with stressful situations, which may be reflected negatively in their behavior, resulting in psychological breakdowns and anxiety ([Shapoval et al., 2004](#)).

It has been established by numerous researchers that there is a close tie between emotional balance and physical health, with positive emotional states regarded as one of the essential conditions for development ([Kulagina, Kolyutskii, 2004](#); [Leont'ev, 1972](#)).

A child's personal development is closely associated with all areas of life in the family, including its daily lifestyle, its emotional-moral atmosphere, the interrelationships between its adult members, and its established traditions ([Lashley, 1991](#)). The adults lead the child by example, based on how they go about their own life. Accordingly, most parents educate their children and organize their life based, above all, on educating themselves, organizing life in the family, and

cultivating morally healthy and emotionally sound relationships between the family members, with a focus on fostering an emotionally healthy microclimate within the family. The family's microclimate is what largely governs the child's success at school and the teacher's success in providing instruction to the child, for children are more amenable to educative influence when they are growing up in an atmosphere of friendliness and mutual understanding. Calm and levelheaded parents are likely to impart the same qualities to their children. Likewise, when parents, for instance, have a sense of fear about something and are unable to conceal it, this may promote apprehension and restraint in their children and a desire to seek oblivion.

In the context of preschoolers' emotional well-being and emotional resilience, worthy of note also is that most have at that age a tendency to imitate others' behavior. This characteristic is, certainly, a boon in cases where the adult sets a positive example for the child. However, it could also work the other way – if the adult does something negative.

Issues of cultivating in children a personal readiness for school and fostering their emotional well-being and emotional resilience, which is central to that, have been explored by a number of Russian and foreign scholars. These include Russian scholars K.A. Abul'khanova-Slavskaya, B.G. Anan'ev, A.G. Asmolov, L.S. Vygotskii, A.N. Leont'ev, S.L. Rubinstein, and other researchers focused on the psychology of communication and activity. Children's emotional well-being within the family and school setting has drawn a large amount of attention in psychological-pedagogical research (Izard, 1980). This is a consequence of pedagogical practice both shifting to a humanistic approach toward children and being increasingly oriented toward the personality and individuality of every child. The issue has been investigated by D.B. El'konin, L.S. Vygotskii, N.V. Klyueva, Yu.V. Kasatkina, G.T. Chomentauskas, V.K. Viliunas, S.L. Rubinstein, V.E. Frankl, B. Spinoza, and others (Nemov, 1995).

The various tendencies and factors pertaining to the emotional well-being of children and adolescents have been investigated by scholar A. Choi (Choi, 2018).

Psychologists have explored the effect on a preschooler's emotional well-being and emotional resilience of the various personal and family factors, like the relationship between the mother and father (Amato, 1994), the mother's relationship with another man (Artis, 2007), or the child's stressful experiences (Barnes, 2016). Certain researchers have proposed special ways to prevent anxiety in junior schoolchildren (Barrett, Turner, 2001).

Issues related to children's mental health have been explored in the 21<sup>st</sup> century by scholar W. Bor (Bor et al., 2014).

There are various programs on fostering children's social-emotional readiness for school that have been developed by groups of foreign researchers (Bierman et al., 2008).

The current stage in the development of scholarly thought is characterized by a clear-cut trend toward the humanization of life, which implies recognizing the life and well-being of every human being as the supreme social value. In this context, there is a special focus on a system of human relationships under which each person has a right to defend their interests or stand up for their views, but at the same time will respect the rights and views of other people and will try not to do things that could compromise their honor and dignity. Depending on which view he/she personally holds (embrace or reject a humanistic approach toward people), each person follows their own guidelines of behavior for interacting with others. Ultimately, for their relationships to be mutually acceptive and fulfilling, people will need to cultivate qualities such as kindness, consideration, uprightness, politeness, responsiveness, etc.

## **2. Materials and methods**

The study was carried out via the Coryphaeus research-and-education center, based at Sochi State University, during the 2018-2019 school year. It engaged 16 children of preschool age (five- and six-year-olds) and their parents (16 individuals). The reason behind using a small sample in the study was that it was for the first time ever that they combined at Coryphaeus traditional classes for preparing children for school (Reading and Writing, Math, Handicraft, and English) with a corrective-developmental program (work with children and parents). As it was a pilot test project, a small sample (16 individuals) was used so as not to put a large number of children at risk. The sample also met the requirements regarding the optimum number of children to attend the corrective-developmental classes and the attendance capacity of the building housing the Coryphaeus research-and-education center. The sample size will be increased in a future study.

The study's **first stage** involved a summative experiment. The objective was to determine the baseline levels of a child's emotional well-being (high, neutral, and low) and anxiety (high, medium, and low).

The diagnostic assessment was conducted using the following methodologies:

1) To assess a child's emotional well-being, the authors employed A.N. Lutoshkin's Emotions Through Color methodology (described in detail in Psychological Research, a study guide by T.I. Pashukova, A.I. Dopina, and G.V. D'yakonov) (Pashukova et al., 1996). The methodology was used to determine a child's mood based on the color they chose:

- red, orange – joy;
- yellow – pleasure;
- green – calm;
- blue – sadness;
- lilac, black – anxiety.

2) To assess a child's anxiety levels, the authors employed R. Temple, M. Dorkey, and E.W. Amen's Select a Face methodology.

3) To assess the emotional climate in a family, the authors employed E.I. Zakharova's Parent-and-Child Emotional Interaction Checklist.

The study's **second stage** involved putting into action, via the Coryphaeus research-and-education center, a program entitled 'Corrective-Developmental Work on Fostering in Children a Positive Emotional State and Reducing Their Anxiety Levels'.

The program included corrective classes for children and individual counseling work with parents. The authors had developed a series of consultations, a set of methodological recommendations for parents, and several joint training classes.

The corrective-developmental classes with children and work with parents were carried out based on a supplementary education program entitled 'Preparation for School'. The classes were held for a year two times a week from 11 a.m. till 2 p.m. and comprised three 40-minute-long sessions, each followed by a 10-minute-long physical training break:

- Session 1: Math, Reading and Writing, and English;
- Session 2: Corrective-Developmental Class;
- Session 3: Handicraft (sculpting, cutting-and-pasting, and drawing).

The sessions were followed by individual counseling work with the parents involving discussion of existing issues in the children's personal readiness for school and possible ways to resolve them via the center's classes and at home with the help of the parents by way of correcting the parent-child relationship.

The corrective-developmental program aims to help foster a child's positive emotional well-being and keep down their anxiety levels, which is vital to their personal readiness for school, by way of corrective-developmental classes with children and counseling work with parents.

The key objectives for the program are as follows:

1. Teach a child a set of techniques and methods that will help them determine which state is troubling them and then get their worries under control.
2. Help relieve anxiety; help relieve muscle tightness and tension.
3. Teach a child to use exercise and play to relieve psycho-emotional tension.
4. Foster a friendly atmosphere, facilitate amicable relationships among the children, and promote positive moods.
5. Facilitate improvement in the child's relationship with their parents and teachers.
6. Provide the children's parents with professional counseling with regard to anxiety relief.

The classes were held by third- and fourth-year students pursuing a Bachelor's degree in Psychological-Pedagogical Education under the guidance of a group of mentors represented by instructors at the Department of Pedagogical and Psychological-Pedagogical Education at Sochi State University.

Each class had the following structure:

1. Greeting ritual.
2. Contact establishment: games and exercises aimed at cultivating a positive attitude toward the class, the instructor, and the group members, knitting the participants together, and fostering emotional commitment.

3. Psycho-relaxation training session involving the use of techniques for relieving mental and muscle tension.

4. Core part of the class: psycho-technical exercises and drills aimed at helping achieve the program's objectives. The exercises were ordered in such a way as to ensure the alternation of various types of child activity and a change of the child's psycho-physical state: from mobile to stationary mode and from intellectual to relaxation activities.

5. Final part: art-therapeutic exercises aimed at the expression of a child's emotional state and induction of reflection.

6. Goodbye ritual: focusing on mechanisms related to parting.

Each class incorporated established greeting and goodbye rituals, which remained fixed throughout the program.

A significant block in the corrective-developmental program was work with parents, which included professional counseling (oral and written consultations; counseling via the Internet, including via social networks and instant messengers), one-on-one conversations, joint parent-child classes, play practices, and joint parent-child training sessions (e.g., acting out a situation together).

The counseling work featured the following topics:

- Principles of creating and maintaining a favorable emotional atmosphere in the family;
- Standard child mindsets in relation to the parents and to themselves;
- Psychological types of child and the processes of excitement and retardation in a child's central nervous system;
- Characteristics of the nervous system in preschoolers.

The third stage (the formative experiment) was the final diagnostic assessment of the children's emotional well-being and anxiety levels and of the emotional microclimate in their families and involved a comparative analysis of the results obtained before and after the implementation of the corrective-developmental program.

The material employed in conducting the study included the following:

- findings from the diagnostic assessment of children attending the Coryphaeus research-and-education center and their parents;
- techniques designed to help parents create a favorable emotional atmosphere in the family (based on methodologies developed by N.V. Klyueva and Yu.V. Kasatkina);
- G.T. Chomentauskas's 'Four Generalized Mindsets in Relation to the Parents and to Yourself'.

To achieve the study's objectives, the following methods were employed:

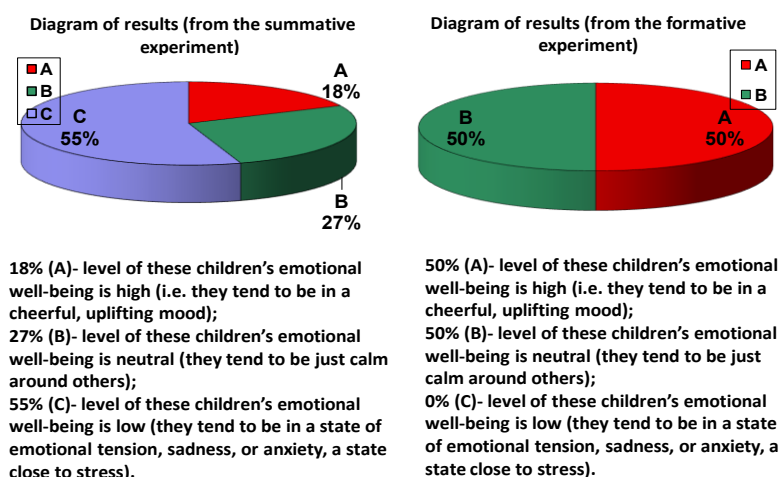
- analyzing the literature on fostering in children a personal and emotional readiness for school and on diagnostic assessment and correction of a child's emotional well-being and anxiety levels;
- designing a special corrective-developmental program;
- testing a group of children attending the Coryphaeus research-and-education center by way of A.N. Lutoshkin's Emotions Through Color ([Pashukova et al., 1996](#)) and R. Temple, M. Dorkey, and E.W. Amen's Select a Face methodologies;
- testing the children's parents by way of E.I. Zakharova's Parent-and-Child Emotional Interaction Checklist;
- conducting a comparative analysis of the results from the summative and formative experiments.

### 3. Results

The results from the experimental work conducted as part of this study substantiate the effectiveness of the herein delineated pedagogical conditions for the development of a positive emotional well-being and reduction of anxiety in children.

The comparative results from the initial and final diagnostic assessments of a child's emotional well-being based on A.N. Lutoshkin's methodology are provided in percentage terms in [Figure 1](#).

**Emotional well-being**



**Fig. 1.** Comparative results from the initial and final diagnostic assessments of a child’s emotional well-being (based on a methodology developed by A.N. Lutoshkin)

The initial diagnostic assessment, conducted in September of 2018, revealed the following: 18 % of the children exhibited a high level of emotional well-being (these tended to be in a cheerful, uplifting mood most of the time); the level of emotional well-being in 27 % of the children was neutral (these tended to be just calm around others); 55 % of the children exhibited a low level of emotional well-being (these tended to be in a state of emotional tension, sadness, or anxiety, a state close to stress).

The results from the final diagnostic assessment, conducted in May of 2019, revealed an improvement in the children’s emotional well-being, with 50 % of the subjects now characterized by a high level of emotional well-being (i.e., a tendency to be in a cheerful mood) and 50 % of the subjects now exhibiting a neutral level of emotional well-being (i.e., a tendency to be just calm around others).

The number of those with a low level of emotional well-being (i.e., those tending to be in a state of emotional tension, sadness, or anxiety, a state close to stress) was now zero.

The authors compared the significance of the results from their diagnostic assessment of a child’s emotional well-being obtained at its initial and final stages using a two-sample z-test for two population proportions (Table 1).

**Table 1.** Significance of Differences in the Subjects’ Distribution by Emotional Well-Being Levels at the Initial and Final Stages of the Diagnostic Assessment

Level of emotional well-being	Total children, initial assessment	Total children, final assessment	Z-score	P value	Significance of differences (at p= 0.05)
High degree of emotional well-being	3	8	-1.861	06288	Not significant
Neutral degree of emotional well-being	4	8	1.4606	1443	Not significant
Low degree of emotional well-being	9	0	3.5386	0004	Significant



As evidenced from Table 1, there was a significant decline in the number of children whose type of emotional well-being can be classified as emotional tension. This makes it possible to conclude that the implementation of the corrective-developmental program did have a positive effect on the emotional well-being of the children who took part in the study.

The authors also conducted a comparative analysis of the results from the initial and final diagnostic assessments of a child’s anxiety levels based on R. Temple, M. Dorkey, and E.W. Amen’s Select a Face methodology (Table 2).

**Table 2.** Comparative Analysis of the Subjects’ Distribution by Anxiety Level at the Initial and Final Stages of the Diagnostic Assessment

Picture	Initial diagnostic assessment		Final diagnostic assessment	
	Choice		Choice	
	*Sad face	*Happy face	*Sad face	*Happy face
1. Playing with younger children	8 (50 %)	8 (50 %)	6 (36 %)	10 (64%)
2. A child and a mother with a baby	5 (31 %)	11 (69 %)	7 (43 %)	9 (57%)
3. An object of aggression	9 (56 %)	7 (44 %)	6 (36 %)	10 (64%)
4. Dressing	11(69 %)	5 (31 %)	6 (36 %)	10 (64%)
5. Playing with older children	5(31 %)	11 (69 %)	5 (28 %)	11 (72%)
6. A child being put to bed	10 (63 %)	6 (37 %)	7 (43 %)	9 (57%)
7. Washing up	8 (50 %)	8 (50 %)	6 (36 %)	10 (64%)
8. Scolding	9 (56 %)	7 (44 %)	8 (50 %)	8 (50%)
9. Ignoring	11 (69 %)	5 (31 %)	10 (64 %)	6 (36%)
10. Being aggressive	7 (44 %)	9 (56 %)	8 (50 %)	8 (50%)
11. Putting his/her toys away	9 (56 %)	7 (44 %)	7 (43 %)	9 (57 %)
12. Isolation	7 (44 %)	9 (56 %)	6 (36 %)	10 (64 %)
13. A child with his/her parents	4(25 %)	12(75 %)	5(28 %)	11(72 %)
14. Eating alone	11(69 %)	5(31 %)	12(71 %)	4(29 %)

Note: The sample comprised 16 children of preschool age

The children were distributed by anxiety level based on their choice of face in the pictures. At the initial stage of the diagnostic assessment, the subjects were distributed by anxiety level as follows: 18.75 % – low anxiety index (three children only); 31.25 % – medium anxiety index (less than half of the children); 50 % – high anxiety index.

During the test, children with high anxiety levels looked uncomfortable, nervous, and worried. Some exhibited heightened motor activity (e.g., leg shaking, hair twirling, and lower lip biting). Certain children showed physiological signs of increased anxiety (e.g., rapid breathing and sweating palms). During the diagnostic assessment, highly anxious children tended to pick a picture with a sad face in it. When asked why that particular picture, these individuals would typically respond by saying something like ‘Because they scold me’, ‘Because they punish me’, ‘Because everyone ignores me’, or ‘Because no one wants to play with me’.



At the final stage of the diagnostic assessment, the subjects were distributed by anxiety level as follows: 31.25 % – low anxiety index; 43.75 % – medium anxiety index; 25 % – high anxiety index.

The authors compared the significance of the subjects’ distribution by anxiety level at the diagnostic assessment’s initial and final stages using a two-sample z-test for two population proportions (Table 3).

**Table 3.** Significance of Differences in the Subjects’ Distribution by Anxiety Level at the Initial and Final Stages of the Diagnostic Assessment

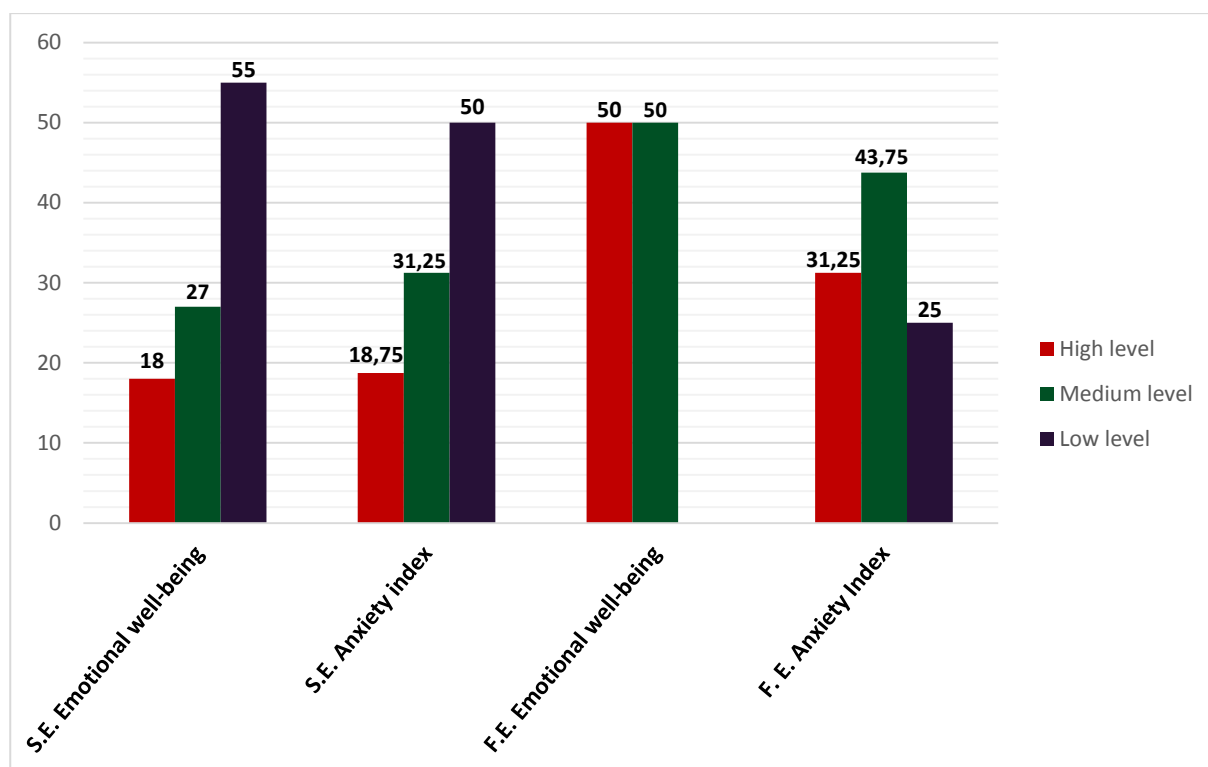
Anxiety index	Total children, initial assessment	Total children, final assessment	Z-score	P value	Significance of differences (at p= 0.05)
High	8	5	1.0798	28014	Not significant
Medium	5	7	0.7303	4654	Not significant
Low	3	4	-0.4276	6672	Not significant

Subsequent to the completion of the corrective-developmental program, the number of those with a high anxiety index dropped 25 %, with these subjects no longer tending to feel uncomfortable, nervous, and worried, and the number of those tending to behave in a reserved and confident manner rose 12.5 %. However, as evidenced from Table 3, significant changes in the subjects’ anxiety levels after the completion of the corrective-developmental program were not observed.

The changes in the children’s distribution by levels of emotional well-being and anxiety are illustrated in Figure 2.

The emotional side of parent-child interaction is a complex structured system whose elements stand in a close relationship to each other. With that in mind, the authors conducted a diagnostic assessment of the emotional climate in a family using E.I. Zakharova’s Parent-and-Child Emotional Interaction Checklist, designed to determine, in a mediated fashion, the degree of pronouncedness of each particular characteristic of this interaction in each specific dyad. The results from the initial and final tests on the participating parents based on the above methodology are displayed in Table 4.

The authors computed the average values of indicators of the emotional side of parent-child interaction through the lens of the mother-child dyad (based on a sample of 16 mothers of preschool-age children), assessed the degree to which the 11 characteristics of emotionally positive parent-child interaction are present in the relationship, and compared the significance of differences across those characteristics at the initial and final stages of the diagnostic assessment using a two-sample z-test for two population proportions (Table 4).



**Fig. 2.** The subjects' distribution by levels of emotional well-being and anxiety at the initial and final stages of the diagnostic assessment

As evidenced from Table 4, significant differences were achieved on two characteristics – (1) the parent accepting themselves as a parent and (2) the parent's ability to influence the child's emotional state.

**Table 4.** Results from the Initial and Final Diagnostic Assessments of the Emotional Climate in a Family based on E.I. Zakharova's Parent-and-Child Emotional Interaction Checklist

Characteristics of interaction	*Summative experiment	*Formative experiment	Z-score and significance of differences
Ability to perceive a state	9 (56 %)	11 (69 %)	0.7303 Not significant
Understanding of the causes behind a state	8 (50 %)	12 (75 %)	-1.4606 Not significant
Empathy	11 (69 %)	13 (81 %)	-0.8165 Not significant
The parent showing feelings of affection toward the child	12 (75 %)	15 (94 %)	-1.4606 Not significant
Accepting the child unconditionally	10 (62 %)	14 (87 %)	-1.633 Not significant
The parent accepting themselves as a parent	9 (56 %)	15 (94 %)	-2.4495 Significant
Maintaining a positive emotional background	7 (44 %)	10 (62 %)	-1.0627 Not significant
Seeking bodily contact	12 (75 %)	15 (94 %)	-1.4606 Not significant
Providing emotional support	11 (69 %)	14 (87 %)	-1.2829 Not significant

Being oriented toward the child's state in building the interaction process	9 (56 %)	13 (81 %)	-1.5255 Not significant
Ability to influence the child's emotional state	7 (44 %)	14 (87 %)	-2.6054 Significant

Note: The sample comprised 16 mothers of preschool-age children

Below is an analysis of the resulting values across the parent-child interaction blocks.

I. Perception block

As evidenced from Table 4, out of the 16 parents, only nine were able to perceive the child's state at the summative stage (56 %), as opposed to 11 parents at the formative stage (69 %), which is an increase of 13 %.

Eight parents (50 %) understood the causes behind the child's state at the summative stage, as opposed to 12 parents at the formative stage (75 %), which is an increase of 25 %.

The ability to empathize with the child was exhibited by 11 parents (69 %) at the summative stage and 13 parents (81 %) at the formative stage, which is an increase of 12 %.

II. Emotional acceptance block

Feelings of affection toward the child were shown during the process of interaction by 12 parents (75 %) at the summative stage and 15 parents (94 %) at the formative stage, which is an increase of 19 %.

The child's behavior was accepted unconditionally by 10 parents (62 %) at the summative stage and 14 parents (87 %) at the formative stage, which is an increase of 25 %.

Nine parents (56 %) accepted themselves as a parent at the summative stage, as opposed to 15 parents (94 %) at the formative stage, which is an increase of 38 %.

Seven parents (44 %) witnessed a sustainably positive emotional background at the summative stage, as opposed to 10 parents (62 %) at the formative stage, which is an increase of 18 %.

III. Block of behavioral manifestations of emotional interaction

Bodily contact was sought by 12 parents (75 %) at the summative stage, as opposed to 15 parents (94 %) at the formative stage, which is an increase of 19 %.

Emotional support was provided to the child by 11 parents (69 %) at the summative stage, as opposed to 14 parents (87 %) at the formative stage, which is an increase of 18 %.

Nine parents (56 %) were oriented, in building the interaction process, toward the child's state at the summative stage, as opposed to 13 parents (81 %) at the formative stage, which is an increase of 25 %.

The ability to have an effect on the child's state was exhibited by seven parents (44 %) at the summative stage, as opposed to 14 parents (87 %) at the formative stage, which is an increase of 43 %.

**4. Conclusion**

Based on the results of the experimental work conducted as part of the study, the implementation of the corrective-developmental program helped achieve the following statistically significant changes:

- a significant decline in the number of children under emotional tension;
- a significant rise in the number of parents who accept themselves as a parent and have the ability to influence the child's emotional state.

The above positive changes were achieved thanks to the following:

- the parents conducting axiological analysis of the children's actions and deeds in certain educative situations, with a focus on evaluating themselves against a backdrop of the activity of others;
- the parents performing dynamic modeling and forecasting of their own actions in certain educative situations based on a set of value orientations;
- the parents evaluating their relationship with the children and their attitude toward the children's actions and deeds in various situations.

It was found that the following outcomes related to children's emotional well-being could be achieved if the parent influences the child in a properly organized fashion:

- a significant decline in the child's emotional tension levels, with him/her tending to be in a happy, joyful state most of the time;
- the possibility of developing the child's ability to empathize emotionally with others, be a good listener in a conversation, and successfully resolve conflict situations;
- a significant decline in the child's anxiety levels.

The study's outcomes speak to the need to work in this direction with children and parents alike and substantiate the advisability of implementing corrective-developmental programs of this kind at preschool educational institutions.

## 5. Acknowledgements

The research reported in this paper was conducted via Coryphaeus, a research-and-education center for children and adolescents operating as part of Sochi State University. The facility was established on February 2, 2016 (Decision of the Academic Council of January 28, 2016, Protocol No. 5, Decree No. 64 of February 2, 2016).

## References

- Akhmedzhanov, 1995** – *Akhmedzhanov, E.R.* (1995). *Psikhologicheskie testy. Sostavlenie, podgotovka teksta, bibliografiya* [Psychological tests: Designing them, preparing the text, and related bibliography]. M. [in Russian]
- Amato, 1994** – *Amato, P.R.* (1994). Father-child relations, mother-child relations, and Offspring Psychological WellBeing in Early Adulthood. *Journal of Marriage and Family*, 56/4: 1031-42. DOI: <https://doi.org/10.2307/353611>
- Artis, 2007** – *Artis, J.E.* (2007). Maternal Cohabitation and Child Well-Being Among Kindergarten Children. *Journal of Marriage and Family*, 69/1: 222–36. DOI: <https://doi.org/10.1111/j.1741-3737.2006.00355.x>
- Barnes, 2016** – *Barnes, A.J.* (2016). Childhood Stress and Resilience. In M.R Korin (ed.), *Health Promotion for Children and Adolescents*. Springer, Boston, MA. DOI: [https://doi.org/10.1007/978-1-4899-7711-3\\_5](https://doi.org/10.1007/978-1-4899-7711-3_5)
- Barrett, Turner, 2001** – *Barrett, P., Turner C.* (2001). Prevention of anxiety symptoms in primary school children. Preliminary results from a universal school-based trial. *The British Journal of Clinical Psychology*, 40(4): 399-410. DOI: <http://doi.org/10.1348/014466501163887>
- Bierman et al., 2008** – *Bierman K.L. et al.* (2008). Promoting Academic and Social-Emotional School Readiness: The Head Start. *REDI Program Child Development*, November/December 2008, Volume 79, Number 6, pp. 1802-1817.
- Bor et al., 2014** – *Bor, W. et al.* (2014). Are child and adolescent mental health problems increasing in the 21st Century? A Systematic Review. *Australian & New Zealand Journal of Psychiatry*, 48(7): 606-16. DOI: <https://doi.org/10.1177/0004867414533834>.
- Chistyakova, 1995** – *Chistyakova, M.I.* (1995). *Psikhogimnastika* [Psychogymnastics]. M. [in Russian]
- Choi, 2018** – *Choi, A.* (2018) Emotional well-being of children and adolescents: recent trends and relevant factors //OECD Education Working Paper No. 169. [Electronic resource]. URL: <https://www.oecd-ilibrary.org/docserver/41576fb2-en.pdf?expires=1573211214&id=id&accname=guest&checksum=6C4C7FA1890F8A5F3ADFoF1CB2347AA9>
- Gozman, 1987** – *Gozman, L.L.* (1987). *Psikhologiya emotsional'nykh otnoshenii* [The psychology of emotional relationships]. M. [in Russian]
- Izard, 1980** – *Izard, K.* (1980). *Emotsii cheloveka* [Human emotions]: [Per. s ang.]. Pod red. Gozmana L.Ya., Egorovoi M.S. *Vstupitel'naya stat'ya Ol'shannikovoi A.E.* Moskva: Izdatel'stvo Moskovskogo gosudarstvennogo universiteta. [in Russian]
- Karelina, 2001** – *Karelina, A.A.* (2001). *Psikhologicheskie testy* [Psychological tests]. M. [in Russian]
- Kulagina, Kolyutskii, 2004** – *Kulagina I.Yu., Kolyutskii V.N.* (2004). *Vozrastnaya psikhologiya: polnyi zhiznennyi tsikl razvitiya cheloveka* [Developmental psychology: The complete life-cycle of a person's development]. M.: TTs Sfera. [in Russian]
- Lashley, 1991** – *Leshli, D.* (1991). *Rabotat' s malen'kimi det'mi, pooshchryat' ikh razvitie i reshat' problemy* [Working with young children, stimulating their development, and resolving their problems]. [Per. s ang.]. Moskva: Prosveshchenie. [in Russian]

[Leont'ev, 1972](#) – *Leont'ev, A.N.* (1972). Problemy razvitiya psikhiki [Issues in the development of mentality]. 3-e izd.: M.: Izdatel'stvo Moskovskogo universiteta. [in Russian]

[Nemov, 1995](#) – *Nemov, R.S.* (1995). Psikhologiya [Psychology]. V 3-kh t. T.Z. M.: Prosveshchenie, Vldos. [in Russian]

[Pashukova et al., 1996](#) – *Pashukova, T.I., Dopira, A.I., D'yakonov, G.V.* (1996). Psikhologicheskie issledovaniya: Uchebnoe posobie [Psychological research: A study guide]. M.: Izdatel'stvo «Institut prakticheskoi psikhologii». [in Russian]

[Prakticheskaya psikhologiya..., 1997](#) – *Prakticheskaya psikhologiya v testakh, ili kak nauchit'sya ponimat' sebya i drugikh* [Practical psychology in tests, or how to learn to understand yourself and others]. 1997. Moskva: AST-PRESS. [in Russian]

[Rogov, 1996](#) – *Rogov, E.I.* (1996). Nastol'naya kniga prakticheskogo psikhologa v obrazovanii [A handbook for practical psychologists in education]. M. [in Russian]

[Rubinshtein, 2003](#) – *Rubinshtein, S.L.* (2003). Osnovy obshchei psikhologii [Fundamentals of general psychology]. Sankt-Peterburg: Piter. [in Russian]

[Rutter, 1987](#) – *Ratter, M.* (1987). Pomoshch' trudnym detyam [Helping troubled children]: Per. s angl. Obshch.red. A.S. Spivakovskoi. M. [in Russian]

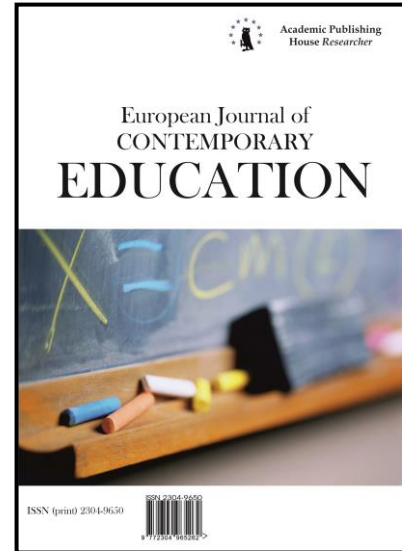
[Shapoval et al., 2004](#) – *Shapoval, I.A., Glazeeva, M.A., Feofanov, V.N.* (2004). Osnovy psikhologo-pedagogicheskoi korrektsii [Fundamentals of psychological-pedagogical correction]. Nauch. red. I.A. Shapoval. Orenburg. [in Russian]

[Troshnina, 2002](#) – *Troshnina, E.G.* (2002). Trening razvitiya zhiznennykh tselei [Training a person in the development of their life goals]. Sankt-Peterburg. [in Russian]



Copyright © 2019 by Academic Publishing  
House Researcher s.r.o.  
All rights reserved.  
Published in the Slovak Republic  
European Journal of Contemporary Education  
E-ISSN 2305-6746  
2019, 8(4): 738-750  
DOI: 10.13187/ejced.2019.4.738  
[www.ejournal1.com](http://www.ejournal1.com)

**WARNING!** Article copyright. Copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of the violation of the author(s) rights will be pursued on the basis of international legislation. Using the hyperlinks to the article is not considered a violation of copyright.



## **Bounded Rationality, Uncertainty, and Complexity as Decision-Making Contexts: A Case of One University in Russia**

Elena A. Drugova <sup>a,\*</sup>, Olga N. Kalachikova <sup>b</sup>

<sup>a</sup>Tyumen State University, Russian Federation

<sup>b</sup>National Research Tomsk State University, Russian Federation

### **Abstract**

Decision making in universities cannot be implemented in an entirely rational mode because of the effects of the bounded rationality, uncertainty, and complexity inherent to the social and organisational contexts. An empirical case study related to launching a new postgraduate educational programme as the in-depth investigation of the chain of related decisions in one university in Russia was used to explain the features of the decision-making process. Data was gathered through 1) five in-depth interviews with the key stakeholders; 2) observations of the situation stages and interviews with other stakeholders; 3) analysis of governmental documents and standards; and 4) analyses of university policies and local documents. Case analysis showed the unclear authority of the institutions involved, vague rules, exclusion of the important stakeholders from the decision process, a lack of experience and expertise, and unclear procedures. The case was interpreted through the lenses of the organized anarchy theory; power and authority perspective; risk avoidance perspective; and bounded rationality perspective. As a discussion and conclusion, it was shown that some strategies can reduce the level of uncertainty and increase the quality of the decisions made, such as decision analysis perspective, decomposition perspective, participation perspective, information perspective, and groupthink avoidance perspective. Also, the role of political negotiations, information provision, additional actions and meetings organization, systematization of the complicated issues, and organizational learning were considered. All these support more mature solutions in the university context.

**Keywords:** bounded rationality, university management, uncertainty, complexity, decision making.

---

\* Corresponding author

E-mail addresses: [e.a.drugova@gmail.com](mailto:e.a.drugova@gmail.com) (E.A. Drugova), [olgakalachikova@gmail.com](mailto:olgakalachikova@gmail.com) (O.N. Kalachikova)



## **1. Introduction**

There is a widespread strong desire to find a rational, logical, and coherent approach to decision making that could lead to practical and stable outcomes. But, as many authors have noted (Clemen, 1996; Bazerman, 2006), the whole process often is so complicated, messy, high-risk, overwhelmed with information, so full of ambiguity, unclear payoffs and differing desires and needs, and so suppressed by social expectations that “it is a wonder anything ever gets decided” (Beach, Connolly, 2005: 48). Universities as organizations led by decision makers face this complicated reality too, but the existing studies rarely examine such university decision process contexts as bounded rationality, uncertainty, and complexity. To fill this gap, this article explores 1) the impact of bounded rationality on the decision-making process in university using empirical case; 2) the influence of complexity and uncertainty as decision contexts in universities; and 3) possible key features, processes, and procedures leading to a more satisfying decision making in complex contexts. Some effective strategies are suggested: 1) decision analysis perspective, which provides opportunities to consider multiple objectives and diverse opinions, to structure decision problems, to generate alternatives, to identify critical trade-offs, and to justify previous actions; 2) decision process decomposition, which enables enriching a decision by better problem definition, consequences prediction, alternatives evaluation, and, in general, by more clear understandings of the necessary decision process stages; and 3) information perspective, which is aimed at enhancing situation framing, rules selection, best courses of action identification, and outcomes assessment. Information can be gathered through researching a business or organisation, including obtaining feedback. The significance of the approach is that it provides an opportunity to consider bounded rationality, uncertainty, and complexity as contexts of the managerial decision making in universities, deepening existing known approaches to the decision making and applying it to higher education institutions. Recommendations developed in this article may be used widely in decision-making processes in universities at different management levels, and in a variety of practical situations.

## **2. Literature review**

### **Bounded rationality and the decision-making process**

Rationality in the context of decision making refers to the “decision-making process that is logically expected to lead to the optimal result, given an accurate assessment of the decision maker's values and risk preferences” (Bazerman, 2006: 6). The rational model is based on the assumptions of how optimal decisions should be made in ideal conditions. However, in the ideas of the great number of thinkers and researchers, rationality can be used only in a limited way in the understanding the process of decision making. This position is also known as a bounded rationality framework, and is represented, first of all, by Simon, who argued that individuals could be better understood by considering their actual complicated situation, rather than a normative process of decisions (Simon, 1990). While some theorists work on a prescriptive model of decision making, developing exact mathematical methods for optimal decisions regardless the contexts (Keeney, 1982; Howard, 1988), dominant adherents of the descriptive approach focus on the confusion and complexity of the external world and cognitive specifics of the decision makers.

Descriptive decision researchers point out that an entirely rational manner of decision making never occurs in real life. For example, to make a rational decision, it is assumed that people:

(1) perfectly define the problem, (2) identify all criteria, (3) accurately weigh all of the criteria according to their preferences, (4) know all relevant alternatives, (5) accurately assess each alternative based on each criterion, and (6) accurately calculate and choose the alternative with the highest perceived value (Bazerman, 2006: 4-5).

But such circumstances are unobtainable and can never be fully created either in university or in any other organisation: there is lack of information, time, and other valuable resources that affect the process of decision making (Choo, 2006), as well as personal human cognitive and behavioral trait specifics (Kahneman, 2011).

Importantly, subjectivity and self-serving biases play an essential role leading to the bounded rationality conditions. As an example, Bazerman, considering the cases of audit failures and failed decision making, argues that “most audit failures result from systematic biases in judgment” (Bazerman, 2006: 1), which arises much in advance of the auditors’ judgment reports, at the

unconscious stage of the decisions making, and is connected to the institutional arrangements and psychological inability to maintain objectivity, regardless the auditors' honesty. "People tend to form a preference for a certain outcome and then justify this preference on the basis of fairness", notes Bazerman (Bazerman, 2006: 2). Self-serving biases can be explained by the fact that people process information not in a perfect manner: they act subjectively, putting first their personal interest, confusing it with a moral or fair deal. "The human tendency to maintain positive illusions, to make self-serving interpretations, to discount research evidence, and to overlook easily available and relevant information contributed to the "predictable surprise", writes Bazerman (Bazerman, 2006: 3).

People tend to simplify decisions, and it often occurs with heuristics. Kahneman (2011) explored three general type of heuristics, the affect heuristic, the availability heuristic, and the representativeness heuristic. He explains how heuristics occur when emotional evaluation overlaps cognitive reasoning and forces a person to rely on previously formed stereotypes. All these and some other cognitive, psychological, and behavioral characteristics contradict the rational approach and affirm its limitation in decision making.

### **Complexity and uncertainty as decision contexts**

Ambiguity, uncertainty, and disorder are critical characteristics of the modern world (Owens, 1991; Beach, Connolly, 2005), determining decision process conditions in any organization, including universities. Ambiguity leads to stress, and to maintain a proper quality of decision making under stress is a substantial present-day problem (Hart, 1991). The environment is changing rapidly: political, social, and economic conditions require high decision-making speed, confidence, and ability to maneuver and find unique solutions (Garvin, 2001).

Uncertainty can be observed not only in the organization's external environment but as a critical characteristic of the organization itself. Though organizations are usually associated with rational decision-making models, Owens (1991) confirm that there is a gap between theory and professional practice, which often does not refer to normative models. In a variety of organizations, practicing managers rarely use them in work: "Normative decision-making models have no influence on the behavior of middle- and upper-level corporate managers" (Mintzberg, Raisinghani, as cited in Owens, 1991). Very often, goals conflict and goal uncertainty is combined with procedural uncertainty (Choo, 2006), which perfectly describes modern universities. Thus, discussing the decision process in organizations, it can be argued that organizational social contexts are such that rational decision making is hard to translate into actions. This view is supported, for example, by the stupidity-based theory of organizations developed by Alvesson and Spicer, which shows that functional stupidity is an important though under-recognized component of organizational life (Alvesson, Spicer, 2012). Notably, some organizations, primarily educational, public, or illegal ones, are even more complex and complicated than others, so they can be seen as organized anarchies "characterized by problematic preferences, unclear technology, and fluid participation" (Cohen et al., 1972: 1).

Group decision-making process, widespread in organizations including educational ones, is still not very well understood. Some significant influencing phenomenon that lead to poor decision making due to the social contexts, including groupthink, have been shown. This specific and detrimental phenomenon, according to Janis, is "a mode of thinking that people engage in when they are deeply involved in a cohesive in-group, when the members' strivings for unanimity override their motivation to realistically appraise alternative courses of action" (Janis, 1982, as cited in Hart, 1991: 256). Janis argues that groupthink takes place when there are a strong and persevering leader, a high level of group cohesion, and intense pressure from the side, and lead to a gross neglect of objectives and alternatives, omission of information, subjective selectivity, poor examination of costs and risks, and mistakes in implementation and monitoring (Hart, 1991).

Group decisions are difficult to make because it requires consideration of the uncertainty and the desires of other group members (Beach, Connolly, 2005). As decision making engages multiple members with multiple interests, there is always inherent conflict: members form coalitions and use political power, promoting preferred decisions (Choo, 2006). Interestingly, Wallach, Kogan, and Bem (1962) note that spreading responsibility widely in group decisions leads to less responsible personal choice within the group, combined with the tendency to join the group. Additionally, their research confirms that persons tending to take more risk have more influence on the group than more conservative individuals.

To summarize, complexity and uncertainty are decision contexts affecting both the external environment and internal university procedures, which leads to the substantial difficulties in the process of making effective decisions. Some perspectives on how to reduce risks and increase the effectiveness of the decision-making process in such circumstances will be discussed further.

#### **Decision analysis perspective**

Decision analysis is widely used in business and government sectors as an intelligent method for addressing complex decision contexts. Clemen considers decision analysis an excellent tool, noting that “decision analysis provides effective methods for organizing a complex problem into a structure that can be analyzed” (Clemen, 1996: 2). In particular, it includes the possible courses of action, the possible outcomes and the likelihood of them, and potential consequences to be resulted from the different outcomes. This approach works with uncertainty in a unique way, not denying or ignoring it, but identifying its sources and systematically representing them.

Decision analysis involves various methods. Some authors describe such structuring tools as decision trees (Clemen, 1996; Beach, Connolly, 2005), influence diagrams (Clemen, 1996; Howard, 1988), decision matrices, expected value computations (Beach, Connolly, 2005), and clarity tests (Howard, 1988). Importantly, “in an uncertain world, good decisions can lead to bad outcomes, and vice versa” (Howard, 1988: 682), so it is crucial to make a distinction between decisions and results, actions and consequences. To evaluate a decision must mean to accentuate the stakes and the odds, not the decision results (Vlec, 1984).

#### **Decomposition perspective**

The attempts to make the decision process more accurate led to the appearance of the various models structuring the reality and reducing vagueness. Describing the rational decision-making process, Bazerman (2006) includes six steps. The first is a correct definition of the problem that will help to avoid wrong problem solving. The problem should not be described in terms of a solution, as well as being missed in excessive detailing, or to be too narrow and represent only one part of the bigger problem. The second step is to identify all criteria relevant to the issue. As all the criteria have different importance, the third step is to weight them. The fourth step is generating the alternatives, and it is important not to spend too much time and to stop before “the cost of the search outweighs the value of the added information” (Bazerman, 2006: 4). The fifth and most challenging step is to rate each alternative using each criterion. The last sixth step is to calculate weighted ratings of the alternatives and to find a final optimal decision.

Different authors describe similar steps. Indeed, Hammond, Keeney, and Raiffa (as cited in Bazerman, 2006) suggest a similar eight steps of rational decision making. Some typical stages can be discerned. Bridges suggests that “four steps are typically involved in reaching a decision: (1) defining the problem, (2) identifying possible alternatives, (3) predicting the consequences of each reasonable alternative, and (4) choosing the alternative to be followed” (Bridges, as cited in Owens, 1991: 283). Thus, following the precise steps of decision making is regarded as useful practice, with the emphasis on the decomposition and cyclicity of the process.

#### **Information perspective**

To reduce uncertainty, the decision maker must obtain and interpret appropriate information. Indeed, information-search activities require a great deal of time, energy, and resources, and have a massive impact on the quality of the decisions (Choo, 2006). Choo proposes three dimensions of the information needs: “(1) to frame a choice situation, (2) to define preferences and to select rules, and (3) to identify available courses of action and assess their projected outcomes” (2006, p. 248). Importantly, “acceptable level of performance is usually not the highest level of performance possible: rather, it is one that is good enough to fit the organization’s perception of reality and values” (Choo, 2006: 267). Information search should stop when a satisfactory solution is found.

Sometimes it can be beneficial to carry out business research, which has a purposeful and systematic framework. Mainly, it is important for the strategic decisions, which are the most difficult and unstructured. Business research is “systematic, controlled, empirical and critical investigation of phenomena of interest to managerial decision makers” (Davis, Cosenza, 1993: 9).

One more useful type of information is feedback results. “The results of one decision provide new information on which to base yet other decisions. Thus, ‘feedback loops’ were added to some process models to ensure that the outcomes of decisions would be considered as future decisions were pondered” (Owens, 1991: 267). Feedback and other kinds of information contribute to the

organizational learning, which promotes goals adaptation, rules attention, performance assessment, and in general, helps to find more viable solutions (Choo, 2006).

### **Groupthink avoidance perspective**

Some available strategies for avoiding the influence of the groupthink phenomenon that was described above also need to be examined. Janis, who first researched this phenomenon, accentuates the importance of independent experts, critical approach maintenance, and default of the preferred options (Moorhead, 1991). The ideas of Moorhead, Ference, and Neck also attract attention and impress with their thorough analyses of the phenomenon, which pays particular attention to time limits and leadership style. They suggest alerting group members to the disadvantages of the short decision time, including pressure, discouragement of dissent, and self-censorship (Moorhead, 1991). Time pressure should be reduced by any means. A leader should not be the laissez-faire type of leader. Instead, being strong and demanded, “this leader is active in directing the activities of the group but does not make known the preferred solution” (Moorhead, 1991: 548). Garvin suggests leaders to pay attention to body language of the group members to trace the signs of the hidden disaffection and disagreement (Garvin, 2001: 115). He also proposes to avoid early closures, to maintain minority views, and to value the input from “helpful Cassandras, people who are known for raising hard questions and offering fresh perspectives about the dangers of proposed policies” (Garvin, 2001: 115).

### **3. Materials and methods**

In this article, a case study as the in-depth investigation of the chain of related decisions in one particular Russian university is used to explain the character and peculiarities of the decision process. Due to this, close and detailed examination of the case and related contextual conditions was held. The case is related to the following decision problem: a new promising master`s degree educational programme (NMP) was developed in the university investigated. The idea of the programme was initially approved, but during the process of the programme launch, unpredicted obstacles appeared and led to the closing of the programme before it began, termination of education agreements with enrolled students, and a transfer of students and the programme to another university. Thus, the chain of events and decisions had led to the fact that the new programme was not supported and launched. The situation developed through several stages, each of them a part of the general decision, and the case developed, in general, satisfactorily, but the level of uncertainty gradually increased. Finally, the decision situation became a problem and then a tough decision was made. This case investigation examines what exactly happened, who were main stakeholders, why the final decision was what is was, what underlay this decision, and what the analysis of the case can reveal about the nature of decision making in the university environment.

Data was gathered from a variety of sources and by using several methods: 1) First, five in-depth interviews with the key and most engaged stakeholders were carried out. Further, the positions and occupations of the main stakeholders will be indicated but not the concrete individuals, in support of the principle of anonymity. The interviewees were: 1) the head of the new educational programme (NMP); 2) a representative of the personnel department; 3) the person responsible for the quality of education development; 4) the top decision-maker; 5) external consultant on organizational development. These respondents were selected due to their maximum involvement in the situation at different stages, due to their high expert level, and also due to their integration into the decision-making structure. Interviews included questions of an expert nature concerning ideas about the goals of opening a new education programme, its intended results, the need to build supporting processes, infrastructure, the place of the master's degree level in the structure of the educational process of the university in a whole.

2) Secondly, the included observation of the development of the situation was carried out at all its stages. The observation was implemented through participation and recording of working group meetings of the main stakeholders given below according to a specially developed scheme. It included the objectives of the discussion at the beginning of the meeting and the results reached by the participants at the end of each working group meeting. Each protocol was accompanied by the summary creating, where structural and process deficiencies and mismatches were recorded. Meetings were held with different stakeholders every two weeks for six months; each meeting lasted 1 hour; In total, the volume of the formalized observation was not less than 12 hours.



3) Thirdly, other stakeholders presented below were taken short semi-structured interviews to gather existing opinions and characteristics of the situation (10 semi-structured interviews in total).

4) Governmental documents and standards were analyzed: federal-state higher education laws and professional standards and documents governing the organization of the educational process in higher education institutions.

5) Relevant university policies and local documents were analyzed, including “The project on the transformation of education”, “Statement on the organization of educational activities within the university”, “Statement of the main education programme”, “Analysis of the competition procedures for the graduate educational programmes”, “Regulations for the design, implementation and closure of the main graduation programmes”.

Qualitative data were analyzed using the method of content analysis.

**Table 1.** Categories and subcategories of analysis

	<b>Categories of analysis</b>	<b>Subcategories – semantic units, keywords</b>
1	Norms and regulations	regulations, control, regularity (permanence, stability), responsibility, obligations, verification, accreditation, document, requirements
2	Development and change	idea, approbation, renovation, update, development, goal, opportunity, resources
3	Cooperation, partnership	we (ours, us), consent, partnership, perspective, interest, offer, interaction
4	Optimization	order, conformity, efficiency, optimality, lack, resources
5	Uncertainty	Lack of regulation, unstable, unclear, unknown, vague, new, uncertainty

**Interested parties:**

- The head of the NMP: initiated the idea and development of the new master’s degree educational programme. He has strong relationships with the industry and supports the cooperative relations with two other universities as prospective partners. He is the initiator of the process and the one who promotes it in all stages;

- Members of the Department–academics, senior lecturers, associate professors: give the expert review of the idea of the NMP and help to improve it.

- Methodical Council of the Faculty: provides expert review of the NMP.

- Methodical Council of the University on Educational Issues: provides expert evaluation and assessment of the NMP on a higher level.

- University Education Administration Office (EAO). Its role is to check that all the NMP documents are correct and that the NMP meets the legal standards.

- University Office of Chargeable Educational Services: provides organisational and financial services to all structural units of the university.

- Center for the Development of Education Quality (CDEQ): promotes new initiatives in the education and support education leaders.

- Top executive decision maker: evaluates the NMP at the final stage. After his approval, the NMP can be advertised and the enrollment process can begin.

- Office of New Enrollment: responsible for the legal support of the NMP, including preparation of education agreements between university and students.

- Universities–partners of the NMP: members of two universities who were to deliver some learning units to students and be the experts for the students’ educational project to be part of the NMP curriculum.

- Industry partners of the NMP interested in the students’ project results.

- Institute of Distance Learning: manages the work of the Moodle system for all the university departments and education programmes.
- Students: those interested in enrollment in the NMP.
- Human resources department (HRD) of the university: not involved in the decision situation at the early stages, but at the final stage, it faced the fact that an employee (the head of the NMP) intended to quit his job because of the case.
- University consultant on organizational development: tried to mediate the situation and find the best solution for everyone.

#### **4. Results**

##### **National and organizational contexts analysis**

An analysis of state regulations and legislation in the field of higher education in Russia revealed that the new law on education, Federal Law №273, passed in 2012, had significantly expanded the opportunities for citizens of the Russian Federation to gain access to the master's degree level of education, including the right to get free education of the master's degree level. The government introduced financial incentives for educational organizations to develop master programmes, systematically increasing the state expectations for the preparation of masters. For the period from 2014 to 2016, the rate of the admission of students at masters` degree level had increased by more than three times. Thus, the launch of new graduate programmes and attracting students has become one of the priority areas of educational strategy of the universities in Russia. Part 153 of the Federal Law №273 secure the right of universities to create modular, network, and distance learning masters programmes; it also supports the idea of involvement of the employers to the educational process in masters programmes.

Regarding the university organizational context, development of master programmes in experimental format began there in 2003 in connection with the transition to the implementation of a multi-level education system (bachelor + master levels). A department of magister degree education level was allocated, whose main task was to support the development and implementation of new master educational programmes in all the faculties. The department also provided organizational support to programme developers in students recruiting. Since 2011, a significant part of the faculties entered the active phase of the transition to multi-level education (bachelor + master levels). Reducing the learning and teaching time during the transition from specialist education (5 years in total) to undergraduate education (4 years in total) had led to compression of the academics` workload. At the same time, relatively new activities of developing master programmes had increased. However, by that time, many questions about new educational programmes development for this new level were largely not clear. There was an active problematization of the master's level in areas:

- content, curriculum and design, outcomes of masters education;
- disciplinary design of educational programmes, the transition to interdisciplinarity;
- organization of the educational process;
- interests of stakeholders and joint design of educational programmes with the participation of international partners.

The master degree level development was defined as the priority for the period 2015–2020 and became a subject of a series of strategic sessions at the university in 2015–2017. Specialized training was organised for graduate programmes developers with the involvement of the outer experts in 2016. Organizational support for the programmes` development was carried out by the Centre for the Development of Education Quality, established in 2015. The centre has developed regulations for organizing a project competition for new master's programmes and receiving financial support. Also, regulations have been introduced for the opening of interdisciplinary educational programmes called autonomous postgraduate educational programmes. Also, to attract students, scholarship programmes were established for postgraduate education programmes. The measures taken contributed to the increase in the activity of the design of new masters programmes. All these had led to the development of the considering case described in detail further.

Content analysis showed a combination of contradictory attitudes towards "constancy" and "variability", "duties" and "initiatives". The declared value of the distributed decision through the use of the term "we" was noted. At the same time, specific actors were not indicated by



respondents. In the statements of the administration representatives, the use of "we" referred to the groups of administrators who regulate the process; academics were mentioned as "they". Thus, the meaning of "we" is those who are developing a new educational program, but in fact – "we" means those who are regulating it. The use of keywords of the category "norms and regulation" was noted in relation to the actions of other actors, not to the activities of respondents. When analyzing the results of the situation, stakeholders stated the value of renovation and changes, but at the same time, such words as "optimization", "order", and "control" were often used.

**Decision process dynamics and concomitant difficulties**

The decision to develop and launch the considered NMP were comprised of several stages; some difficulties or problems can describe each of them:

**Table 2.** Decision process dynamics and following uncertainty problems

<b>Decision process stage</b>	<b>Following uncertainty problems and complexity difficulties</b>
<p>1. The Head of the NMP had found the partner universities and industry representatives and discussed the idea of NMP with them. Initial agreements were developed.</p>	<p>There is no clear university policy about partnerships with other universities and industry. The level of this uncertainty is high. "I did not find any clear regulations of university partnerships in educational programs", "My partners were not agree to transfer their content into our MOODLE platform because of the copyright issue" (Head of the NMP)</p>
<p>2. The head of NMP discussed the idea and main features of the NMP with members of the Departments, Methodical Council of the Faculty, the Methodical Council of the university (3 stages of discussions). The NMP was approved.</p>	<p>Master's degree education is new, the Russian education system, new programmes are not regular, and supporting processes are unclear. The policy and strategy for the development of the graduate education programme in the university and at the particular faculty are insufficient. The criteria of support for the NMP are obscure. Discussions in collegiate bodies are mostly formal. There is a lack of expertise in new educational topics. "The university development program aims to support new educational programs appearance. Unfortunately, not many academics are ready to participate in it and there is a lack of competencies" (member of Methodological Council) «We are interested in the emergence of new educational programs, but honestly speaking, the regulation of their appearance, approval and launch is still vague" (Department member)</p>
<p>3. The head of the NMP had a series of interactions with Education Administration Office (EAO) to make the NMP meet the legal education criteria. The NMP was corrected.</p>	<p>The government does not provide strict regulation to the education programmes of universities. It gives general guidelines that leave space for initiative and creativity, but the frameworks given are also too broad and open to interpretations, leading to ambiguity. "We have standard framework to regulate new educational program. It leaves some</p>

	unusual issues uncovered, so a Head of NMP have to coordinate it with his superiors” (EAO member)
4. The head of the NMP requested the Office of the Chargeable Educational Services to estimate the cost of the NMP and, based on it, identify tuition cost for future students. This inquiry caused a problem and was made with very approximate numbers as a result.	There is no standard of a financial model that can be used for the new education programmes; budgeting principles, as well as profitability parameters, break-even point, and financial performance criteria are not clear. “I did not get any substantial help with clear financial model of the Program” (Head of NMP)
5. Some required actions to launch the NMP were taken by its head: - The teaching staff was allocated. - Industry requirements for educational projects were identified. - The website was launched. - Programme enrollment conditions were declared. - Students’ applications for enrollment were collected and assessed. - Students were enrolled.	The difference between a master’s degree programme and a professional development programme is unclear. No precise rules and norms about new educational programme content development, enrollment requirements, and staff allocation were found. Interaction with the related managing structures of the university is weakly regulated. “It is clear that changes are constantly happening in education, there are many interesting courses, things to try...” (student) «It was hard to gather a teaching team for the Program, as it lays basically on individual initiative” (Head of NMP)
6. Institute of Distance Learning suggested developing programme units in Moodle for additional funding. The offer was rejected, because partner universities did not want to transfer their copyrighted teaching content to the third party. Uncoordinated actions of supporting structures were revealed.	Uncertainty in partners’ copyright content usage was discovered. “We offered this educational program to locate its content on our MOODLE platform, but they refused” (IDL representative)
7. Education agreements between university and students were considered inaccurate and terminated before the start of the semester. The top executive decision maker decided not to correct it but to stop the programme before it began. The NMP was transferred to a partner university. 90 % of enrolled students agreed to keep their choice of the programme and signed the agreement for education with this partner university.	Risks taken by the institution: - closing of the new master's programme - reputation risk - loss of profit - time costs of all the stakeholders - financial costs of programme promotion “It’s a pity that it happened” (Top executive) “I was really mad at that moment” (student)
8. The head of the NMP had discussed the situation with HRD. The discussion of the situation with management board did not happen. The situation did not become a case to scrutinise. The head of NMP was offered a position in another university; he accepted it and quit.	The situation formally did not fall under the consideration of the any commission, even though there were apparent difficulties and ambiguity during the decision process steps. The case was not recognized by the knowledge management system of the institution as worthy to scrutinise and take actions to prevent possible similar future situations. The talented employee quit. “I was very upset: I made so many efforts and

	<p>took individual initiative to put this idea forward and bring the program to launch". (Head of NMP)</p> <p>"Unfortunately, we have no power to influence this situation, as this is education management issue" (HRD)</p>
--	--

The situation showed that the primary role is that of the final top executive decision maker. All the previous stages of the programme approval by the various departments and councils were found to be complementary but powerless on the last stage of the process, although at first glance it does not seem so. This can be explained by the unclear authority of these institutions in the process of launching the NMP, vague rules, and obscure authorities. Essential stakeholders, such as enrolled students, industry partners, and partner universities were excluded or ignored in the decision process. It can be explained similarly by the lack of the relevant experience and unclear procedures of inclusion in the decision process. Consequently, the final decision was made without discussion, in a tough mode, and on unclear grounds.

## 5. Discussion

### University as an organized anarchy

Universities are perfect examples representing the model of the garbage can decision process (Cohen et al., 1972). This is characterized by problematic preferences, which were demonstrated in the case: stakeholders struggled to choose between risk and reputation, new partners and old game players, new ideas and old procedures. The university operated on various inconsistent preferences loosely connected to each other. There was a lack of coherent structure, which is shown by the sophisticated schemes of the decision process. The organization "discovers preferences through action more than it acts on the basis of preferences" (Cohen et al., 1972: 1). This is confirmed by the final decision, which contradicted the previous decision stages.

Unclear technology, which is another essential feature of the garbage can model, was also observed: the process of launching the NMP was unclear from the very beginning to the end, with no precise algorithms and rules, obscure areas of responsibility of the related supporting administrative units, and open questions in most stages of the decision process.

Fluid participation as a part of the garbage can decision process model was expressed in the relationships with industry partners and partner universities: on one hand, they were competent and authoritative parts of the agreement; on the other, they had no real power in the final decision. Their time and efforts therefore varied significantly. Fluidity was also manifested through the displacement of the student from the NMP in the current university to another university, showing uncertain organizational boundaries.

Cohen, March, and Olsen pointed out that the garbage can process is one in which problems, solutions, and participants move from one choice opportunity to another in such a way that the nature of choice, the time it takes, and the problems it solves all depend on a relatively complicated intermeshing of elements (Cohen et al., 1972: 16).

In light of that, the manner of organizational choices can be described as resolutions without reference to explicit bargaining. In the case, organizational goals are unclear or unknown, and decisions became a result of interpretation of different ideas within it.

Weick's ideas correlate with the garbage can model and also can be used to shed light on this case. He claims that "many aspects of organizations exhibit loose coupling between intentions and actions of organizational members, between system parts which should be tightly coordinated, between means and ends" (1976, as cited in Keeney, 1988: 392). Additionally, the situation is described by the procedural uncertainty (Choo, 2006). Indeed, situation analysis shows that the intention of organization members to maintain the NMP during the process of its launch had led to the action of its closing.

### Power and authority in the decision process

The NMP launching was a specific and particularly new precedent for the organization, so it is worth looking at its political mode (Choo, 2006). Organizational culture specifics require creating a powerful guiding coalition (Kotter, 2007) in the very early stages of any project.

The head of the NMP had strong alliances outside the university but weak contacts inside the institution, and his external partners were unable to influence the situation.

Administrative staff on all levels was not ready to share their authority. As Kerr showed, “the managers—while embracing the rhetoric of democracy, empowerment, and participation – have been reluctant to share power, grant autonomy, disclose information, or include employees in substantive decision making” (Kerr, 2004: 81). The organization has a strong hierarchical nature, and this means, according to Kerr, that participation rights are distributed unequally, when higher-level staff is gaining greater influence over all critical decisions and lower-level staff has little or none. The case demonstrates this very clearly.

The decision process mostly remained the advocacy-not-inquiry approach and contest more than collaborative problem solving: persuading others and defending the position dominated the constructive criticism and balanced arguments, and the outcome was seen mostly as win or lose, more than collective ownership (Garvin, 2001).

### **Risk avoidance perspective**

The case demonstrates that the head of NMP took all the main risks on himself as the central figure, leader, ideologist, and implementer of NMP project. The idea of the NMP was discussed through some meetings, and Whyte writes that the use of committees and councils leads implacably to suppression of courage and risk, and, where choosing between more and less risky courses, preference for the conservative direction (Whyte, 1956). But, as we can observe, group interactions, on the contrary, led to the acceptance of the NMP as a new and risky type of educational programme. Why did this happen? Wallach, Kogan, and Bem argue that “persons with stronger individual risk-taking proclivities tend to become more influential in the group than persons who are more conservative” (Wallach et al., 1962: 77). So the NMP was approved and went through many stages. But the final decision was not collective, and it eradicated previous achievements. Why did the group members not contradict such a decision? This can be explained by the fact that “increased willingness to take risk would eventuate from this decreased feeling of personal responsibility” (Wallach et al., 1962: 85). The final responsibility was taken by a person who was not a part of any discussion group, acted personally, and preferred not to take risks.

### **Bounded rationality as a decision context**

Was the chain of decisions described in the case rational? Analyzing all its stages, we can see that this question is complicated, because the decision situation initially followed seemingly rational procedures and rules, but later the level of uncertainty and ambiguity increased, significant lack of information was revealed, and potential heuristics were suspected. Thus it is hard to explain this situation through rational lenses, because there was no knowledge about possible alternatives, no clear decision rules, no risk level determination and understanding of consequences. Additionally, “values by which alternative consequences of action can be compared in terms of their subjective value” (March, 1991: 97) were also not clear. Stakeholders could not to identify criteria and accurately weigh all the relevant alternatives, calculate, and choose among the alternatives (Bazerman, 2006: 4-5). In addition, Owens writes that a variety of organizations’ research has proven that practicing administrators and middle- and upper-level managers rarely use normative decision models in actual work, they hardly influence their behavior (Owens, 1991). Thus, it is preferable to analyze the case through the lens of bounded rationality.

### **Possible alternatives and required actions**

Some actions can be suggested to improve the course of such decision situations. First, political negotiations should be carried out. It means that to reduce risk resistance, the primary decision maker should have been involved in discussions in previous stages. Also, to increase the chances of the acceptance of the preferable decision, the head of the NMP should have been negotiating with the dominant local coalitions and gotten prior support or at least a neutral position from them. In any case, the powerful coalition should be created at the earliest stages of the project. In general, the mode of the decision-making process would have been better oriented to the inquiry approach rather than an advocacy approach (Garvin, 2001).

Second, information as a crucial part of the decision process should have been found and provided (for example, official regulation of the relationship with external partners). An advantageous type of information is the feedback results. Such results can “ensure that the outcomes of decisions would be considered as future decisions were pondered” (Owens, 1991: 267).

Feedback from the head of NMP could give priceless information on the current system errors and process gaps.

Third, additional supportive actions should be made where needed. If there is too high a level of uncertainty, it is better to postpone the final decision and organize separate additional meetings regarding the missing procedures and standards for any new educational programme, which can help to decrease a level of ambiguity, uncertainty, and disorder.

Fourth, to systematize the complicated decision process can be helpful. It would be beneficial to use a decision tree or some other decision analysis instrument to present the entire complicated process, all its stages, elements, and stakeholders (Keeney, 1988). It could help to show the blind spots in the organizational processes scheme and prepare a plan of additional supportive actions. Such tools can be beneficial both for individuals and group of stakeholders, revealing multiple objectives, structuring the decision problem, identifying trade-offs, and justifying previous actions.

Finally, organizational learning should be used more extensively, especially in cases like the one described. It could help to coordinate various goals inside the organization, pay more attention to the existing and missing rules, assess the performance of the departments in a new way, and eventually help to find more satisfying solutions (Choo, 2006).

## 6. Conclusion

Decision making in universities cannot be implemented in an entirely rational mode because of the effects of the bounded rationality and high level of ambiguity, novelty, and movement inherent to the social and organizational contexts. Nonetheless, some strategies can be developed to reduce the level of uncertainty and to increase the quality of the decisions made, such as decision analysis perspective, decomposition perspective, participation perspective, information perspective, and groupthink avoidance perspective. Also, the role of political negotiations, relevant information provision, additional actions and meeting organization, systematization of the complicated issues, and organizational learning were considered.

## 7. Acknowledgements

The results were obtained in the framework of the grant of the Russian Science Foundation, project No 19-18-00485 "The human dimension of the transformation processes of Russian universities: historical experience, trends and responses to the contemporary challenges". The presented case study was funded by RFBR, project number 18-013-01125 A. The use of the case represented in the article was approved by the relevant university authorities. The authors wish to thank Jean Kollantai, MSW, Tomsk State University, for her assistance with English proofreading.

## References

- Alvesson, Spicer, 2012 – Alvesson M., Spicer A. (2012). A stupidity-based theory of organizations. *Journal of Management Studies*, 49(7): 1194-1220. DOI: 10.1111/j.1467-6486.2012.01072.x
- Bazerman, 2006 – Bazerman M.H. (2006). Judgment in managerial decision making (6<sup>th</sup> ed.). Hoboken, NJ: J. Wiley.
- Beach, Connolly, 2005 – Beach L.R., Connolly T. (2005). The psychology of decision making: People in organizations (2nd ed.). Thousand Oaks, CA: Sage Publications.
- Choo, 2006 – Choo C.W. (2006). The knowing organization: How organizations use information to construct meaning, create knowledge, and make decisions (2nd ed.). UK: Oxford University Press.
- Clemen, 1996 – Clemen R.T. (1996). Making hard decisions: An introduction to decision analysis (2nd ed.). Pacific Grove, CA: Duxbury Press.
- Cohen et al., 1972 – Cohen M. D., March J. G., Olsen J. P. (1972). A garbage can model of organizational choice. *Administrative Science Quarterly*, 17(1): 1-25.
- Davis, Cosenza, 1993 – Davis D., Cosenza R. M. (1993). Business research for decision making (3rd ed.). Belmont, CA: Wadsworth.
- Garvin, 2001 – Garvin D. A. (2001). What you don't know about making decisions. *Harvard Business Review*, 79(8): 108-116.
- Hart, 1991 – Hart P. (1991). Irving L. Janis' victims of groupthink. *Political Psychology*, 12(2): 247-278.

- Hodgkinson, Starbuck, 2008 – Hodgkinson G.P., Starbuck W.H. (Eds.) (2008). The Oxford handbook of organizational decision making. Oxford, UK: Oxford University Press.
- Howard, 1988 – Howard R. A. (1988). Decision analysis: Practice and promise. *Management Science*, 34(6): 679-695.
- Kahneman, 2011 – Kahneman D. (2011). Thinking, fast and slow. London, UK: Penguin.
- Keeney, 1988 – Keeney R. L. (1988). Decision analysis: An overview. *Operations Research*, 30(5): 803-838.
- Kerr, 2004 – Kerr J.L. (2004). The limits of organizational democracy. *Academy of Management Executive*, 18(3): 81-95. DOI: 10.5465/AME.2004.14776172
- Kotter, 2007 – Kotter J. P. (2007). Leading change: Why transformation efforts fail. *Harvard Business Review*, 73(2): 96-103.
- March, 1991 – March J.G. (1991). How decisions happen in organizations. *Human-Computer Interaction*, 6(2): 95-117. DOI: [https://doi.org/10.1207/s15327051hci0602\\_1](https://doi.org/10.1207/s15327051hci0602_1)
- Moorhead, 1991 – Moorhead G., Ference R., Neck C. P. (1991). Group decision fiascoes continue: Space shuttle Challenger and a revised groupthink framework. *Human Relations*, 44(6): 539-550.
- Owens, 1991 – Owens R. G. (2011). *Organizational behavior in education* (4th ed.). Needham Heights, MA: Allyn and Bacon.
- Simon, 1990 – Simon H. A. (1990). Invariants of human behavior. *Annual Review of Psychology*, 41(1): 1-19.
- Vlec, 1984 – Vlec C. (194). What constitutes 'a good decision'? A Panel Discussion among Ward Edwards, Istvan Kiss, Giandomenico Majone and Masanao Toda. *Acta Psychologica*, 56: 5-27.
- Wallach et al., 1962 – Wallach M. A., Kogan N., Bem D. J. (1962). Group influence on individual risk taking. *Journal of Abnormal and Social Psychology*, 65(2): 75-86.
- Whyte, 1956 – Whyte W. H. (1956). The organization man. New York: Simon & Schuster.





Copyright © 2019 by Academic Publishing House Researcher s.r.o.  
All rights reserved.  
Published in the Slovak Republic  
European Journal of Contemporary Education  
E-ISSN 2305-6746  
2019, 8(4): 751-760  
DOI: 10.13187/ejced.2019.4.751  
[www.ejournal1.com](http://www.ejournal1.com)

**WARNING!** Article copyright. Copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of the violation of the author(s) rights will be pursued on the basis of international legislation. Using the hyperlinks to the article is not considered a violation of copyright.



## Phonematic Awareness and Chosen Cognitive Functions of a Child

Jana Duchovicova <sup>a,\*</sup>, Elena Kovacicova <sup>a</sup>, Anvar N. Khuziakhmetov <sup>b</sup>, Agzam A. Valeev <sup>b</sup>

<sup>a</sup> Constantine the Philosopher University in Nitra, Slovak Republic

<sup>b</sup> Kazan (Volga region) Federal University, Russian Federation

### Abstract

The study presents research results in the level of phonemic awareness, particularly phonemic analysis and synthesis at children of preschool age in connection with the level of chosen cognitive functions. The study focuses more on the cognitive function of speech, namely active vocabulary and we identify whether the active vocabulary of a preschooler in Slovakia influences the level of phonemic awareness in the field of phonemic analysis and synthesis. From the results it is clear that there is a statistically significant relation between the level of phonemic awareness in the field of phonemic analysis ( $r = 0,510$ ;  $p = <0,001$ ) and also with the phonemic synthesis ( $r = 0,482$ ;  $p = <0,001$ ) and active vocabulary of children. The results show that the children, who achieved a higher level of active vocabulary, achieved also the higher level of perceptual analysis and synthesis. Thus, the findings showed that the children who achieved a higher level of active vocabulary, they also achieved a higher level of perceptual analysis and synthesis. Perceptual analysis and synthesis are the key factors of phonemic awareness that are according in a close relation with acquisition of reading and writing skills. That children entering schools with strong linguistic knowledge learn to read and write with an ease and less difficult than their peers who have lower level of vocabulary and language structures. Spoken expression is an important factor in development of a child not only in relation with actual developmental level but as a factor that can predict success of the child in school. The didactic level benefits from the research with the findings that systematic development of vocabulary of preschool children can play a significant role in development of phonemic skills of the children and furthermore, by phonemic awareness development it is possible to contribute towards developing reading and writing skills. Thus, the reading literacy can be supported.

**Keywords:** phonematic awareness, auditory analysis, auditory synthesis, active vocabulary, cognitive functions, reading literacy, strategies developing critical thinking.

---

\* Corresponding author

E-mail addresses: [j.duchovicova@ukf.sk](mailto:j.duchovicova@ukf.sk) (J. Duchovicova), [ekovacikova@ukf.sk](mailto:ekovacikova@ukf.sk) (E. Kovacicova)

## **1. Introduction**

Cognitive functions accompany humans during their whole lives. Through cognitive functions a person learns, remembers, recognizes and acquires the ability to adapt to the changing conditions of environment. They enable him processing information into mental representations and further on working with them. Speech, memory, thinking, perception, imagination and attention belong among cognitive functions. In our study we focus on the relation of the chosen cognitive functions and phonemic awareness that belong to the key predictors of acquiring reading and writing skills and literacy as it was proven by works of Bruce (1964), Liberman, Shankweiler, Fischer, Carter, (1974), Elkonin (1973). Studies of Bradley and Bryant (1978) unambiguously proved that the children with difficulties in reading reach a low level of phonemic awareness and that has been assessed as a cause of their problems in reading.

The relation of phonemic awareness and the level of the postponed reading and writing has been proven by following studies (Bryant et al., 1990; Cataldo, Ellis, 1988; Stuart, Coltheart, 1988). For example, Cataldo and Ellis (1988) searched the relation between reading, spelling and phonologic awareness in the first three years of schooling. The level of phonemic awareness was a predictor of the later development of reading and spelling in every phase of testing. These arguments attract the interest of experts in didactics for searching the effective development of phonemic awareness and also motivate to search for predictors influencing the level of phonemic awareness.

## **2. Theoretical background**

Phonological awareness presents a metalinguistic ability to recognize and manipulate the sound structure of words without focusing on their meaning at a different level of language difficulty (Phillips et al., 2008). In the theoretical frame, Carroll (2001) describes phonemic awareness within two levels of understanding. The first becomes the theory by Goswami & Bryant (1990) based on a level of phonemic awareness of preschool children and the second one is by Gomert (1992) based on epilinguistic and metalinguistic awareness. Hearing perception is the base for phonemic awareness. Hearing perception of the speech which is directly connected with the development of the self-speech is particularly important in the preschool age. Through hearing perception a child acquires a mother tongue. The first elements of speech a child recognizes around their third month of age and at the end of the first year they are able to perceive the content of simple sentences.

A child does not create his own speech but repeats the speech after adults and thus acquires meaning of the words receiving them in a complete form. Pokorna (2010) states, that perceptual differentiation develops gradually after the basic skill of using the speech altogether with its grammar structures is completed. When a child is around 4–5, he or she starts to differentiate particular words in a sentence. Chanting with rhythmical patterns and sentences dividing it into small parts help towards the development of this skill. Around the age of five a child starts perceiving particular sounds in the words (which sound is at the beginning of a word, later on which is at the end). The most difficult is to determine a sound in the middle of the word. Further discrimination in speech perception is a perception of the sound length and differentiation of palatalized (soft) and non-palatalized (hard) consonants (6–7 years). The problems in auditive perception can lead into various difficulties, as for example inability to focus attention on one acoustic stimuli and differentiate it from other sounds, an inability to analyse similar sounds, phonemes, words, towards analysing a sentence by words, mixing voiced and voiceless consonants, towards the problems with perceptual analysis and synthesis (inability to divide a word into sounds) caused by merging particular phonemes, or insufficient auditive recognition of soft and hard sounds. The problems in auditory memory can appear in disability to remember the content or form of the heard content.

Listening connected with comprehension of the spoken speech does not have to be obvious. Many times teachers and parents assume that children do not understand them. The reason for this might be a decreased ability to perceive spoken words with focus and understand them. Children either do not perceive because they cannot focus on hearing stimuli or they hear correctly but they cannot recall the content of particular words, understand their meaning (Macajova et al., 2017).

**Table 1.** Orientation data on Development of Hearing Perception up to 6 years of Age (Duchovicova, Lazikova, 2008)

Skill	Age	
<b>Perceptual Differentiation</b>	Localizes a sound	3
	Recognizes objects according to the sound	3.5
	Recognizes songs according to melodies	4
	Differentiates various words with visual stimuli	4
	Differentiates words without visual stimuli	5
	Differentiates words different in length	5
	Differentiates words different in softening	5.5
<b>Auditory Memory</b>	Differentiates non-significant syllables	6
	Repeats a three-word sentence	3
	Repeats three unrelated words	4
	Repeats four-word sentence	4
	Repeats four unrelated words	5
	Repeats a five-word sentence	5
<b>Perceptual analysis and Synthesis</b>	Repeats five non-related words	6
	Claps a word into syllables	4
	Determines a number of syllables	5
	Determines the first sound in a word	5
	Determines the last sound in a word	5.5
	Determines whether the word contains the given sound	6
	Forms a word from sounds	6
<b>Perception of Rhythm</b>	Analyses a word into phonemes	6
	Determines whether two rhythmical structures are the same	5
	Imitates the rhythm	5

Within the context of phonological abilities there is a term phonematic and phonological awareness. According to Jost (2011) phonological processing covers:

1. Phonological awareness,
2. Short-term phonological memory – an access to phonological information in the long-term memory,
3. A modulation factor that involves abilities to process melody, intonation and rhythm of a speech

Phonemic awareness covers:

1. An ability of analysis (awareness of rhymes, syllables, phonic awareness. Phonic awareness covers analysis of the first phoneme in a word, an analysis of the last phoneme in the word and analysis of the middle phoneme in a word).
2. An ability of synthesis

Phonemic hearing is also a part of phonemic awareness and it represents an ability to recognize phonemes by ear in the words that have meaningful function. According to Kutalkova (2005) phonemic hearing provides connecting sounds into words and division of the word into sounds, thus perceptual analysis and synthesis. Inadequately developed phonemic hearing is considered to be one of the main causes of dyslexia. Perceptual analysis represents an ability of a child to split a verbal expression into smaller segments (sentences, words, syllables and sounds). Perceptual synthesis is a reverse process. The basis is a cognitive activity that runs in unseparated unity of every cognitive process of perception, sense, imagination, thinking and certain cognitive operations (Macajova et al., 2017). Phonemes as abstract units of a language are reachable only by analysis. When a child acquires a language, he/she learns sound units (words) that are connected with notions. A phoneme is only a fraction of the unity and does not bear any notion (Jost, 2011). A maturity of a child can refer to premises of the correct perceptual analysis and synthesis,

achieving a necessary cognitive processes and systematic perception, quality of attention, good language handling, and well-fixed vocabulary (Macajova, 2011). In synthesis it is not just about composition of sentences from words, or words from sounds. There is a connection of two processes that is comprehension and verbal fluency. Verbal comprehension is tightly connected with receptive ability to understand spoken and written input of words, sentences, paragraphs and verbal fluency is an expressive ability to create a language output (Sternberg, 2009).

Metsala (1999) confirmed by research a mutual interconnection of phonologic abilities and speech development and the meaning is seen mainly in the scope of a preschool child vocabulary. The ability based on which the child recognizes bigger and gradually smaller speech units, is in the tight connection with the process of word acquisition. According to Byrne (1998) the meaning of vocabulary is not continuous for phonological abilities. He points at the period of a quick speech development, i.e. between 18 months to 3 years of a child. In connection with broadening vocabulary a child creates also a certain scope of phonologic awareness. The authors mentioned in the paper also note down that phonological awareness does not have to have essential influence on further vocabulary acquisition. The relation of vocabulary and phonemic awareness is described in the studies by Walley et al., 2003; Edwards et al., 2004; Munson et al., 2005.

A study by Muter, Hulme, Snowling (2004) shows that phonologic subsystem of a language influences primarily an initial development of literacy. The authors state that predictors of phonemic sensitivity, i.e. sound recognition, are cognitive functions, an ability to recognize words, active vocabulary and grammar skills. The research of preschool children literacy by the authors Pinto, Bigozzi, Vezzani and Tarchi (2017) reveals that it is obvious that a significant predictor for the process of reading is comprehension of the writing process. Phonemic awareness influences also reading from the reason that it is integrated in comprehension and knowledge necessary for a writing system. A significant finding is a fact that word segmentation into syllables and sound isolation bears “a significant rate of responsibility for the process of the early phases in reading skill development” (Majova, 2009). The meaning is accredited also to perceptual synthesis. This opinion is confirmed also by a longitudinal research by Wagner, Torgesen and Rashotte (1994). The authors label perceptual analysis and synthesis as a key skill influencing the ability to learn how to read. Within the last part of phonologic awareness according to Adams (1990) it is a demanding skill – manipulation with sounds that requires not only recognize the sounds from which the word consists but also omit the sounds, change them, etc. Individual differences in this ability to omit or change the sound in words are essential factors of literacy levels during the study at primary school (Majova, 2009). Similar findings are found in a study about Czech and English very young learners (Caravolas et al., 2005). This study followed the role of phonological awareness in development of reading and writing. The children with significantly linguistically and orthographically different languages in the age 7.5–11.5 years of age were tested for a predictive value of phonologic awareness for writing, speed in writing and reading comprehension. Phonological awareness was shown as a significant predictor of reading speed, correctness in writing and reading comprehension.

Based on the research findings we have created the following research intentions.

### **3. Research problem**

The subjects of our research were partial cognitive functions and phonemic awareness of children. Phonemic awareness has been a subject of research since the 80's of the 20<sup>th</sup> century in the direct interaction with the language research and literacy. It focuses on metalinguistic ability to recognize and manipulate with the sound structure of the words independently from their meaning on a different level of difficulty. The basic of phonemic awareness is a perceptual analysis and synthesis. Children in preschool age develop differentiation. If there are deficiencies in the field of hearing at preschool children, differentiations and analyses of speech sounds, then problems can occur in reading and writing development in their schooling age. based on new knowledge current focus of pre-primary pedagogy is to find various ways of how to support and stimulate phonemic awareness through educational programs and trainings as well as determinants that can stimulate or limit it.

**The aim** of our research was to find out whether the vocabulary of a child directly influences the level of perceptual analysis and synthesis. It focuses on searching the relation level of a chosen cognitive function – speech in the factor of **active vocabulary with the phonemic awareness**

of Slovak children at preschool age. Following this aim, the research problem is a relation of perceptual analysis and synthesis with the active vocabulary of children in preschool age. Based on the studied researches in the field of phonemic awareness and cognitive functions we expect a positive relation.

There are two research hypotheses formulated within a research problem:

Hypothesis 1: The children who reach a higher level of active vocabulary, reach a higher level in perceptual analysis.

Hypothesis 2: The children who reach a higher level of active vocabulary, reach a higher level in perceptual synthesis.

#### 4. Research Methods

The choice of testing instruments that enabled us to identify the level of phonemic awareness children, was based on the analysis by Janeckova (2014) who collected the most commonly used diagnostic instruments of phonemic hearing by speech therapists. After the evaluation of measuring qualities of instruments and their availability, we chose the *Exam of perceptual analysis and synthesis (SAS)* by Z. Matejček for the testing instrument. The test consisted of two parts. Firstly, we carried out the perceptual analysis because it represents an easier part for children. In this part the children got the task to divide words into sounds. In the perceptual synthesis a reversed task is required. Particular sounds were read to children and after that they had a task to join the sounds correctly into the words. While taking this exam we always used the example to make it clear for the children.

We chose the *IQ test WISC III*, particularly a subtest 8 Slovník (Wechsler, 2006) for the level identification of cognitive functions, particularly the level of speech. Due to the fact that the instrument is standardized for the age group of 6 years of age, this factor further in the research influenced also the age of the tested children. Statistic processing of the data was realized through *Kolmogorov-Smirnov Test* that confirmed the data normality, *Pearson correlation coefficient* that searched for mutual relations of variables.

The research was carried out in the pre-primary schools in Nitra region and this fact partially limits the generalization of the results, however, our findings are considered to be piloting for searching relations of the level of cognitive functions with phonemic awareness. The choice of preschools was based on availability and the choice of the children in the preschools was intentional as the sample consisted of the children who had reached 6 years of age. Overall, there was 52 children, of which 58 % of girls and 42 % of boys taking part in the research. Pucekova (2018) participated on data collection.

#### 5. Analysis of results

The identified data were processed through mathematical and statistical methods. The data normality was found by Kolmogorov and Smirnov test, based on which we found out that the data were normally distributed (KS = 0,085, p = 0,200; KS = 0,114, p = 0,091; KS = 0,139, p = 0,013) and for other analyses we chose parametric tests.

**Table 2.** Normality of Data

Variables	Kolmogorov-Smirnov		
	Statistic	df	p
Active vocabulary	0.085	52	0.200
Perceptual analysis	0.114	52	0.091
Perceptual synthesis	0.139	52	0.013

**Table 3.** Minimal/maximum score, average and standard deviation at all the children in total

Total	N	Minimum	Maximum	M	SD
Active Vocabulary	52	6	32	17.83	6.573



<b>Perceptual Analysis</b>	52	0	20	6.19	4.366
<b>Perceptual Synthesis</b>	52	0	18	5.35	4.934

Verification of research hypotheses. Hypothesis 1 focused on the relation of active vocabulary with a level of perceptual analysis. We assumed that the children, who reach a higher level in active vocabulary, reach also a higher level of perceptual analysis. The findings are shown in [Table 4](#).

**Table 4.** Relation of active vocabulary with perceptual analysis

<b>Variables</b>	<b>N</b>	<b>M</b>	<b>SD</b>	<b>r</b>	<b>p</b>
<b>Active Vocabulary</b>	52	17.83	6.573	0.510	<0.001
<b>Perceptual Analysis</b>	52	6.19	4.366		

*\*Comment: N – number; M – average; SD – standard deviation; r – Pearson correlation coefficient; p – significance level*

Thanks to Pearson correlation coefficient we found out that there is statistically very significant relation between active vocabulary with perceptual analysis ( $r = 0,510$ ;  $p = < 0,001$ ). That means that active vocabulary acquired by a child has a significant relation with the level of perceptual synthesis as a key part of phonemic awareness.

Our hypothesis assumed that the children who reach a higher level of active vocabulary, reach also a higher level of perceptual analysis. Based on the result of our research we consider this hypothesis to be confirmed.

Hypothesis 2 focused on the relation of a level in active vocabulary with a level of perceptual synthesis. We assumed that the children who reach a higher level of active vocabulary, reach also a higher level of perceptual synthesis. The findings are shown in [Table 5](#).

**Table 5.** Relation of perceptual synthesis and active vocabulary

<b>Variables</b>	<b>N</b>	<b>M</b>	<b>SD</b>	<b>r</b>	<b>p</b>
<b>Active vocabulary</b>	52	17.83	6.573	0.482	<0.001
<b>Perceptual Synthesis</b>	52	5.35	4.934		

*\* Comment: N – number; M – average; SD – standard deviation; r – Pearson correlation coefficient; p – significance level*

The result in [Table 4](#) present findings that there is a statistically significant relation between active vocabulary and perceptual synthesis at children of preschool age (6-year olds), based on which we can state that the hypothesis was confirmed.

## 6. Conclusion

The aim of our research was to find out the relation of partial cognitive functions with phonemic awareness. In a research problem we focused on a relation of active vocabulary and perceptual analysis and synthesis at Slovak children in preschool age. We were searching how active vocabulary influences perceptual analysis. We found out that there is a statistically significant relation between the variables ( $r = 0,510$ ;  $p = < 0,001$ ). In confirming the relation between active vocabulary and a level of perceptual synthesis we came to the same results ( $r = 0,482$ ;  $p = < 0,001$ ). Thus, the findings showed that the children who achieved a higher level of active vocabulary, they also achieved a higher level of perceptual analysis and synthesis. Perceptual analysis and synthesis are the key factors of phonemic awareness that are according to the studies ([Pinto et al., 2017](#); [Elhassan et al., 2017](#); [Moats, Tolman, 2009](#); [Vaessen, Blomert, 2013](#); [Ehri, 2005](#); [Ehri, Roberts, 2006](#); [Tucker et al., 2016](#); [Muter et al., 2004](#)) in a close relation with acquisition of reading and writing skills. [Kasacova et al. \(2017\)](#) state that children entering schools



with strong linguistic knowledge learn to read and write with an ease and less difficult than their peers who have lower level of vocabulary and language structures. Spoken expression is an important factor in development of a child not only in relation with actual developmental level but as a factor that can predict success of the child in school.

The didactic level benefits from the research with the findings that systematic development of vocabulary of preschool children can play a significant role in development of phonemic skills of the children and furthermore, by phonemic awareness development it is possible to contribute towards developing reading and writing skills. Thus, the reading literacy can be supported.

A teacher's role in a preschool is to prepare a child for reading and writing, first of all through the support of comprehension of what types a writing culture consists of and how to use it regarding the different intentions of reading and writing (Zapotocna, Petrova, 2016). According to our findings, a child in preschool can be prepared for reading and writing by a systematic development of vocabulary. The development of vocabulary in early childhood should be done naturally and amusingly as a part of activities and task in preschool. Steward (2009) mentions techniques of stressing out new words that are a part of children tasks and daily activities from the environment of children and formation of new meanings of words by playing, authentic and natural use of new words in the conversations, or when talking about games. The words describing feelings and emotions play also significant roles. The words such as happy, sad, tired, lonely, cosy, uncomfortable, etc. should be covered by everyday talk.

A suggested technique is emphasizing the names of objects, switching the names of familiar and less familiar objects that are interesting for children and supporting conversation and also a frequent use of descriptive words (adjectives) expressing qualities of objects. An important strategy of developing vocabulary is emphasizing words when reading books and looking through pictures. A strategy can be an every day reading out loud, repeated reading of favourite books that can help children connect printed words and pictures of a story. When children hear a story, they draw connections of words that are heard when listening. Going through the pictures of the read books can also be supportive because a child already knows what the book is about and what words there are and probably tries to express them. An applicable technique is also integration of printed versions of words in environment that a child is surrounded by (in classroom, at home) and when a child shows an interest in one word, it is necessary to help a child identify and use it in everyday talks. Names of children should be a part of such words. Stanovich (1986), Bast, Reitsma (1997) describe so-called 'Matus effect' in the context of relation of vocabulary with learning to read and write that also confirms a significant meaning in stimulation of vocabulary at preschool age of children. In this relation there is a rule that the more words a child knows, the more they want to read. The more they read the more vocabulary they learn. More reading does not have the same effect for children starting their school with limited vocabulary, i.e. more reading does not cause bigger vocabulary. The wider methodological material of how to develop vocabulary is presented by the authors Beck, McKeown, Kucan (2002), and social factors that influence acquisition of vocabulary in early childhood is discussed by Dickinson, Cote, Smith (1993), Marvin, Beukelman, Bilyeu (1994) and others.

As vocabulary development of preschool children is not an isolated topic and falls into the wider context in the issue of communication competences development of children, within the topic we recommend also the works of national authors that processed the theoretical backgrounds and ideas for analyses and creation of curriculum of language education of preschool children (Zapotocna, Petrova, 2010); an issue of literacy from the view of its development and possibilities of didactic direction (Gavora, Zapotocna et al., 2003; Lipnicka, 2008), or studies on early literacy (Pupala, Zapotocna, 2003) and theoretical contexts of phonemic awareness as a precursor of literacy development (Macajova et al., 2017, 2019; Macajova, 2011). In order to develop communication competences Srnova (2014) recommends the teachers to create such conditions so that the children are stimulated to active speech production and acquisition of required communication skills. She emphasizes mainly the use of breathing, voice, articulation exercises into educational activities during a day by intentionally chosen games in order to develop phonemic awareness and phonemic differentiation of sounds, improve grammatical correctness in spoken expression and develop the awareness on grammatical structure of a language. Stimulative environment, professionalism of teachers and their speaking model as well as the content and

organization layout of a day in a preschool creates optimal conditions for development of the correct speech at children according to the author.

There are lots of programs for preschools focused on literacy development, phonemic awareness and language development and it is up to teachers to stimulate vocabulary of children as an inseparable part of curriculum and apply it in their every day educational practice. The paper is an output from the research project VEGA no. 1/0637/16 titled Development of a Diagnostic Tool to Assess the Level of Phonemic Awareness of Children in Preschool Age.

## 7. Acknowledgments

This work was supported by the Slovak Research and Development Agency under the contract No. APVV-15- 0368.

## References

- Adams, 1990 – Adams, M.J. (1990). Beginning to read: Thinking and learning about print. Cambridge, MA: MIT Press.
- Bast, Reitsma, 1997 – Bast, J., Reitsma, P. (1997). Matthew effects in reading: A comparison of latent growth curve models and simplex models with structured means. *Multivariate Behavioral Research*, 32 (2): 135-167. DOI: 10.1207/s15327906mbr3202\_3
- Beck et al., 2002 – Beck, I.L., Mckeown, M.G., Kucan, L. (2002). Bringing words to life. Robust vocabulary instruction. New York: Guilford Press.
- Bradley, Bryant, 1978 – Bradley, L., Bryant, P. (1978). Difficulties in auditory organisation as a possible cause of reading backwardness. *Nature*, p. 271, 746-747.
- Bruce, 1964 – Bruce, D. (1964). The analysis of word sounds. *British Journal of Educational Psychology*, 34: 158-170.
- Bryant et al., 1990 – Bryant, P. E., Maclean, M., Bradley, L.L. Crossland, J. (1990). Rhyme and Alliteration, Phoneme Detection, and Learning to Read. *Developmental Psychology*, 26(3): 429-438. DOI: 10.1037/0012-1649.26.3.429
- Byrne, 1998 – Byrne, B. (1998). The foundation of literacy: The child acquisition of the alphabetic principle. Hove: East Sussex, England: Psychology Press.
- Caravolas et al., 2005 – Caravolas, M., Volín, J., Hulme, C. (2005). Phoneme awareness is a key component of alphabetic literacy skills in consistent and inconsistent orthographies: Evidence from Czech and English children. *Journal of Experimental Child Psychology*, 92(2): 107-139.
- Carroll, 2001 – Carroll, J.M. (2001). The Development of Phonological Awareness in Preschool Children. A thesis submitted for the degree of Doctor of Philosophy. University of York, department of psychology, 230 p. [Electronic resource]. URL: <http://etheses.whiterose.ac.uk/9761/1/251812.pdf>
- Cataldo, Ellis, 1988 – Cataldo, Z., Ellis, N. (1988). Interactions in the development of spelling, reading and phonological skills. *Journal of Research in Reading*, 11(2): 89-109.
- Dickinson et al., 1993 – Dickinson, D. K., Cote, L., Smith, M.W. (1993). Learning vocabulary in preschool: Social and discourse contexts affecting vocabulary growth. In C. Daiute (Ed.), *New directions for child development, No. 61: The Jossey-Bass education series. The development of literacy through social interaction*, San Francisco, CA, US: Jossey-Bass, pp. 67-78.
- Duchovicova, Lazikova, 2008 – Duchovicova, J., Lazikova, B. (2008). Rozvoj osobnosti dietata a profesionalita ucitelky v materskej skole: stimulačno-bohacujúci program KO-SE-TO pre materske skoly. Bratislava: Iris, 249 p. ISBN 978-80-89256-28-0
- Edwards et al., 2004 – Edwards, J., Beckman, M.E., Munson, B. (2004). The interaction between vocabulary size and phonotactic probability effects on children's production accuracy and fluency in nonword repetition. *J. Speech Lang. Hear. Res.*, 47: 421-436. DOI: 10.1044/1092-4388(2004/034)
- Ehri, 2005 – Ehri, L.C. (2005). Learning to read words: Theory, findings, and issues. *Scientific Studies of Reading*, 9(2): 167-188. DOI: 10.1207/s15327909xssr0902
- Ehri, Roberts, 2006 – Ehri, L.C., Roberts, T. (2006). The roots of learning to read and write: Acquisition of letters and phonemic awareness. In: D.K. Dickinson, S.B. Neuman (Eds): *Handbook of early literacy research*. Vol. 2, London: The Guilford Press, pp. 113-131.
- Elhassan et al., 2017 – Elhassan, Z., Crewther, S.G., Bavin, E.L. (2017). The Contribution of Phonological Awareness to Reading Fluency and Its Individual Sub-skills in Readers Aged 9- to 12-

years. *Frontiers in Psychology*, Apr 11. DOI: 10.3389/fpsyg.2017.00533. [Electronic resource]. URL: <https://www.ncbi.nlm.nih.gov/pubmed/28443048>

Elkonin, 1973 – Elkonin, D. (1973). USSR. In J. Downing (Ed.), *Comparative Reading*, pp. 551-580. New York: The Macmillan Company.

Gavora, Zapotocna et al., 2003 – Gavora, P., Zápotocna, O. et al. (2003). *Gramotnosť – vývin a možnosti jej didaktického usmernenia*. Bratislava: Univerzita Komenského Bratislava.

Gomert, 1992 – Gombert, J.E. (1992). *Metalinguistic Development*. Chicago: Harvester Wheatsheaf.

Goswami, Bryant, 1990 – Goswami, U., Bryant, P.E. (1990). *Phonological Skills and Learning to Read*. Hove, East Sussex: Psychology Press.

Janeckova, 2014 – Janeckova, S. (2014). *Testové materiály využívane v logopedickej intervencii*. Bakalárska práca. Vedúci bakalárskej práce Lucie Durdilová. Praha: Univerzita Karlova v Praze.

Jost, 2011 – Jost, J. (2011). *Čtení a dyslexie*. Praha : Grada Publishing. ISBN 978-80-247-3030-1.

Kasacova et al., 2017 – Kasacova, B. et. al. (2017). *Deti na prahu vzdelavania. Výskumné zistenia a pedagogické inspirácie*. Banská Bystrica: BELANIUM. p. 283.

Kutalkova, 2005 – Kutalkova, D. (2005). *Vyvoj detskej reci krok za krokom*. Praha: Grada Publishing. ISBN 80-247-1026-9.

Lieberman et al., 1974 – Lieberman, I., Shankweiler, D., Fischer, F.W., Carter, B. (1974). Explicit syllable and phoneme segmentation in the young child. *Journal of Experimental Child Psychology*, 18: 201-212.

Lipnicka, 2008 – Lipnicka, M. (2008). *Stimulácia rozvoja grafomotoriky a počiatočného písania detí predškolského veku v prevencii poruchy písania*. Banská Bystrica: Pedagogická fakulta UMB, ISBN 978-80-8083-549

Macajova, 2011 – Macajova, M. (2011). *Jazyková gramotnosť: teórie a metódy jej rozvoja*. Nitra: Univerzita Konstantína Filozofa. ISBN 978-80-558-0005-9.

Macajova et al., 2017 – Macajova, M., Grofcikova, S., Zajacova, Z. (2017). *Fonologické uvedomovanie ako prekurzor vyvinu gramotnosti*. Nitra: UKF. ISBN 978-80-558-1212-0.

Macajova et al., 2019 – Macajova, M., Grofcikova, S., Zajacova, Z., (2019). Creation of rhymes as part of the development of phonemic awareness of preschool children. *XLinguae*, 12(3): 66-79. DOI: 10.18355/XL.2019.12.03.06

Majova, 2009 – Majova, L. (2009). *Fonologické dovednosti a jejich význam v počátečních fázích rozvoje čtení*. *Pedagogika*, 59(1): 17-23.

Marvin et al., 1994 – Marvin, C.A., Beukelman, D.R., Bilyeu, D. (1994). Vocabulary-use patterns in preschool children: Effects of context and time sampling. *Augmentative and Alternative Communication*, 10(13): 224-236.

Metsala, 1999 – Metsala, J.L. (1999). Young children's phonological awareness and nonword repetition as a function of vocabulary development. *Journal of Educational Psychology*, 91(1): 3-19. [Electronic resource]. URL: <http://dx.doi.org/10.1037/0022-0663.91.1.3>

Moats, Tolman, 2009 – Moats, L., Tolman, C. (2009). Excerpted from *Language Essentials for Teachers of Reading and Spelling (LETRS): The Speech Sounds of English: Phonetics, Phonology, and Phoneme Awareness (Module 2)*. Boston: Sopris West.

Munson et al., 2005 – Munson, B., Edwards, J., Beckman, M.E. (2005). Relationships between nonword repetition accuracy and other measures of linguistic development in children with phonological disorders. *J. Speech Lang. Hear. Res.*, 48: 61-78. DOI: 10.1044/1092-4388(2005/006)

Muter et al., 2004 – Muter, V., Hulme, C., Snowling, M.J., Stevenson, J. (2004). Phonemes, Rimes, Vocabulary, and Grammatical Skills as Foundations of Early Reading Development: Evidence From a Longitudinal study. *Developmental Psychology*, 40(5): 665-681. DOI: 10.1037/0012-1649.40.5.665

Phillips et al., 2008 – Phillips, B.M., Clancy-Menchetti, J., Lonigan, C.J. (2008). Successful phonological awareness instruction with preschool children: Lessons from the classroom. *Topics in Early Childhood Special Education*, 28: 3-17. DOI: 10.1177/0271121407313813

Pinto et al., 2017 – Pinto, G., Bigozzi, L., Vezzani, C., Tarchi, C. (2017). Emergent literacy and reading acquisition: longitudinal study from kindergarten to primary school. *European Journal of Psychology of Education*, 32(4): 571-587.

**Pokorna, 2010** – Pokorna, V. (2010). Vyuvoje poruchy uceni v detstvi a dospelosti. Praha: Portal. ISBN 978-80-7367-773-2.

**Pucekova, 2018** – Pucekova, N. (2018). Kognitivne funkcie dietata a fonematicke uvedomovanie. Diplomova praca. Skolitel: Jana Duchovicova, Nitra: PF UF v Nitre, 60 p.

**Pupala, Zapotocna et al., 2003** – Pupala, B., Zapotocna, O. (Eds.) (2003). Rane studie o ranej gramotnosti. Bratislava: Vydavatelstvo UK, 152 p.

**Srnova, 2014** – Srnova, M. (2014). Obrázkový abecedár – Súbor pracovných kariet na rozvíjanie komunikatívnych kompetencií u detí predškolského veku. Bratislava: MPC, 70 p. ISBN 978-80-8052-865-2. [Electronic resource]. URL: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5387103/>

**Stanovic, 1986** – Stanovich, K.E. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly*, 21(4): 360-407.

**Sternberg, 2009** – Sternberg, R.J. (2009). Kognitivní psychologie. Praha : Portál. ISBN 978-80-7367-638-4.

**Steward, 2009** – Steward, D. (2009). [Electronic resource]. URL: <https://teachpreschool.org/2009/10/24/building-a-childs-vocabulary-in-preschool/>

**Stuart, Coltheart, 1988** – Stuart, M., Coltheart, M. (1988). Does reading develop in a sequence of stages? *Cognition*, 30(2): 139-181. DOI: [http://dx.doi.org/10.1016/0010-0277\(88\)90038-8](http://dx.doi.org/10.1016/0010-0277(88)90038-8)

**Tucker et al., 2016** – Tucker, R., Castles, A., Laroche, A., Deacon, S.H. (2016). The nature of orthographic learning in self-teaching: Testing the extent of transfer. *Journal of Experimental Child Psychology*, 145(16): 79-94. DOI: 10.1016/j.jecp.2015.12.007

**Vaessen, Blomert, 2013** – Vaessen, A., Blomert, L. (2013). The cognitive linkage and divergence of spelling and reading development. *Scientific Studies of Reading*, 17(2): 89-107. DOI: 10.1080/10888438.2011.614665

**Wagner et al., 1994** – Wagner, R.K., Torgesen, J.K., Rashotte, C.A. (1994). Development of reading-related phonological processing abilities: New evidence of bidirectional causality from a latent variable longitudinal study. *Developmental Psychology*, 30(1): 73-87.

**Walley et al., 2003** – Walley, A.C., Metsala, J.L., Garlock, V.M. (2003). Spoken vocabulary growth: its role in the development of phoneme awareness and early reading ability. *Read. Writ.*, 16: 5-20. DOI: 10.1023/A:1021789804977

**Wechsler, 2006** – Wechsler, D. (2006). WISC-IIIISK. Wechslerova inteligenčná škála pre deti. Autori slovenskej verzie V. Dockal, E. Kretova, B. Kundratova, B. Sedlacova, M. Tesar. Praha: Hogrefe – Testcentrum.

**Zapotocna, Petrova, 2010** – Zapotocna, O., Petrova, Z. (2010). Jazykova gramotnost v predškolskom veku. Trnava: Trnavska univerzita. ISBN 978-80-8082-404-4.

**Zapotocna, Petrova, 2016** – Zapotocna, O., Petrova, Z. (2016). Jazyk a komunikácia – metodická príručka k vzdelávacej oblasti štátneho vzdelávacieho programu pre predprimárne vzdelávanie v materských školách. Bratislava: ŠPÚ.





Copyright © 2019 by Academic Publishing  
House Researcher s.r.o.  
All rights reserved.  
Published in the Slovak Republic  
European Journal of Contemporary Education  
E-ISSN 2305-6746  
2019, 8(4): 761-778  
DOI: 10.13187/ejced.2019.4.761  
[www.ejournal1.com](http://www.ejournal1.com)

**WARNING!** Article copyright. Copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of the violation of the author(s) rights will be pursued on the basis of international legislation. Using the hyperlinks to the article is not considered a violation of copyright.



## Analysis of Sport Motivation Factors amongst Eastern European Higher Education Students

Veronika Fenyves <sup>a</sup>, Krisztina Dajnoki <sup>b,\*</sup>, Dóra Kerezsi <sup>a</sup>, Éva Bácsné Bába <sup>c</sup>

<sup>a</sup> Institute of Accounting and Finance, Faculty of Economics and Business, University of Debrecen, Hungary

<sup>b</sup> Institute of Management and Organization Sciences, Faculty of Economics and Business, University of Debrecen, Hungary

<sup>c</sup> Institute of Rural Development, Tourism and Sports Management, Faculty of Economics and Business, University of Debrecen, Hungary

### Abstract

The annually organized Campus Festival in Debrecen is one of the musical summer festivals in Hungary, which attract masses of people and consider higher education students as their primary target community. Besides musical events, organizers of the Campus Festival put a special emphasis on the promotion of the sports life of the visiting audience. The Campus Sports Festival is organized every year; it aims to popularize sports and sporting activities and to create a social event where students, fans and athletes of Hungarian and foreign (Romanian, Slovakian and Ukrainian) higher education institutions are able to establish relationships with each other. The aim of a questionnaire survey prepared in 2017 was to carry out an assessment of needs, in the scope of which the opinion and demand of higher education students related to sports festivals and leisure sports is surveyed. Present study introduces the sporting habits of higher education students and their motivations related to sports and the sports festival. The analysis was carried out by means of the SPSS software package, while the differences among the countries were studied using Pearson's Chi-square test and the Mann-Whitney test and Categorical Principal Component Analysis. It was established that higher education students belonging to the sample prefer active entertainment and one of their favourite leisure activities is doing sports and that the scale of values of the surveyed higher education students is mostly influenced by fellow students and friends. It was also found

---

\* Corresponding author

E-mail addresses: [dajnoki.krisztina@econ.unideb.hu](mailto:dajnoki.krisztina@econ.unideb.hu) (K. Dajnoki),  
[fenyves.veronika@econ.inudeb.hu](mailto:fenyves.veronika@econ.inudeb.hu) (V. Fenyves), [kerezsi.dora@econ.unideb.hu](mailto:kerezsi.dora@econ.unideb.hu) (D. Kerezsi),  
[bacsne.baba.eva@econ.unideb.hu](mailto:bacsne.baba.eva@econ.unideb.hu) (É.B. Bácsné)

that for higher education students, health is a more important motivational factor – in relation with sports – than physical appearance.

**Keywords:** sport festivals, leisure sport, sporting, university.

## **1. Introduction**

In Hungary, three to six thousand festivals are organized each year, since in the 21<sup>st</sup> century these cultural events seem to be the most marketable from amongst cultural products. This is confirmed by the fact that annually, these festivals host five to six million visitors (Benedek, Stark, 2007). One of the festival types is represented by summer music festivals that attract great masses of people. Due to their nature, these events primarily seek to meet the needs of younger generations. Higher education students constitute a special segment of this age group. Only two of the Hungarian popular music festivals focus on higher education students as target audiences (Bácsné, 2014a). One of these two festivals is the Campus Festival, which has been organized in Debrecen since 2008 and the significant proportion of its visitor base is represented by the students of higher education institutions. The Campus Sports Festival is arranged as an accompanying event of the Campus Festival, organized by the University of Debrecen. The Campus Sport Festival has been an annual event since 2008 for students of higher education institutions in Hungary and abroad. The aim of the Campus Sport Festival is to promote sports and sporting activities, to create a social event where students, fans and athletes of Hungarian and foreign cross-border higher education institutions are able to establish connections among each other. Participation is allowed for students – representing higher education institutions – who are currently completing a course of at least four semesters or a school system course; and also students who obtained their final degree in a designated higher education institution in the year before the competition. The Sport Festival is an accompanying event of the Campus Festival, which combines sports and entertainment. In the first two years, it was organized with the participation of Hungarian higher education students, then in 2010 with the support of a HURO (Hungary-Romania Cross-Border Cooperation Programme) project 500 cross-border higher education students were able to enter the competition. In 2010, students of higher education institutions located in Satu Mare (Szatmárnémeti), Oradea (Nagyvárad), Timișoara (Temesvár) and Arad visited Debrecen and were able to compete in eightsports (tennis, relay race, women's basketball, football tennis, football, men's basketball, table tennis, beach volleyball) at the event which mobilized nearly 1200 people. Since the 2010 competition, there have been cross-border participants at the event every year. Over the years, institutions from Cluj-Napoca, Timișoara, Oradea, Odorheiu Secuiesc and Sfântu Gheorghe have represented Romania, while Ukraine was represented by Berehovo and Slovakia by institutions from Komárom. The event is also popular amongst Hungarian higher education institutions. Approximately 1000 higher education students attend the Campus Sports Festival each year from nearly twenty Hungarian universities and ten cross-border institutions. In 2017, organizers of the event decided it was time to come up with a needs assessment questionnaire to survey the opinions and demands of higher education students in relation to sports festivals and leisure sports. The present study deals with the questions related to the sporting habits of higher education students participating in the sample, broken down by gender. Analysis based on age is not relevant in the case of the utilized sample, because the respondents who completed the questionnaire were mostly full-time higher education students, at the age of 18-26 years. In the case of each factor (evaluation of the sports festival initiative, reasons for the importance of the sports festival, reason for neglecting sports activities, sport and event motivation), we examined the significant differences between countries and the principal component structure of sport motivation factors by means of Categorical Principal Component Analysis.

## **2. Literature Review**

### **2.1. The role of festivals in the life of young people**

The beginning of a new era for Hungarian youth took place in the 90s; the same period in the developed Western countries began in the late 50s and early 60s and ended in the 1980s. The new era was characterized by educational expansion, a wider group of young people entering secondary and higher education in increasing numbers. During the two decades of educational expansion, youth life span has become considerably longer, young people started becoming independent earlier, at the beginning of their teenage years and they have become consumers. However, they



became real adults (started working and founded a family) later. With the extension of training time, a school-based youth life stage begins, which is relatively relieved of forced money-earning activities, and which opens a wide space for personal time and personal activities (Gábor, 2015).

Together with the extended education of young people, the controlling role of family and school, and adult society in general has decreased, while media and consumer industry gained an increasingly influential position. This change led to the emergence of “festival youth”. The development of “festival youth” was accompanied by a differentiated consumer status and complete change of the communication status. This is connected with the widening age composition and the changing lifestyle of young people (Gábor, 2015).

Festival-like events became popular all over the world to meet the cultural needs of young people. Although, festivals used to be explicitly artistic events in the past, they have become a synonym of an event that particularly reflects the taste of the consumer world and offers an intensive experience and relaxed recreation (Benedek, Stark, 2007). In Hungary – though with some delay – festivals appeared and became the centre of focus for the entertainment-aimed interests of young people, proving that the young consumer base defined as “festival youth” has emerged in Hungary as well, which has a determinant characteristic: longer learning and higher education life stage (Bácsné, 2014a). In his study, (Black, 2016) examined festivals from the aspect of social sustainability and found, that smaller-scale festivals realised outside county capitals might contribute to social sustainability.

In Hungary, there have been attempts to organize festivals since the 1960s, but they were unsuccessful. The best-known Hungarian festival is organized every year in August in Budapest; it is called the “SZIGET Festival”. Among youth festivals, EFOTT definitely deserves to be mentioned. The National Touristic Meeting of University and College Students (Hungarian abbreviation: EFOTT) was organized in 1976 for the first time. Campus Festival and EFOTT consider higher education students their primary target audience, but while EFOTT draws from a national base, the Campus Festival focuses primarily on students within the region, especially the students of Debrecen (Bácsné, 2014b). Besides musical features, the organizers of both festivals put great emphasis on boosting the touristic, cultural and sport life of visitors. According to researchers, sports tourism is the most dynamically developing area of tourism (Dobay et al., 2016; Gibson, 2010).

Sport and Tourism are not just about the management and operations of mega events; they also concern offering the consumer specific Sport and Tourism related services and experiences. The subject is clearly big enough to warrant serious consideration from industry, whilst at the same time, specific enough to sustain academic interest and development (Gammon et al., 2003). According to (Hallmann et al., 2012), sports tourism markets are very diversified and the motivation for sport tourism is multilateral. Campus Sports Festival, which is the basis of this present study, is the best example of sports tourism. Participants from different parts of Hungary and even beyond, from Romania, Ukraine and Slovakia come to the event and besides sports they have fun, build and nurse relationships and last but not least, they also discover new areas and landscapes. Travel – due to the change of environment – has an important physiological effect on the human body; therefore, the consumption of various tourism products (health, activity, sports) may strengthen this effect (Savella 2014). In the course of the design of recreational sports programmes the new needs and requirements and modified taste of younger generations as well as the changed location- and equipment-related requirements of the new demands must be taken into account (Pfau, 2016). According to a survey about three large sports events, conducted in 2010 in the United Kingdom with the involvement of 16-year-old and older participants, approximately two-thirds of respondents stated that their experience at the event encouraged them to increase their engagement in sports or physical activity. The inspirational effect has changed with the age of respondents and their attitude to sports (Ramchandai, Coleman, 2012).

## **2.2. The role of sports in the life of young people**

Numerous researches have demonstrated the positive impact of sports on the physical, spiritual and mental condition of an individual. Sport, in general, has a strong impact on the social and economic life of citizens (Miragaiaa, Coleman, 2017). "Sports has a special role in contemporary society that goes well beyond mere entertainment." (Kurtzman, Soares, 2006). Young people doing sports smoke less, eat healthier, have more confidence, have fewer psychosomatic symptoms. However, reduced physical activity can be connected with drug use and

unsafe sexual behaviour (Mikulán et al., 2010). Regular physical activity is the determining factor of healthy behaviour (Nagy, Tobak, 2015). Since sporting activities carried out for recreational purposes are significant tools for improving the quality of life with preventive and intervening effects, it is important to explore factors that influence the beginning and subsequent pursuance of sports (Gémes, 2006). Young people doing sports are easier to form friendships, they are more satisfied with their appearance, less likely to be depressed, more future-orientated and more inclined to self-regulated manners. People doing regular physical activities have a better sense of well-being, and they proved to have greater emotional stability and better intellectual performance (Gémes, 2006). Physically active leisure time has a positive effect on the body image. Particularly, in the society of our time, studies and age-specific attributes pinpoint the role of media (television and internet), the popularity and growing relevance of which seems to be unstoppable. However, physically active, health-conscious behaviour might be able to compensate for the adverse effects of passive time both on physical and psychological levels (Brassai, Pikó, 2010).

According to (Kovács, 2012), individuals, while doing sports, acquire skills, abilities and values irrespective of their age, gender and societal status that can be used in other areas of life (such as persistence, discipline, co-operation, hard work, team spirit, teamwork, etc.). Since it is never too late to start any sport, it can be considered as an area of lifelong learning. If we consider the conventional health and conservation effect of sports, it is not only important but also necessary to have regular physical exercise. If this need arises already at a young age, it teaches (socializes) the individual to let regular physical exercise become an important part of his/her life; this is of great importance not only for the individual, but also for society, economy and the entire population (Kovács, 2013). In the course of his research, (Kovács, 2015) he sought to find out how sporting habits (competition, leisure and occasional sports) influence the efficiency of students.

With the exception of two efficiency components, competition and leisure athletes have achieved the highest scores, which proves that the regular form of sport contributes to the academic achievements of students, thus supporting the theory of the development model. Of the social factors influencing the complex efficiency index, resilience has the greatest impact; it is very important for our subject that leisure sports have the next highest influencing force, and competitive sports also have a positive effect, besides the control traditional social background variables. A surprising finding is that subjective well-being has a negative impact on academic achievement. According to (Kirk, 2005), higher education institutions are the last opportunity for young people still in education to be able to participate in sport under organized circumstances and to incorporate sports into their scale of values as part of their lifelong physical activity. Sporting habits of the next generation are in the hands of physical education teachers, coaches and sports organizers who are currently involved in the sport life of colleges and universities (Perényi, 2005). Personality characteristics of athletes exercising regularly are different from those of passive people. People doing sports are typically more sociable, open, more modern, willing to take more risks, they are more fashion-conscious and confident (Szabó, 2006). Sport in higher education has a dual role: on the one hand, facilitation of social integration by means of communication and promotion of health and leisure activities on the other hand (Tomova, 2012). Bilos, Galic (2016) also confirmed that the importance of student sports activities within the structure of scientific development is indisputably important.

Tourism, as one of the essential forms of utilising individual leisure time, (Fritz, 2011) provides opportunities for exercising various sports activities and the importance of sport is becoming more and more significant for both society and economy. This includes leisure sports, which refers to a physical activity that contributes to the creation of quality life and which is carried out by the individual (consumer) in his/her available leisure time. The aim of the activity includes play, entertainment, achievement of success and the improvement of condition and shape (Savella, 2014).

### **2.3. Sporting and sports motivation**

In 2014, EUROBAROMETER examined the physical activity of various groups of society involving 28000 people from 28 countries. According to the survey, 41 % of the total population of the EU does sports at least once a week, while in Hungary this rate is 38 %. People do more sports in the northern countries of Europe than in southern or eastern areas. When compared the new results to those of a 2009 survey, it can be concluded that the proportion of people in Hungary who do sports at least once a week or regularly (at least five times a week) has increased. Comparing the

percentile results of countries, Hungary is the 15<sup>th</sup> in terms of willingness to do sports. In EU Member States, men exercise more (45 %), while only 37 % of women incorporate daily exercise into their lives. When analysed by gender, percentage proportions of younger age groups (15 to 24 years) are particularly variable, as almost three quarters of men (74 %) and only the half of women (55 %) do sport at least once a week. With the increase of age, willingness to do sports decreases (Eurobarometer, 2014).

EUROBAROMETER examined the motivational factors affecting the sporting habits of Europeans. According to the EU average, the most common reasons behind physical activity are health improvement (62 %), fitness improvement (40 %), relaxation/recreation (36 %) and well-being (30 %). Unfortunately, according to the data concerning Hungary, 39 % of the population do sports to become healthier. With this result, Bulgaria is the only one behind Hungary. Among the reasons why Hungarians do not engage themselves in sports on more occasions, there is an observable ranking identical with the EU average. These are the following: lack of time, no motivation, no interest and illness (Eurobarometer, 2014).

In Hungary, the high-profile research called "Youth" (Bauer et al., 2009) which is carried out every four years, examines the 15 to 29-year-old age group, focusing on the attitude towards sports. According to the 2008 study, 38 % of young people claimed to do sports regularly, outside compulsory physical education classes at school, while in 2012 this declined to 35 %. During the interval between 2008 and 2012, physical activity became less important. Young people of our time give up physical exercise even earlier, compared to previous generations. They already start renouncing of their regular exercise during their secondary school/high school studies. 34 % of 20-24-year-olds and 29 % of 25-29-year-olds were physically active in 2012. According to the gender-based breakdown, 43 % of men and 27 % of women incorporate sports into their leisure time. Similarly to the tendencies characterizing the entire population, the most popular sports for men are football, bodybuilding and cycling, while young women prefer aerobics, cycling and home gymnastics. Level of qualification has a decisive role in the development process of a physically active lifestyle, since according to the results of the most recent survey – which is similar to the results of previous surveys – university graduates are "the sportiest" (42 %), while primary school graduates (33 %) are the less likely to do sports on a regular basis. This shows that doing sports does not only depend on available time, but appropriate attitude, which recognizes the importance of sport and which contributes to the conscious choice of an active lifestyle are also significant factors.

The correlations between sporting activities and financial situation have also been studied. It is already apparent from data collected in the year 2000 that people living in better financial conditions are twice as likely to do sports as those who are struggling with financial problems. By 2012, the perceptible differences at the endpoints of social hierarchy have shown and almost threefold increase. The very low participation rates observed in competitive and leisure sports indicate the societal level depreciation of the reputation and importance of sports, the consequences of which raise questions that are current issues in public discussions (Perényi, 2012).

The study examined the motivational factors of regular sport as a separate issue. According to young people, the most important reasons for doing sports are "to be fit" (61 %) and "to be healthy" (48 %). Among the listed factors, the reasons "to lose weight" (9 %) and "suggested by parents" (3 %) appeared as the less important elements (Perényi, 2012).

The particularly important and positive effects of social influences, family and friends on physical activity-related behaviour are confirmed in multiple international studies (Baker et al., 2000; Buckwort, 2000; Buckwort, Dishman, 1999; Humpel et al., 2002; Sallis, Owen, 1999). Hungarian researchers studying young age groups achieved identical results. According to the research conducted by (Szabó, 2006) amongst university students in Budapest, the proximity of sporting activities, the possibility of doing at alone and the company of friends are the primary activating factors of sports at this stage of life. Company of friends and fellow students is a more important motivational factor for men than for women, together with the aspect of what they are talented in. Essays and in-depth interviews of (Neulinger, 2007) conducted with university students confirm the statements of Szabó whereas the physical activity of friends is a major influence on the individual attitudes towards sports.

According to the results of studies of (Tóth et al., 2009) conducted with the involvement of students from Pécs, doing sports is more popular among male university students than in the case

of women. In terms of physical activity, men are ahead of women, but in many cases in terms other factors within the physical dimension of wellness (nutrition, sleep) the situation is reversed.

The harmonizing result of the presented three Hungarian studies is that the most important motivational factors for the students are health preservation, recreation and entertainment.

It is also apparent according to the research of (Neulinger, 2007), that high school students transitioning to higher education are the less active. During this period, they are mostly interested in the programmes offered by the university and the student halls of residence, while physical activity is relegated to the background.

This is supported by the research of (Kovács, 2011) carried out in Debrecen, where it is clear that from amongst leisure activities, internet, listening to music, and watching television reached the highest means values, while only 19 % of the students do sports more than once a week.

In the scope of his research, (Pfau, 2016) compared the sporting habits of students of five Hungarian universities (BME, DE, PE, SE, SZE) and their preferences in terms of choice of location (institutional impact). Based on the results of the research, sporting habits exist along two major trends: the first is that competitive sports activities of students during their university years significantly decline, while the other is that their leisure sports activities are prominent. What is even more interesting is that students tend to prefer sporting activities outside the campus to the ones situated inside. As far as the main reasons for giving up sports are concerned, students have indicated the lack of time as the most important factor.

Kovács et al. (2018) examined the institutional impact affecting the sports habits of students of the North Great Plain Region of Hungary and other cross-border – Slovakian, Ukrainian, Romanian and Serbian – higher education institutions with minority and majority numbers of Hungarian students. They concluded that the sporting frequency of students of the examined institutions is clearly influenced by institutional environment, since the lack of infrastructure in the involved institutions proved to be a hindering effect while the availability of proper infrastructure had a positive impact. In this area, the strategic plan of the University of Debrecen is to be highlighted as an institutional factor that has a positive impact on the growth of sporting frequency. Sports club memberships as tuition obligation and a wide range of community sports programmes emerged as institutional solutions to facilitate leisure time spent in a more "sporty" manner. It is clear that health preservation and health consciousness was behind the sports motivation of students. This result is of special significance, because in many cases already existing poor health conditions keep people from regular exercise. As a reason for not doing sports at all or doing only insufficient amounts, excessive engagement to other activities was indicated by students as the most important cause. Locally situated sports infrastructure or – if it is already available – a wider range of available sports and better organization could be helpful.

Based on the research results presented in the scientific literature review, the following hypotheses were formulated:

Hypothesis 1: The target group of the study consists of higher education students who are interested in sports and music festivals. Therefore, we assume that they prefer active entertainment and that one of their favourite leisure activities is doing sports (Brassai, Pikó, 2010; Bauer et al., 2009).

Hypothesis 2. The scales of values of surveyed higher education students are mostly influenced by fellow students and friends (Baker et al., 2000; Buckwort, 2000; Buckwort, Dishman, 1999; Humpel et al., 2002; Sallis, Owen, 1999).

Hypothesis 3: Physical appearance is a more important sports motivation for this age group than health (Perényi, 2013).

### **3. Materials and methods**

This section introduces the sampling procedure and analytical methods applied for the evaluation of the analysed sample.

#### **3.1. The Sample**

Our survey was based on a questionnaire survey; the subject of the survey, as mentioned in the introduction, is a sports event, a sports festival for higher education students, which has been held every year since 2010. The fundamental purpose of the questionnaire was to assess the opinions and demands of higher education students related to sports festivals and leisure sports in order to adapt the agenda of the Campus Sports Festival in Debrecen to actual student needs.



The sample was comprised of students of higher education who had already participated at the event on one or more occasions and whose e-mail contact information was included in our database or who were interested in the Campus Sports Festival event on our Facebook page. Completion of the questionnaire took place on an online surface, the link for accessing the questionnaire was sent in July and August 2017 via e-mail and Facebook message. A total of 1103 completed questionnaires were returned and the number of questionnaires that we were able to evaluate was 1036. The reason of the final number of questionnaires was that we removed questionnaires that were not filled or only very incompletely filled. As a result of that, a total of 1036 valid questionnaires remained. Respondents were higher education students between 18-26 years of age, 43.3 % (449 persons) women and 56.7 % (587 persons) men.

The target audience of the Campus Sports Festival are higher education students from Hungary and from neighbouring countries. Participants have been arriving to the sports event from Romania for eight years, from Ukraine for seven years and from Slovakia for three years. There have been multiple examples when former participants, who were unable to enter the competition after obtaining their degrees, visited the event and participated as fans of their alma mater institutions.

28 % of the respondents have never participated at the Campus Sports Festival. This is important to us, because 72 % of the sample is made up of young people who already have experience with the programmes and standards of our event, and the questionnaire contains general questions related to the Campus Sports Festival and ones concerning sports motivation. The present study deals with the sports motivations of higher education students broken down and compared by gender.

### **3.2. Statistical methods applied for the analysis**

Descriptive statistical methods have been applied; the structure of the sample was demonstrated by means of distribution rates, through gender and the past participation at the sports festival. Then, in the course of the analysis, questions have been examined pursuant to gender as a criterion of classification. For analysing genders and past participation at the sports festival, Pearson's Chi-square test was applied. We sought the answer to the question whether the proportion of people who have or have not already attended our sports events is different depending on their gender. Carrying out the test does not require the normal distribution of the measured variables. In the course of the analysis of questions offering multiple options of answers the observed values are the item numbers of replies to the given question, while the expected values are the numbers corrected with distributions characteristic to the statistical population ([Eurobarometer, 2014](#)).

Then, for revealing the differences by gender in the case of certain questions of the questionnaire, Mann-Whitney test was applied. The Mann-Whitney-test (otherwise the Mann-Whitney-Wilcoxon- or Wilcoxon rank sum test) is a non-parametric version of the two-sample t-test, which not used in the case of non-normal distribution and ordinal variables. Respondents had to give a number between 1 and 7 as an answer to the analysed questions and a number between 1 and 6 to the question "How often do you do sports?" The Mann-Whitney test is a suitable method for the analysis of 2 samples. Requirements of the analysis were random sampling, independent nature of samples and the existence of at least ordinal variables ([Tóthné, 2011](#)).

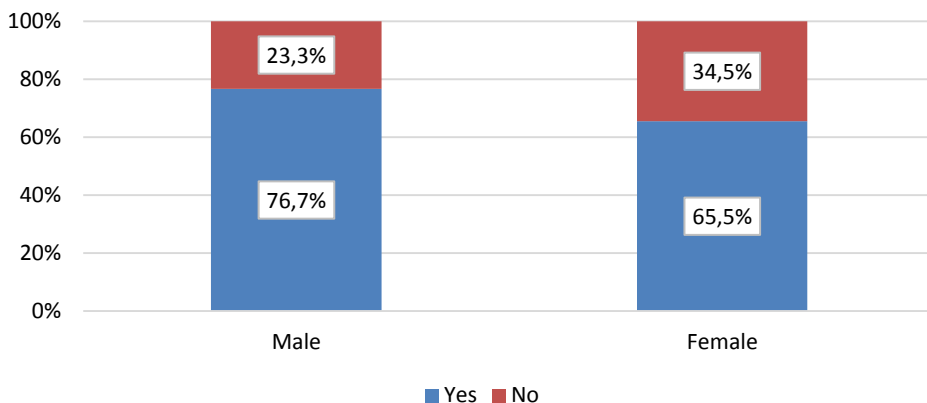
Out of these, separate latent variables, principal components have been created by means of Categorical Principal Component Analysis /CATPCA/, in which the originally analysed factors are thematically classified, therefore we had the opportunity to work with a lower number of factors in the case of the examined variables. The elaborated principal components can be handled as normal distribution variables, therefore parametric procedures have been applied for them.

The purpose of the CATPCA method is to reveal background variables controlling primary variables by combining correlating variables into joint principal components, which are independent from each other. One of the major advantages of its application is that we are able to analyse the mass of data with a lower number of variables instead of a given number of explanatory variables. As a matter of fact, in the course of principal component analysis, the joint variance of variables is explained, thus the goal is reduction of information ([Perényi, 2013](#)).



#### 4. Results and discussion

Attendance of respondents completing the questionnaire at sports festivals has been analysed and broken down by gender (Figure 1). It can be concluded, that 65.5 % of female respondents and 76.7 % of male respondents have already attended our sports event. The higher proportion of male respondents in this case is due to the fact that the sports appearing at our event are basketball, beach volleyball and football and in the case of football – which has the highest participation rate – mostly male teams apply to the event.



**Fig. 1.** Distribution of participant rate at the sports festival by gender

On the basis of the Chi2 test, there was a difference between the responding men and women in terms of the participation at sports festivals ( $\text{Chi}^2(\text{df}:1) = 15.7; p < 0.001$ ). However, this is only due to the fact that – as presented above – sports which are done characteristically by men are represented at a larger proportion at the festival.

The question regarding how they evaluate the sports festival initiative was answered by 749 respondents; these respondents have already participated at our event earlier. They had to give a score on a scale of 1 to 7 (1 – I do not think it is a good idea, 7 – I think it is a very good idea). In terms of genders, evaluation of women and men is very similar. Women evaluated the question with a higher mean score (5.89), while the mean score given by men was 5.87. It can be established that the respondents consider our initiative favourable (Table 1).

**Table 1.** Evaluation of the sports festival initiative and the frequency of sporting activities by gender

	Men	Women	Total	Mann-Whitney test	
				Z	p
Popularity of the sports festival	378.82 (N = 430)	369.85 (N = 319)	-	-0.608	0.543
Frequency of sporting activities	551.50 (N = 587)	471.59 (N = 446)	-	-4.508	p < 0.001
Std. Deviation	1.64	1.46	1.57	-	-
Grouped Median	6.34	6.26	6.31	-	-
Skewness	-1.666	-1.496	-1.615	-	-

Following the above, Mann-Whitney test was applied for revealing the differences. We analysed the popularity of the sports festival initiative and the frequency of sporting activities of the respondent students (Table 1).

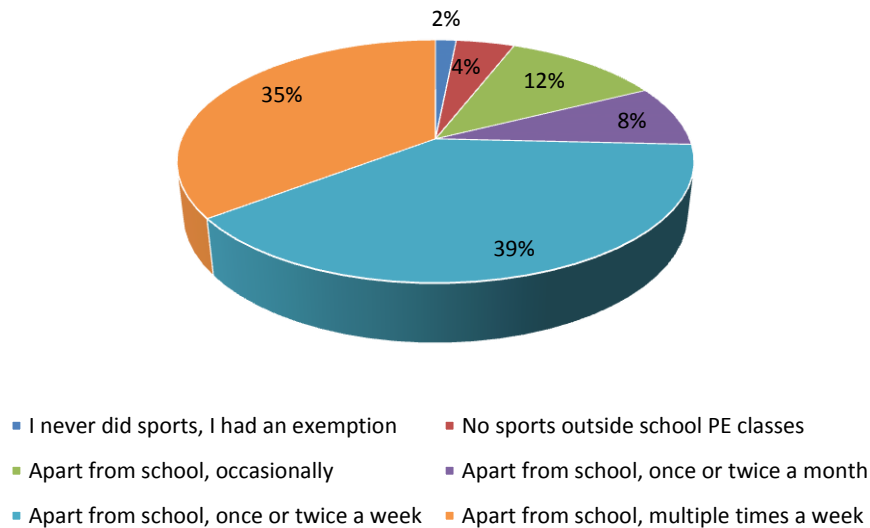
Performance of the test did not result in a significant difference in the popularity of the sports festival initiative amongst the higher education students included in the survey in terms of their gender. However, there was a difference in terms of the frequency of sporting activities, the results of the analysis show that men do sports more frequently than women ( $Z = 4,508$ ;  $p < 0.001$ ) (Table 1). This statement is in agreement with the findings of relevant scientific literature (Tóth et al., 2009), whereas doing sports is more popular amongst male university students than female ones. The event is more popular amongst female students; both questions received higher Mean Rank values from them (Table 1).

We intended to find out, what the sports festival means for higher education students. They could indicate on a scale of 1 to 7 how much a certain factor is characteristic to them. There were significant differences along five factors (social meeting, entertainment opportunity, experience, recreation and learning) (Table 2). Evaluation of self-fulfilment, prize and sports did not differ significantly between the two genders. Assessing the data, we found that in the case of the higher education students of both genders the highest mean score was given to the opportunity to do sports. Besides sporting opportunities, entertainment and experience received high scores as well. Based on the above, Hypothesis 1 is accepted, since it was found that higher education students involved in the sample prefer active recreation and one of their most popular activities is doing sports. In total, except for the factor 'prize' higher scores were given by men, while women students evaluated the factors with lower scores. It can be stated in the case of both genders, that learning, self-fulfilment and prize received the lowest mean values.

**Table 2.** Reasons behind the significance of the sports festival by gender

Factors	Women	Men	Z	p
Social meeting	5.21	5.55	-3.733	.000
Entertainment opportunity	5.81	6.02	-2.125	.034
Experience	5.77	6.15	-5.011	.000
Recreation	5.45	5.71	-3.011	.003
Learning	3.47	3.85	-3.581	.000
Self-fulfilment	4.11	4.21	-.753	.452
Prize	4.04	3.95	-.829	.407
Sports	6.11	6.16	-.168	.867

We analysed how often the students did sports during several months prior to the completion of the questionnaire; 39 % exercises outside school once or twice a week, 35 % multiple times a week. It can be said that 74 % of the respondents do sports on a regular basis (Figure 2).



**Fig. 2.** Distribution of the sporting frequency of higher education students

Of the students completing the questionnaire 26 % did not have regular physical activities during the analysed period. We asked them about their reasons of not doing sports regularly if that happens to be the case. They had to evaluate on a scale of 1 between 7 the following factors: lack of time, lack of motivation, lack of money, lack of sports equipment, state of health and proper location. There was a significant difference amongst the lack of time, motivation, sporting equipment, proper location and money between the two genders, these factors are more characteristic to women than to men. However, there was no significant difference in terms of the evaluation of the lack of health. The lack of time was given a high mean score by both genders (women: 4.71, men: 5.18). Female higher education students evaluated the rest of the factors with scores below 3. Men gave 3.29 to lack of motivation, while health received a mean score of 3.05 from them. In the case of both genders, the lack of money received the lowest score (Table 3). According to the scientific literature (EUROBAROMETER, 2014), reasons in the EU include lack of time, motivation, interest and health. In the case of our study, higher education students indicated the lack of time as the most important factor, followed by the lack of motivation. Lack of money was evaluated with relatively low scores.

**Table 3.** Reason for the negligence of sporting activities by gender

Factor	Women	Men	Z	p
Lack of time	4.71	5.18	-3.474	.001
Lack of motivation	2.82	3.29	-4.015	.000
Lack of money	2.42	2.82	-3.321	.001
Health status	2.77	3.05	-2.392	.017
Sporting equipment and location	2.39	2.64	-1.549	.121

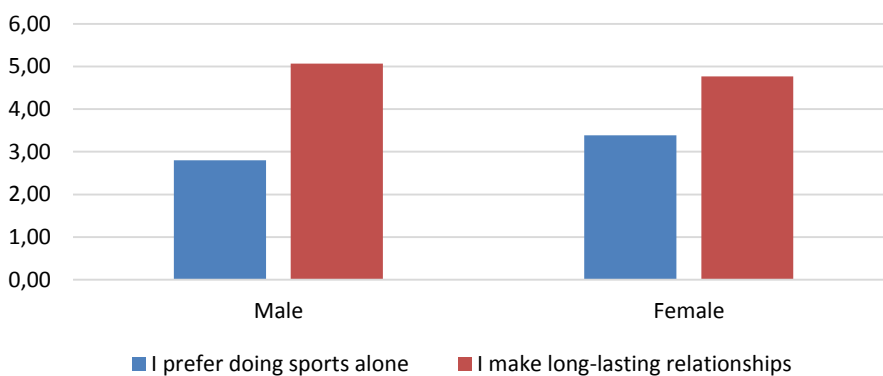
We sought the answer to the question where sports as a motivational factor is positioned within the lives of higher education students (Table 4). According to the Mann-Whitney test, significant difference was found in the case of the following motivational factors: family, sports, money, love and friends. Family and friends have a relatively more important role in the lives of women, while sports and money are relatively more important to men. This does not confirm the findings of the scientific literature (Szabó, 2016), whereas the company of friends and fellow students is a more important motivation for men than for women. The largest difference was found in the case of love, women considered this factor more important as well. Family and friends

achieved the highest mean score in the case of both genders, it can be stated that, following family, friends are the most important motivational factors. On the basis of the analysis, we accept our Hypothesis 2, since it was confirmed that the scale of values of the surveyed higher education students is mostly influenced by fellow students and friends. The lowest score was given to entertainment and money as a motivational factor. Sports as a motivational factor received the highest mean score from women.

**Table 4.** The role of different motivational factors in the lives of higher education students by gender

Factor	Women	Men	Z	p
Family	6.53	6.66	-3.524	.000
Sports	5.27	5.06	-2.559	.010
Money	5.09	4.90	-2.132	.033
Love	5.52	5.93	-4.535	.000
Friends	6.07	6.22	-2.316	.021
Societal status	5.49	5.65	-1.842	.066
Career	5.20	5.17	-.577	.564
Entertainment	4.39	4.39	-.107	.915

Respondents had to evaluate the following statements on a scale of 1 to 7: “Sport is primarily important to me, because I pursue a healthy lifestyle”, “I prefer doing sports alone, not in a community”, “Such relationships might be formed during sports, which might prove to be long-lasting”, “Sports is an international forum in which it is easy to communicate despite lingual difficulties”. Considering the above statements, the Mann-Whitney test resulted in a significant difference amongst genders in two cases (“I prefer doing sports alone, not in a community”, “Such relationships might be formed during sports, which might prove to be long-lasting”) (Figure 3). Women are more likely to do sports alone ( $Z = -4.885$ ;  $p < 0.001$ ) and they use sports to a relatively larger extent to build long-lasting relationships than men ( $Z = -2.224$ ;  $p = 0.026$ ). Both genders gave the lowest score the “I prefer doing sports alone” factor, while the factor “healthy lifestyle” received the highest score in both cases.



**Fig. 3.** Other sporting habits by gender

We also analysed the event-related motivational factors of respondents, we intended to find out how much the listed factors influence them when they make a decision to participate at a sports festival/event (Table 5).

**Table 5.** Importance of the factors of event-related motivation by gender

Factor	Women	Men	Z	p
Optional sports	5.83	6.45	-3.927	.000
Proximity of residence	4.65	5.16	-4.618	.000
Accompanying programmes	4.52	5.04	-5.164	.000
Natural sights	4.11	4.40	-2.937	.003
Quality of accommodation	4.09	4.41	-2.763	.006
Environmental protection	3.37	3.84	-4.224	.000
Registration fee	4.55	5.15	-5.541	.000
Interest of friends	5.44	5.71	-3.610	.000
Prizes	3.65	2.99	-.085	.932
Drug prevention	3.66	3.18	-1.582	.114

Prizes and drug prevention received low scores and there was no significant difference amongst genders in their case, while we found significant difference in the case of the other factors. Optional sports were chosen as the most effective motivational factor in the case of both genders. Male students gave the highest score for this factor. In the case of both women and men, this factor was followed by the interest of friends and the proximity of residence. Except for prizes and drug prevention, men gave higher scores to the rest of the factors. In the case of women, environmental protection while in the case of men, prizes received the lowest scores.

Besides the aspects of event-related motivation, we also sought the answer to what factors motivate students when they decide to do sports (Table 6). We found significant difference amongst genders in terms of eight of the motivational factors. All of the students agreed that they forget about their problems during sporting activities and they are able to relax, which confirms the findings of scientific literature (Gémes, 2006), whereas people who engage in regular physical exercise, are in better general condition, they have better emotional stability and intellectual performance. Also, according to the EU average, 36 % of the survey participants choose sports for recreation and 30 % do so to feel better. Women gave the highest mean score to this factor. In the case of women and men, the factors "It is important to me to improve during exercising" and "My own attitude is the most important during doing sports" became the second and third. There was a very spectacular difference in opinion in terms of competition, which is relatively more important to men and in terms of the factor effectiveness of body transformation, which in turn was more important to women than to men. Developing new friendships and additional programmes outside trainings are relatively important to men, while the other factors are more important to women.

According to scientific literature (Perényi, 2012), young people indicated the factors "to be fit" (61 %) and "to be healthy" (48 %) as the most important reasons of doing sports. Our findings confirm the results of relevant scientific literature (Szabó, 2006; Neulinger, 2007; Tóth, 2009) respondents gave higher scores to health preservation than to the factors fat burning and body transformation. Therefore, Hypothesis 3 is rejected and we found that health is a more important sports-related motivational factor for higher education students than external appearance.

**Table 6.** Importance of the factors of event-related motivation by gender

Name of the factor	Women	Men	Z	p
When doing sports, I forget about my problems and become completely relaxed.	6.06	5.94	-2.555	0.011
When choosing a sport, I decide based on potential fat burning and body transformation.	4.25	3.16	-8.767	0.000
I find new friends during sports and it is important to me	4.27	4.52	-1.973	0.049



I am only willing to pay the smallest amount of money for doing sports	3.60	3.42	-1.600	0.110
I only pursue a certain sport for a considerable period if there are additional programmes outside the trainings.	2.65	2.89	-2.219	0.026
I only pursue a sport where I am able to compete.	2.45	3.12	-5.592	0.000
I am not interested whether I am successful at a given sports.	3.63	3.44	-1.484	0.138
It is important to me that a sport contributes to the preservation of my health.	5.53	5.21	-3.135	0.002
It is important to me to improve during exercising.	5.95	5.88	-0.625	0.532
It is important to me to be committed towards the given sport.	5.48	5.39	-1.393	0.164
It is important to me to be able to train without a considerable extra time and energy input (e.g. reaching the gym).	4.48	4.29	-2.244	0.025
It is important to have a proper atmosphere and good company during training.	5.72	5.54	-2.759	0.006
It is important for my intellectual capacity to improve through physical training.	5.26	5.10	-1.643	0.100
My own performance is important during training.	5.81	5.74	-0.714	0.475
My own attitude is the most important during doing sports.	5.77	5.59	-1.926	0.054
I like to try new kinds of sports.	4.66	4.52	-1.157	0.247

We carried out principal component analysis based on sport motivation factors (Table 7). In the course of the analysis, respondents had to evaluate 16 factors on a 7-grade Likert-scale, in terms of how important, how motivating these factors are for them in relation with doing sports. Out of the 16 factors, 5 principal components formed. Principal component analysis requires the number of observations to be 3-10 times higher than the number of variables. The sample included 1036 valid observations, which is more than enough in this respect, as there were nearly 65 observations for every variable. Principal components are variables in the case of which analysis of variance can be performed, as the resulting principal components will have normal distribution. In the course of the principal component analysis, we managed to spare a considerable amount of information. One of the significant steps of the analysis was based on the observed values of the original variables and the principal component estimates weights. Principal component weights show how much the same variable is influenced by each principal component. Principal components weights are indicated in matrix distribution. It is a usual practice that variables having weight with an absolute value of 0.70 or higher are considered to belong to the same principal component, while variables having a weight with an absolute value below 0.70 are not identified with the analysed principal component. However, in multiple studies the variable is allocated to the principal component even if its weight has a value above 0.5 (Matkó et al., 2014).

Principal components have been titled as the components of performance, atmosphere, competition, health and minimum input. The performance component includes one's own performance, development, commitment, attitude, successfulness and intellectual capacity. The atmosphere component unites good atmosphere, new friends, trying new sports and relaxation. The competition component includes the importance to compete and programmes outside of training. The health component involves effective body transformation and the significance of preserving health, while the minimum input component contains the support of time and energy consumption and minimal payment obligations.

**Table 7.** Principal component structure elaborated for sport motivation

Factor	Principal component				
	Performance	Atmosphere	Competition	Health	Minimum input
My own performance is important during training	.759				
It is important to me to improve during exercising	.755				
It is important to me to be committed towards the given sport	.673				
My own attitude is the most important during doing sports	.565				
I am not interested whether I am successful at a given sport	-.553				
It is important for my intellectual capacity to improve through physical training	.460				
It is important to have a proper atmosphere and good company during training.		.666			
I find new friends during sports and it is important to me		.654			
I like trying new kinds of sports		.516			
When doing sports, I forget about my problems and become completely relaxed		.495			
I only pursue a sport where I am able to compete			.809		
I only pursue a certain sport for a considerable period if there are additional programmes outside the trainings			.740		
When choosing a sport, I decide based on potential fat burning and body transformation				.718	

It is important to me that a sport contributes to the preservation of my health	.648
It is important to me to be able to train without a considerable extra time and energy input	.810
I am only willing to pay the smallest amount of money for doing sports	.669

Differences in sport motivation were analysed by gender; according to the findings, there were no significant differences amongst genders in the case of the ‘performance’ and ‘atmosphere’ principal components, while we found significant difference in the case of the following principal components: health, competition and minimum input (Table 8).

**Table 8.** Sport motivation differences by gender

Principal component	Women	Men	F	p
Atmosphere	0.006	-0.008	0.048	0.826
Competition	0.116	-0.152	18.518	0.000
Minimum input	-0.063	0.083	5.436	0.020
Performance	-0.038	0.049	1.926	0.166
Health	-0.173	0.227	42.409	0.000

Competition and atmosphere as motivational factors are more important to women, while performance and health are more important to men.

### 5. Conclusion

Scientific literature found that higher education institutions are the last opportunity for young people still in education to be able to do sport under organized circumstances and to incorporate sports into their scale of values as part of their lifelong physical activity. Sports programmes hosted by higher education institutions – like the Campus Sports Festival, which is held annually in Debrecen – are able to contribute to this process. The present study deals with questions related to the sporting habits of students included by the sample (1036 persons), focusing on the differences and among the opinions of students by gender. Following the performance of the test, there was no significant difference in terms of the popularity of the sports festival initiative in terms of the gender the higher education students involved in the survey. However, there was a difference in terms of the frequency of doing sports; the results show that men do sports more often than women do. There was a significant difference between the genders in terms of the reasons to neglect of sporting activities (lack of time, lack of motivation, lack of sports facilities and lack of money); these factors are more characteristic to women than to men. Evaluation of health status was not significantly different. However, there was a significant difference in terms of the following motivational factors: family, sport, money, love and friends. Family and friends have a relatively more important role in the lives of women, while sports and money are relatively more important to men. This does not confirm the findings of the scientific literature, whereas the company of friends and fellow students is a more important motivation for men than for women. Women are more likely to do sports alone and they use sports to a relatively larger extent to build long-lasting relationships than men. There was a very spectacular difference in opinion in terms of competition, which is relatively more important to men and in terms of the factor effectiveness of body transformation, which in turn was more important to women than to

men. On the basis of the analyses, it was established that higher education students belonging to the sample prefer active entertainment and one of their favourite leisure activities is doing sports and that the scale of values of the surveyed higher education students is mostly influenced by fellow students and friends. It was also found that for higher education students, health is a more important motivational factor – in relation with sports – than physical appearance.

By means of Categorical Principal Component Analysis we analysed the principal component structure of sports motivation factors. In the course of the analysis, respondents had to evaluate 16 factors on a 7-grade Likert-scale, in terms of how important, how motivating these factors are for them in relation with doing sports. Out of the 16 factors, a total of 5 principal components have been formed. Principal components have been named the components of performance, atmosphere, competition, health and minimum input. The performance component includes one's own performance, development, commitment, attitude, successfulness and intellectual capacity. The atmosphere component unites good atmosphere, new friends, trying new sports and relaxation. The competition component includes the importance to compete and programmes outside of training. The health component involves effective body transformation and the significance of preserving health, while the minimum input component contains the support of time and energy consumption and minimal payment obligations. Sport motivation differences have been analysed by gender and we found that there was no significant difference amongst the countries in the case of the performance and atmosphere capital components, while there was significant difference in the case of health, competition and minimum input. Findings of the study will be taken into consideration in the case of our upcoming events during the next years and we will suggest the utilisation of these results to the relevant department responsible for the elaboration of the sports strategy of the University of Debrecen.

## **6. Limitations**

The present study has been limited to the sample of higher education students who have already participated in or are interested in the Campus Sport Festival in Debrecen. The research process was made difficult by the fact that the survey was conducted during the summer period, and numerous people who were in our database because they already participated in our event before did not complete the questionnaire. It is possible that more people would have completed the questionnaire in a different period, however we were still able to evaluate a large number of samples. In the future, to improve the quality of the event, we intend to perform the analysis on a larger number of samples that include a higher number of higher education students who have never been to the event. That way it is possible to become familiar with their opinions and hopefully we can meet more new attendees besides returning participants as well.

## **7. Acknowledgments**

The publication is supported by the EFOP-3.6.2-16-2017-00003 project. The project is co-financed by the European Union under the European Social Fund.

Author Contributions: The authors contributed equally to this article.

Conflicts of Interest: The authors declare no conflict of interest.

## **References**

- [Bácsné, 2014a](#) – *Bácsné, B.É.* (2014a). Ha a hallgató vizsgáztat – elégedettségi vizsgálat a Campus Fesztivál 2013-on *ACTA SCIENTIARUM SOCIALIUM* 17:(40) Kaposvári Egyetem, Kaposvár, pp. 51-60.
- [Bácsné, 2014b](#) – *Bácsné, B.É.* (2014). Hallgatók, buli, Campus – Felsőoktatási hallgatók fesztivállátogatási szokásainak változása a Campus Fesztivál vizsgálatára alapján. *Turizmus Bulletin* XIV. 2. szám. Magyar Turizmus Zrt. Kutatási Iroda. Budapest, pp. 33-42.
- [Baker et al., 2000](#) – *Baker, E.A, Brennan, L.K., Brownson, R.C., Housemann, R.A.* (2000). Measuring the determinants of physical activity in community: current and future direction. *Res Quart Exerc Sport*, 71: 146-158.
- [Balogh, 2016](#) – *Balogh, P.* (2016). Egy alternatív fehérjeforrás érékelése: a rovarfogyasztás kihívásai és lehetőségei. *ÉLELMISZER, TÁPLÁLKOZÁS ÉS MARKETING* XII: (2), pp. 11-24.

**Bauer et al., 2009** – Bauer, B., Bazsalya, B., Berényi, E., Marián, B., Máder, M., Molnár, Zs., Perényi, Sz., Pillók, P., Rosta, G., Ságvári, B., Szabó, A., Szabó, Á. (2009). Ifjúság 2008 Gyorsjelentés (szerk.: Szabó A. – Bauer B.), *Szociálpolitikai és Munkaügyi Intézet*, Budapest, pp. 69-73.

**Benedek, Stark, 2007** – Benedek, M., Stark, J. (2007). Fesztiválvilág, In: *Turizmus*. Bulletin Heiling Média Kiadó Kft. Budapest XIII. évf. 3. szám.

**Biloš, Galić, 2016** – Biloš, A.; Galić, T. (2016) The role of digital marketing in university sport: An overview study of higher education institution in Croatia *Ekonomski Vjesnik / Econviews – Review of Contemporary Entrepreneurship, Business, and Economic Issues Osijek God. XXIX*, BR. 2/2016. pp. 453-465.

**Black, 2016** – Black, N. (2016). Festival connections: How consistent and innovative connections enable small-scale rural festivals to contribute to socially sustainable communities. *International Journal of Event and Festival Management*, Vol. 7 Is. 3, pp. 172-187. DOI: <https://doi.org/10.1108/IJEFM-04-2016-0026>

**Boros, Kalmárné, 2010** – Boros, Sz., Kalmárné Rimóczi Cs. (2010). Szabadidő eltöltési szokások vizsgálata főiskolai hallgatók körében *Szolnoki Tudományos Közlemények XIV*. Szolnok P. 8.

**Brassai, Pikó, 2010** – Brassai, L., Pikó, B. (2010). Protektív pszichológiai jellemzők szerepe a serdülők egészséggel kapcsolatos magatartásában. In: Pikó B. (szerk.): *Védőfaktorok nyomában. A káros szenvedélyek megelőzése és egészségfejlesztés serdülőkorban*. L'Harmattan – Nemzeti Drogmegelőzési Intézet, Budapest, pp. 55-69.

**Buckwort, 2000** – Buckwort, J. (2000). Exercise determinants and interventions. *Int J Sport Psychol.*, 31: 305-320.

**Buckwort, Dishman, 1999** – Buckwort, J., Dishman, R.K. (1999). Determinants of physical activity: research to application. Rippe JM. (szerk.), *Lifestyle medicine*. Blackwell Science Inc., Boston (MA), pp. 1016-1027.

**Dobay et al., 2016** – Dobay, G., Dobay, B., S. Falusi E., Haináczi S., Penksza K., Bajor Z., Lampert R., Bakó G., Wichmann B., Szerdahelyi T. (2016). The effect of sport tourism on temperate grassland communities Budapest. *Applied ecology and environmental research*, 15(1), pp. 457-472.

**EUROBAROMETER, 2014** – EUROBAROMETER (2014). Special Eurobarometer 412. Sport and physical activity. DOI 10.2766/73002. [Electronic resource]. URL: [http://ec.europa.eu/commfrontoffice/publicopinion/archives/ebs/ebs\\_412\\_en.pdf](http://ec.europa.eu/commfrontoffice/publicopinion/archives/ebs/ebs_412_en.pdf) (date of access: 05. 10.2018).

**Fritz, 2011** – Fritz, P. (2011). *Rekreáció mindenkinek I.* (2. javított, bővített kiadás) Bába kiadó Szeged. P. 218.

**Gábor, 2015** – Gábor, K. (2015). *Fesztiválok ifjúsága és a drog*. Belvedere Meridionale Kiadó, Szeged ISBN 963 9573 08 6, pp. 1-45.

**Gammon, Robinson, 2003** – Gammon, S., Robinson, T. (2003). Sport and Tourism, A Conceptual Framework. *Journal of Sport & Tourism*, 8: 1, 21-26. DOI: 10.1080/1477 5080306236

**Gémes, 2006** – Gémes, K. (2006). Sport és életminőség In: Kopp Mária – Kovács Mónika Erika (szerk.): *A magyar népesség életminősége az ezredfordulón*, Semmelweis Egyetem Magatartástudományi Intézetének tudományos iskolája, Semmelweis Kiadó, Budapest, pp. 167-168.

**Gibson, 2010** – Gibson, H.J. (2010). Active sport tourism: who participates? *Leisure Studies*, 17: 2, 155-170. DOI: 10.1080/026143698375213

**Hallmann et al., 2012** – Hallmann, K., Feiler, S., Breuer, C. (2012). Sport motivation as driver for segmenting sport tourists in coastal regions. *Tourism Review*, Vol. 67, Is. 2, pp. 4-12. DOI: <https://doi.org/10.1108/16605371211236097>

**Humpel et al., 2002** – Humpel, N., Owen, N., Leslie, E. (2002). Environmental factors associated with adults's participation in physical activity: a review. *Am J Prev Med*, 22: 188-199.

**Kirk, 2005** – Kirk, D. (2005). Physical Education, Youth Sport and Lifelong Participation: the Importance of Early Learning Experiences. *European Physical Education Review*, 11. 3. sz. 239-255.

**Kovács et al., 2018** – Kovács, K., Bácsné, Bába É., Lenténé, Puskás A., Moravec, M., Rábai, D. (2018). Institutional differences of students' sport activity in Central Europe. *Hungarian Educational Research Journal (HERJ)*. Megjelenés alatt.



Kovács, 2011 – Kovács, K. (2011). Egyetemisták szabadidős tevékenysége és mentális státusa. *Iskolakultúra*, 10-11, pp. 147-162.

Kovács, 2012 – Kovács, K. (2012). A sporttevékenységek és a tanulás. *Felnőttképzési szemle*, VI. évfolyam 2. szám, pp. 73-86.

Kovács, 2013 – Kovács, K. (2013). A sportolás hatása a debreceni egyetemisták értékrendjére és jövőképeire Felsőoktatási műhely. *Felsőoktatási Műhely: Az Educatio Társadalmi Szolgáltató Kht, Országos Felsőoktatási Információs Központ Kiadványa*, 7: (3-4). Educatio Nonprofit Kft. Budapest, pp. 55-67.

Kovács, 2015 – Kovács, K. (2015). A sportolási szokások és a tanulmányi eredményesség egy határmenti régió hallgatóinak körében. *Budapest Educatio*, 2, pp. 130-138.

Kurtzman, Zauhar, 2006 – Kurtzman, J., Zauhar, J. (2006). Sports tourism consumer motivation. *Journal of Sport & Tourism*, Vol. 10, Is. 1, pp. 21-31.

Matkó et al., 2014 – Matkó A.; Szűcs E.; Takács T.; Kovács S. (2014). Examining the significance of market research in the case of start-ups. *International review of applied sciences and engineering*, 5(2), pp. 181-190.

Mikulán et al., 2010 – Mikulán, R., Keresztes, N., Pikó, B. (2010). A sport mint védőfaktor: fizikai aktivitás, egészség, káros szenvedélyek. In: Pikó B. (szerk.): *Védőfaktorok nyomában. A káros szenvedélyek megelőzése és egészségfejlesztés serdülőkorban*. L'Harmattan – Nemzeti Drogmegelőzési Intézet, Budapest, pp. 115–130.

Miragaiaa, Soares, 2017 – Miragaiaa, D.A.M., Soares, J.A.P. (2017). Higher education in sport management: A systematic review of research topics and trends. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 21. pp. 101-116.

Nagy, Tobak, 2015 – Nagy A., Tobak J. (2015) The role of sport infrastructure: use, preferences and needs. *Abstract – applied studies in agribusiness and commerce* 9: (1-2), pp. 47-52.

Neulinger, 2007 – Neulinger, Á. (2007). Társas környezet és sportfogyasztás – A folyamatos megerősítést igénylő tanult fogyasztás. Ph.D. értekezés, Budapest, Budapesti Corvinus Egyetem.

Perényi, 2005 – Perényi, Sz. (2005). Transmission of Sporting Values via Sports Participation of Hungarian University Students. *Földesi Szabó Gy. – Gál A. (szerk): New Social Conditions in Sport 1990–2005. Hungarian Society for Sport Sciences*, Budapest, pp. 175–191.

Perényi, 2013 – Perényi, Sz. (2013). Alacsonyan stagnáló mozgástrend: a fizikai inaktivitás újratermelődése. *Magyar Ifjúság Tanulmánykötet (Szerk. Székely L.) Kutatópont*, pp. 229-250.

Pfau, 2016 – Pfau, C. (2016). Hallgatói szabadidősport szervezése és jellemzői a felsőoktatásban *TAYLOR: gazdálkodás- és szervezéstudományi folyóirat* Szeged 8. évf. 4. (25) sz., pp. 5-15.

Ramchandani, Coleman, 2012 – Ramchandani, G.M., Coleman, R.J. (2012). The inspirational effects of three major sport events. *International Journal of Event and Festival Management*, Vol. 3. Is. 3, pp. 257-271. DOI: <https://doi.org/10.1108/17582951211262693>

Sallis, Owen, 1999 – Sallis, J.F., Owen, N. (1999). *Physical activity and behavioural medicine*. Thousand Oaks, CA: Sage.

Savella, 2014 – Savella, O. (2014). Turizmus és szabadidősport szokások. *Economica*, Szolnok 2. szám, pp. 118-125.

Szabó, 2006 – Szabó, Á. (2006). Egyetemisták szabadidősport-(szolgáltatás) fogyasztása. *Budapest Corvinus Egyetem, Vállalatgazdaságtan Intézet. Műhelytanulmányok* 76. sz.

Tomova, 2012 – Tomova, D. (2012). The functions of sport in higher education. *APES Skopje*, Vol. 2, pp. 117-120.

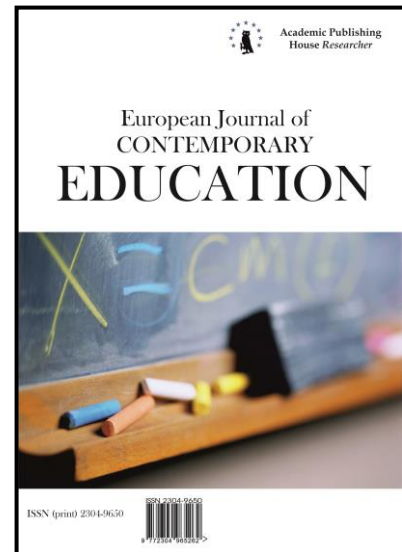
Tóth et al., 2009 – Tóth, Á., Rétsági, E., Szovák, E. (2009). Fizikai aktivitás, percipiált egészség és wellness egyetemisták körében. *Magyar Sporttudományi Szemle*, 10: (37), pp. 19-24.

Tóthné, 2011 – Tóthné, P.L. (2011). A kutatómódszertan matematikai alapjai Eszterházy Károly Főiskola, Eger. P. 54.



Copyright © 2019 by Academic Publishing House Researcher s.r.o.  
All rights reserved.  
Published in the Slovak Republic  
European Journal of Contemporary Education  
E-ISSN 2305-6746  
2019, 8(4): 779-789  
DOI: 10.13187/ejced.2019.4.779  
[www.ejournal1.com](http://www.ejournal1.com)

**WARNING!** Article copyright. Copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of the violation of the author(s) rights will be pursued on the basis of international legislation. Using the hyperlinks to the article is not considered a violation of copyright.



## Digital Technologies in Education: Problems and Prospects for “Moscow Electronic School” Project Implementation

Elena V. Frolova <sup>a</sup>, Tatyana M. Ryabova <sup>a,\*</sup>, Olga V. Rogach <sup>a</sup>

<sup>a</sup> Russian State Social University, Moscow, Russian Federation

### Abstract

The dynamic development of information and communication technologies, the strengthening of the public demand for digitalization of various spheres of life, orient the Moscow education system towards the active introduction of digital technologies and high-tech educational environment development. The purpose of this article is to analyze the advantages and problems of the Moscow Electronic School project implementation, the resources and limitations of digital technology introduction into the learning process of schoolchildren. The main research methods were questionnaires and in-depth interviews with teachers in Moscow schools during the classes teaching electronic skills. The questionnaires were conducted before and after the training process, which made it possible to evaluate its effectiveness, analyze the attitude of teachers to the Moscow Electronic School project, and the readiness to digital technology introduction.

The study identified the problems associated with excessive control over the practices of digital technology use in the teacher’s work, which leads to negative consequences: social tension, imitation of activity. The electronic educational environment is perceived as a space with a low level of security, the risks of losing copyright on intellectual activity results. Dysfunctions were revealed in the motivation system, orienting teachers towards the introduction of digital technologies: hard-to-predict performance, distortion of quality assessment criteria, and manipulation possibilities.

The advantages of digital technology introduction in the framework of the Moscow Electronic School project include the following: improvement of material and technical support quality for schools, visualization of educational materials, the ability to exchange experiences and gain access to best teaching practices.

The key limitations of digital technology introduction are the imperfection of the material and technological base, the dysfunctions in the system of control and motivation of teachers, the

---

\* Corresponding author

E-mail addresses: [tani-87@inbox.ru](mailto:tani-87@inbox.ru) (T.M. Ryabova), [efrolova06@mail.ru](mailto:efrolova06@mail.ru) (E.V. Frolova), [rogach16@mail.ru](mailto:rogach16@mail.ru) (O.V. Rogach)

low level of educational content moderation, their incomplete compliance with the requirements of teachers, lack of digital trust and legal guarantees.

**Keywords:** digital technologies, Moscow electronic school, digital trust, electronic educational environment.

### **1. Introduction**

The modern vector of the Russian school modernization actualizes the search for new tools and teaching technologies that would ensure the growth of students' competencies in the context of digitalization. Active integration of information and communication technologies in all spheres of society actualizes the demand for qualified specialists with computer literacy and skills in the electronic environment. Digitalization of training requires counseling in material, technical, financial and human resources (Parfenova, 2011).

The Moscow school, as the flagship of the Russian education system development, has great resources for the implementation of ambitious goals. The consequence of this situation is the orientation of Moscow educational institutions towards the active introduction of innovations, the creation of a high-tech educational environment, and the development of IT infrastructure (Rogach et al., 2017). Based on the experience of the project implementation, the Moscow Electronic School is being formed and starts to implement the Electronic School project throughout Russia.

Since September 1, 2016, the Moscow Department of Education has been implementing the Moscow Electronic School (MES) project, which provides technological and substantive conditions for schools to enter the global information space. These innovations provide the integration of traditional forms of education and digital technologies, the possibility of lifelong learning using new means of communication. One of the first stages of the project was the abolition of paper diaries and magazines and its replacement by electronic counterparts. An electronic diary provides real-time monitoring of a child's attendance and academic performance, the possibility of direct interaction with a teacher.

The next stage of the project was the creation of high-tech spaces in Moscow classes. The Moscow e-school platform consolidates a variety of educational content – the sets of functional blocks interconnected according to certain principles.

Today, the Moscow electronic school includes two main areas:

1. Project software, which includes: EJD (electronic journal and diary); MES library; MES mobile application.

2. Infrastructure: interactive panels, tablets for students, ultra-light notebooks for teachers, high-speed wireless Internet in all buildings of the educational complex, school servers.

The project provides the equipping of classes by multifunctional interactive panels with a touch screen and built-in speaker. These panels, replacing the classic school blackboards, have a surface for educational material record, a large screen for demonstration presentations, and allow you to view and listen to video and audio-educational materials.

Textbooks and workbooks should be replaced by students' tablets, which will contain all the electronic content necessary for the development of general education. With the full use of MES resources, control measures and tests will completely switch to an electronic platform with an automated verification system.

The implementation of the project will allow a teacher to reduce the time for lesson preparation, search for the necessary information and check its relevance and reliability. The electronic platform of the MES Library provides the opportunity to use ready-made educational material, create your own educational content, and exchange opinions with the teachers of educational institutions of the city of Moscow. At the moment, there are more than 37 thousand interactive lesson scenarios for students from the 5th to 11th grade on the platform of the MES program. An important feature of this project is that all participants of the educational process have access to electronic content: teachers, students and their parents\*.

The implementation of this project provides for the phased technical equipment of Moscow schools, an extensive consulting and information support for the implementation of innovations,

---

\* The official website of the Mayor of Moscow. [Electronic resource]. Access mode: URL: <https://www.mos.ru/city/projects/mesh/>

where a special role is given to the teacher's continuing education system, and the development of his digital competencies.

## **2. Literature review**

The active use of information and communication technologies and the general orientation of Russian society towards digitalization create the prerequisites for cardinal transformations of the educational system (Kirillov et al., 2016). Modernization of teaching tools for schoolchildren and new pedagogical practices of ICT inclusion in the educational process can be considered today as new trends in the development of the Russian education system (Vinichenko et al., 2018).

The studies conducted in developed countries that have positive digitalization experiences in education illustrate a number of patterns (Hietajarvi et al., 2019; Nguyen, 2019). In particular, it has been established that the use of digital technologies in education contributes to the growth of academic performance, the increase of interest in learning due to the active inclusion in the process of new knowledge generation. The fact that the transfer of digital technology to education transforms not only the role of a student, but also the position of a teacher is of interest. According to B. Berry, the digitalization of education, not only increases the enthusiasm of teachers, but also pushes the boundaries of leadership by developing the competencies of working with digital media, and sharing experience in online network space. In some cases, the digitalization of education can provide a solid foundation for a teacher empowering in school management (Berry, 2019).

In the Russian education system, the introduction of information and communication technologies can create the conditions for individual learning path development for schoolchildren, the variability of educational programs and study scenarios (Ryabova, 2018). According to T.N. Noskova, the electronic environment contributes to the enrichment of key subject activities of the educational process, including the educational space expansion by creating new channels of communication between a teacher and a student (Noskova et al., 2016). An additional factor providing the advantages of the electronic educational environment is the expansion of the boundaries of "self-directed learning" and the increase of the student's personal responsibility for learning outcomes (Gibbons, 2002). M.V. Patz believes that a student's role activation is possible in the context of digitalization of education, supported by the possibility of setting personal educational goals, choosing learning paths, designing the content of educational activities (Patz, 2015). The traditional perception of knowledge through passive listening is supplanted by self-education, in which the success of information mastering depends on the students of the educational process (Kabanova, Vetrova, 2018: 517; Salaeva, 2014).

Education in the electronic environment allows us to solve the previously impossible task of education individualization and differentiation. Conclusions characterizing the positive results of the electronic environment development were obtained during the study by Regina Schmid and Dominik Petko. According to the survey of 860 students (8th grade) from 31 Swiss schools, the widespread use of digital technologies, open teaching methods is an important aspect of personalized learning. The results of the study illustrate the positive consequences of digital technology introduction in the learning process: the development of digital skills, the formation of information trust and a positive attitude towards the information and communication environment. It is interesting that the "freedom" or the expansion of variability in the choice of educational activity areas, considered as the most important aspects of personalized learning, did not have a decisive weight in innovation evaluation (Schmid, Petko, 2019). The variability of educational paths is an additional, but not the main advantage of digital technology used in learning. A much more significant effect is the increase of education quality by expanding the boundaries of self-education, and education individualization.

The availability of educational services is considered as one of the indisputable advantages of digitalization (Vinichenko et al., 2016). Digital technologies provide the ability to obtain the required information at the moment of their request. In the context of the growing pace of life, the widespread use of mobile applications, when more and more people own smartphones, the residents of megacities are focused on personalized information right receiving at the moment of this need actualization, that is, "at that moment and in the place where they need it" (Missaoui et al, 2019). The introduction of digital technologies provides the transition from "classroom training to training anywhere and anytime", expanding the role of trainees who can be not only consumers of electronic resources, but also their creators (Akhmetzhanova, Yuriev, 2018).



When analyzing the factors that ensure the effectiveness of digital technology introduction into the educational space, most researchers emphasize the importance of working with pedagogical staff (Gundry et al., 2014; Fleisch et al., 2016), electronic skill training, and management support (Bullock, 2013), logistics and infrastructure support for innovation (Kabanova, Vetrova, 2018a: 712). The process of transition to “digital maturity” requires the consolidation of efforts on the part of all subjects of the educational space in the transition process (Badikov, 2018).

No less important factor is digital trust, overcoming stereotypes and the formation of a conscious attitude, loyalty to the processes of digital technology implementation (Matsiola et al., 2019), the development of partnerships and sustainable organizational ties (Mueller-Oppliger, 2010).

Despite the considerable amount of scientific materials on the problems of digitalization of education, the studies of the limiting factors and resources for digital technology introduction into the education of schoolchildren are presented insufficiently.

### 3. Materials and methods

In international practice, the gap between theoretical innovative IT developments and their implementation is shrinking rapidly, and therefore, the reduction of digital innovation introduction time becomes an urgent need (Kravtsova, 2018). In this context, the studies of the resources and limitations of digital technology introduction, the analysis of the factors ensuring the effectiveness of this process, the optimization tools that fully meet the needs and interests of all interested parties are particularly relevant.

The purpose of this article is to analyze the problems and prospects of the Moscow Electronic School project implementation, the resources and limitations of digital technology introduction into the learning process of schoolchildren.

During the training courses for teachers, the authors conducted a number of studies (questionnaire survey and in-depth interviews). In particular, during the first lesson, teachers were asked to answer questions of a short questionnaire (N = 90). The objectives of this intelligence research were the following ones: self-diagnosis of digital competencies, the assessment of readiness level for organizational changes, trust in them, general perception and assessment of digital technology introduction consequences in school education. At the end of the questionnaire they proposed to express their attitude to the Moscow Electronic School project in the form of an open question. During the last lesson, teachers filled out questionnaire (N = 86) repeatedly to evaluate the tutor's work, analyze the effectiveness of the learning process, its role in digital technology popularization, and the study of value judgment transformation in relation to the project. An additional research method was an in-depth interview of teachers (N = 28) to clarify a number of positions, to understand the essence and content of the changes taking place in Moscow school better, to analyze the interests, motives and stereotypes of the pedagogical community regarding the digitalization of the educational environment, resources and limitations of digital trust development, the introduction of digital technology in the school system.

The study also used the Pearson's  $\chi^2$  test. Statistical significance was set at  $p < 0.05$ .

Research hypothesis: the low level of readiness of the main subjects of the educational space to digital technology introduction, the lack of digital trust, the problems in the system of motivation and control significantly reduce the effectiveness of the Moscow Electronic School project. As an additional hypothesis, the authors put forward the assumption that the teaching staff is the factor in overcoming stereotypes regarding the use of information and communication technologies, the formation of loyalty to digital innovations.

*Limitations: An in-depth interview was conducted using an informal questionnaire, which can be considered as some limitation of this study. Unformalized toolkit is characterized by minimal standardization of the interview procedure, and was used to identify reference points of the research problem. The data obtained during the in-depth interview requires further detailing and study, relying on formalized tools. The in-depth interview materials outline a range of problems that can be considered as promising areas of research within the framework of the issues raised.*



#### 4. Results

The comparative analysis of teacher self-assessment results on the level of digital competence development before and after training, showed a positive trend quite expectedly. Almost all respondents gave high marks to the tutor's work (Table 1). Positive comments noted such qualities as “stress tolerance”, “attentiveness”, “goodwill”, and “patience”.

**Table 1.** The relationship between evaluations of the tutor's work and the usefulness of training within the framework of the Moscow Electronic School project and the attitude to the project as a whole (based on the results of the survey during the last lesson, respondents N = 86)

Assessment of training usefulness in the framework of the project "Moscow Electronic School"	Assessment of the tutor's work during training		
	unsatisfactory	satisfactory	excellent
Yes	0	2	75
No	1	5	3

The results obtained illustrate the very expected relationship between the tutor's work and the assessment of teacher training usefulness in the framework of the Moscow Electronic School project. The number of freedom degrees is 2. The value of the  $\chi^2$  test is 39.968,  $p < 0.001$ . This circumstance demonstrates the dominant role of tutors, his personal and professional qualities in the development of loyal attitude of teachers to the digitalization of education.

In addition, after the completion of the learning process, Moscow teachers became less wary of the proposed digital innovations, the share of respondents who believed that the implementation of the project would interest students increased. There is a slight increase of teachers who see the optimization of working time and material incentive increase as the advantages of digitalization in education.

It should be noted that when you compare the results of the first and second measurements of teacher attitude evaluation to the Moscow Electronic School project, insignificant dynamics is observed: only 15 % of teachers changed their minds for the better. These findings are confirmed by the studies of other authors. In the survey of Bulgarian teachers, only 7 % of respondents considered that the use of information and communication technologies in teaching would be useful for work in view of their high efficiency (Donev, 2018).

In the course of the interview, teachers noted “increasing confidence in the use of new electronic services”, as well as the appropriateness of their use in the educational process. The illustration of the electronic educational environment possibilities during training made it possible to transform a number of stereotypes, change the negative attitude towards digital technologies and the need for their implementation in everyday practice of the educational process. Before the start of training, the answers to the open question about the attitude towards the project were centered in the aspect of digital technology perceiving as an extra load (“very difficult”, “distracting from the main thing”, “no one needs it”, “nothing will help”, “window dressing”). Repeated measurement showed that a number of teachers have undergone the transformation of evaluative characteristics. The answers included the following comments: “this will help to make the lesson interesting”, “if you debug technical defects, MES will become a good assistant.”

During the interview, the following opinions were expressed: “there is some cautious optimism”, “if earlier I thought that digital technology was only an additional burden, now I am interested. Maybe the project will help me in my professional activity”. Similar results were obtained in other studies. Thus, the survey of primary school teachers in Australia showed the importance of theoretical and practical training, providing familiarity with innovative ideas, the methodology of information and communication interaction, and digital technologies. During the training, a significant increase in teachers' confidence and enthusiasm was recorded. The results show the importance of focused vocational training in combination with a collegially supported

implementation phase, as well as the support from school leaders and industry partners to facilitate significant pedagogical changes in technology-mediated learning (Stevenson et al., 2019).

Support from the leadership is of the greatest importance in the system of school teacher motivation. The vast majority of respondents, during the evaluation of the factors that prompted them to start training, chose the option “by management decision”. The obligation to take advanced training courses, on the one hand, caused a sharp rejection in the pedagogical environment, the increase of social tension, but, on the other hand, integrated the entire contingent of the teaching staff in the process of digital competence mastering.

The results of the interview showed that the work of teachers on electronic content creation is evaluated by respondents in the following epithets: “extremely difficult”, “unnecessary”, “difficult”. Respondents noted that content development requires a considerable amount of time, which, in a busy schedule terms, requires teachers to take excessive physical and emotional efforts. The current situation may become a catalyst for professional burnout of teachers, the outflow of teaching staff in view of the high intensity of work at school. The situation exacerbates the pressure exerted on a teacher by the leadership of the educational institution. A significant proportion of respondents indicated tight control of the teacher’s work in the electronic environment; continuous monitoring of platform content use during the lesson.

Excessive control by the leadership contributes to professional deformations of a teacher, which is manifested by such negative consequences as imitation of activity, reduction of the teacher’s personal responsibility for the lesson quality. Teachers noted that a large number of errors in the downloaded content, its poor quality filling requires additional work. Respondents noted: “sometimes during the lesson you have to include the presentation in the background, I tell the students not to pay attention, but I give the material myself”; I do this in order to be noted in the system.”

During the study, respondents noted unsatisfactory technical support for the MES project (see Table 2).

**Table 2.** Relationship between satisfaction ratings with the technical support of the Moscow Electronic School project and the attitude to the project as a whole (based on interview results, N = 28 respondents), ( $\chi^2 = 14,339$ ; the number of degrees of freedom is 2;  $p < 0,01$ )

Attitude to the project "Moscow Electronic School"	Satisfaction with the technical support of the Moscow Electronic School project		
	yes	partially	no
positive	4	2	0
negative	1	6	15

At that, one cannot fail to note other difficulties that arise when they work with software components of the Moscow electronic school. So, for example, some educational materials contain both spelling and substantial errors. According to most educators (22 out of 28 respondents), educational content stored on the MES electronic platform can not be used often for demonstration during classes. This is due to the low level of their moderation. During the interview, there was a fairly common position that the composition of educational content does not meet quality standards. Doubts were expressed about the correctness of the universal orientation of schools towards “disparate electronic materials”, “containing a lot of mistakes”, instead of the established practices of holistic methodological development application prepared by large groups of authors. Teachers noted that “any textbook always has a methodological manual containing a plan and materials for the lesson.” In this situation, the creation of their own electronic content is considered by teachers as “extra workload”, “duplication of work”, “the use of teachers as free labor to convert printed materials into electronic ones.”

A significant amount of low-quality material acts as a limiting factor in the selection of information for a lesson. During the interview, the following opinions were expressed: “It’s difficult to find something worthwhile and worthy”, “You spend a lot of time while watching low-quality material, and empty presentations”.

A separate difficulty in the implementation of the Moscow Electronic School project is the low level of digital trust among teachers. According to interview materials, 70 % of respondents expressed concern about the open placement of their materials on the Internet. Legal guarantees in the field of intellectual property protection could compensate for these problems. However, during the interview, teachers emphasized that “the copyright agreement is not concluded”, “the issue of copyright observance remains open”.

The research materials illustrate the interdependence of teacher age and their relationship to digital technology. The respondents under the age of 35 show a higher willingness to use digital technology in the educational process. This trend is conditioned by a higher level of computer literacy among the respondents of this age group, an active position in the use of digital technologies in everyday life. In addition, the majority of respondents under the age of 35 do not associate the development of digital technologies with the risks of their professional status reduction. In the case of respondents of the older age group, the situation is different. In particular, they are characterized by a warier attitude to the use of information and communication technologies in their activities.

With a long term experience of working at schools without the use of ICTs, the respondents noted the increase of stress and tension. For this group of respondents, it is common to associate the introduction of digital innovation with the loss of stability, and professional well-being. These risks must be taken into account during project further stage planning.

The results of the study are in line with international practice of digital technology implementation. In particular, Rachel Carpenter and Tracy Alloway consider it is necessary to pay special attention to the workload specifics, the level of computer literacy, media competence and the individual characteristics of teachers (Carpenter, Alloway, 2019).

It can be assumed that the individual characteristics of teachers should also be taken into account during the development of measures to motivate the pedagogical corps of Russian schools to digital technology introduction. According to the majority of respondents, the teacher’s motivation system adopted nowadays does not provide positive support for the practice of digital technology use in the educational process. Payments are not provided for the development of quality content, but for the number of downloads. According to respondents, this practice is populist in nature and does not guarantee high-quality filling of the electronic platform with the required materials. At the same time, during the study, the relationship between the assessments of the work motivation system and the attitude of the teachers to the project was not established (see Table 3). The number of degrees of freedom is 2,  $\chi^2 = 0.778$ . The critical value of  $\chi^2$  at the significance level of  $p < 0.05$  is 5.991. The significance level is  $p = 0.678$ .

**Table 3.** Relationship between assessments of the work motivation system in the framework of the Moscow Electronic School project and the attitude to the project as a whole (based on interview results, N = 28 respondents)

Attitude to the project "Moscow Electronic School"	Distribution of answers to the following question: “Does the system of motivation for the teacher’s activities within the framework of the Moscow Electronic School project suit you?”		
	yes	partially	no
Positive	1	4	1
Negative	2	8	12

### 5. Discussion

The Moscow Electronic School project is the driver for digital innovation development, an instrument for material and technical support improvement in respect of educational process, and education quality improvement. Teaching the skills of work in the electronic educational environment for teachers has become one of the essential elements of the project, ensuring its success.

The study revealed that the teaching process, in which Moscow teachers were involved, made it possible to transform their attitudes towards the introduction of digital innovations to some extent. The most positive changes have affected the self-esteem of digital competencies. To some

extent, the attitude to the electronic educational environment has also changed for the better. The development of teacher loyalty is limited by the technical problems, and methodological flaws. The quality of electronic content is criticized. Loaded lesson scripts often have meaningful errors and do not fully comply with pedagogical methods. These shortcomings indicate the need to shift the focus of control, which at the moment focuses solely on tracking the teacher work: his use of digital technologies in educational practice. The monitoring and substantive moderation of electronic content, the elimination of technical problems is more relevant.

The results of the study demonstrated positive dynamics in the perception of digital competence teaching process. The share of respondents critical of the need for continuing education within the framework of the Moscow Electronic School project has decreased. The teachers evaluated their knowledge and skills positively; the most significant contribution to the transformation of their position belongs to the tutor. There is the decrease of tension and a negative attitude towards the expected innovations, in view of information distortion reduction around digital education.

The popularization of the ideas of digital education made it possible to modify a number of stereotypes of the teacher's work in the electronic environment. They decreased the proportion of respondents who believe that the use of digital technology is an extremely complex activity that distracts from the main functions. "Perceived utility" is a key factor which determines the willingness and effectiveness of digital technology (Matsiola, 2019).

The research materials allowed us to put forward the conclusion according to which, the decisive factor in the formation of teachers' readiness for the introduction of digital technologies is the organizational impact of the educational institution authority. The current situation illustrates the established trends in the Russian education management system associated with a high level of distrust in innovation, and resistance to organizational changes (Rogach et al., 2018). At the same time, redundancy of control and organizational pressure from the leadership initiates the negative consequences of education digitalization: imitation of activity, growth of anxiety, stress, etc. An effective motivation system for the teaching staff, the introduction of the principles of group collaboration, and digital trust can serve as a compensating factor (Bodsworth and Goodyear, 2017; Slama, Choukir, 2019).

Assessing the prospects for digitalization of the educational space of Moscow schools, a number of factors should be taken into account:

- Predictable changes and risks; unintended or poorly predictable destructive consequences; stereotypes; new skills, practices and values determined by the introduction of digital technology (Waelbers, 2011)

- Predictable changes and risks of digital technology implementation. The positive changes include the following: saving a teacher's working time, exchange of experience, expansion of access to education, and efficient use of technological equipment. The most significant risks are the following ones: imperfection of the material and technological base, low level of interest and support from the teaching staff. Social risks are burdened by dysfunctions in the motivation system, and the gaps in the training of personnel.

- Unintentional or poorly predictable destructive consequences. These include: the redundancy of control and organizational pressure, practical imitation of activity, low quality of educational content.

- Social stereotypes that limit the processes of digital partnership, and exchange of experience. The electronic educational environment is perceived as a space with a low level of security, the risks of losing its intellectual property. The lack of digital trust limits the teacher's willingness to share experiences and share the results of their intellectual activity on an electronic platform.

- New skills, practices and values determined by the introduction of digital technology. Under the conditions of a dynamically changing world, it is rather difficult to predict trends in the transformation of educational space. Digital technologies, on the one hand, expand its capabilities, reduce time costs during preparation to a lesson and information search. But, on the other hand, the risks of ousting teachers who do not have new digital competencies, working skills in the electronic environment, readiness for self-education and self-development, flexibility and a high level of adaptability during interaction with a new generation of students from the educational space become more relevant.



## 6. Conclusion

Digital technologies are one of the mechanisms to enhance the cognitive needs of a student, a tool of interest increase to learning. The advantages of the Moscow Electronic School project are the following ones: quality control of the educational process, the effective use of technical equipment during a lesson, visualization of teaching materials, optimization of the teacher's working time, the ability to exchange experiences and gain access to the best teaching practices. Significant shortcomings in the resource support of the MES project were represented by technical flaws in the system, a low level of educational content moderation, and a significant number of substantial errors in electronic materials.

The introduction of digital technologies in the educational process is a very ambitious task, which involves overcoming teachers' resistance to organizational changes, developing the ideas of digital trust and cooperation, as well as overcoming a number of stereotypes. Promising trends for the introduction of digital technologies are the following: the motivation system improvement, control practice modernization, elimination of information distortions around the problems of education digitalization, and taking into account the individual characteristics of a teacher during his training.

## References

- Akhmetzhanova, Yuriev, 2018 – Akhmetzhanova, G.V., Yuriev, A.V. (2018). Tsifrovye tekhnologii v obrazovanii [Digital technologies in education]. *Baltiiskii gumanitarnyi zhurnal*, 7 (3 (24)): 334-336. [in Russian]
- Badikov, 2018 – Badikov, I.I. (2018). Vnedrenie innovatsionnogo gosudarstvennogo servisa "elektronnoe pravitel'stvo": trebovaniya i slozhnosti realizatsii [Implementation of the innovative public service "electronic government": requirements and implementation difficulties]. *Sotsial'naya politika i sotsiologiya*, 17, 4 (129): 13-21. [in Russian]
- Berry, 2019 – Berry, B. (2019). Teacher leadership: Prospects and promises. *Phi delta kappan*, 100 (7): 49-55. DOI: 10.1177/0031721719841339
- Bodsworth, Goodyear, 2017 – Bodsworth, H., Goodyear, V.A. (2017). Barriers and facilitators to using digital technologies in the Cooperative Learning model in physical education. *Physical Education and Sport Pedagogy*, 22 (6): 563-579. DOI: 10.1080/17408989.2017.1294672
- Bullock, 2013 – Bullock, S.M. (2013). Using digital technologies to support Self-Directed Learning for preservice teacher education. *The Curriculum Journal*, 24 (1): 103-120. DOI: 10.1080/09585176.2012.74469
- Carpenter, Alloway, 2019 – Carpenter, R., Alloway, T. (2019). Computer Versus Paper-Based Testing: Are They Equivalent When it Comes to Working Memory? *Journal of psychoeducational assessment*, 37 (3): 382-394. DOI: 10.1177/0734282918761496
- Donev, 2018 – Donev, D.S. (2018). Emotsional'nyi obmen v pedagogicheskom obshchenii pri primenenii interaktivnykh metodov [Emotional exchange in pedagogical communication using interactive methods]. *Obrazovanie i samorazvitie*, 3 (3): 53-58. [in Russian]
- Fleisch et al., 2016 – Fleisch, B., Taylor, S., Schöer, V., Mabogoane, T. (2016). Failing to catch up in reading in the middle years: The findings of the impact evaluation of the Reading Catch-Up Programme in South Africa. *International Journal of Educational Development*, 53: 36-47. DOI: <http://dx.doi.org/10.1016/j.ijedudev.2016.11.008>
- Gibbons, 2002 – Gibbons, M. (2002). *The self directed learning handbook: Challenging adolescent students to excel*. San Francisco, CA: Jossey Bass.
- Gundry et al., 2014 – Gundry, L.K., Ofstein, L.F., Kickul, J.R. (2014). Seeing around corners: How creativity skills in entrepreneurship education influence innovation in business. *The International Journal of Management Education*, 12(3): 529-538 DOI: <http://dx.doi.org/10.1016/j.ijme.2014.03.002>
- Hietajarvi et al., 2019 – Hietajarvi, L., Salmela-Aro, K., Tuominen, H., Hakkarainen, K., Lonka, K. (2019). Beyond screen time: Multidimensionality of socio-digital participation and relations to academic well-being in three educational phases. *Computers in human behavior*, 93: 13-24. DOI: 10.1016/j.chb.2018.11.049
- Kabanova, Vetrova, 2018 – Kabanova, E.E., Vetrova, E.A. (2018). The practice of implementing bologna process in the education sector in the Russian Federation: trends and



consequences. *European Journal of Contemporary Education*, 7(3): 511-520. DOI: 10.13187/ejced.2018.3.511

[Kabanova, Vetrova, 2018a](#) – Kabanova, E.E., Vetrova, E.A. (2018). Modern Medical Higher Education Institutions in Russia. *European Journal of Contemporary Education*, 7(4): 710-716. DOI: 10.13187/ejced.2018.4.710

[Kirillov et al., 2016](#) – Kirillov, A.V., Vinichenko, M.V., Melnichuk, A.V., Melnichuk, Y.A., Vinogradova, M.V. (2016). Improvement in the learning environment through gamification of the educational process. *IEJME – Mathematics education*, 11(7): 2071-2085.

[Kravtsova, 2018](#) – Kravtsova, A.V. (2018). Tsifrovaya ekonomika i konsaltingovyi rynek uslug: problemy vzaimodeistviya [Digital economy and consulting services market: problems of interaction]. *Sotsial'naya politika i sotsiologiya*, 17, 4 (129): 22-30. [in Russian]

[Matsiola et al., 2019](#) – Matsiola, M., Spiliopoulos, P., Kotsakis, R., Nicolaou, C., Podara, A. (2019). Technology-Enhanced Learning in Audiovisual Education: The Case of Radio Journalism Course Design. *Education sciences*, 9(1), Is. 62. DOI: 10.3390/educsci9010062

[Missaoui et al., 2019](#) – Missaoui, S., Kassem, F., Viviani, M. (2019). LOOKER: a mobile, personalized recommender system in the tourism domain based on social media user-generated content. *Personal and Ubiquitous Computing*: 1-17. DOI: <https://doi.org/10.1007/s00779-018-01194-w>

[Mueller-Oppliger, 2010](#) – Mueller-Oppliger, V. (2010). Experiences and Concepts Related to Gifted Education and Talent Development in Switzerland. *Gifted Education International*, 26(2-3): 219-233.

[Nguyen, 2019](#) – Nguyen, T.L. (2019). Enhancing students' learning motivation for better academic performance: An empirical case in Dong Nai Province, Vietnam. *Advanced and applied sciences*, 6(3) (March 2019): 17-22. DOI: <https://doi.org/10.21833/ijaas.2019.03.003>

[Noskova et al., 2016](#) – Noskova, T.N., Pavlova, T.B., Yakovleva, O.V. (2016). Analiz otechestvennykh i zarubezhnykh podkhodov k postroeniyu peredovykh obrazovatel'nykh praktik v elektronnoi setevoi srede [Analysis of national and foreign approaches to the construction of advanced educational practices in the electronic network environment]. *Integratsiya obrazovaniya*, 20 (4 (85)): 456-467. [in Russian]

[Parfenova, 2011](#) – Parfenova, A.S. (2011). Informatsionnye tekhnologii v obuchenii studentov vuza [Information technology in the teaching of university students]. *Nauchnye issledovaniya v obrazovanii*, 2: 40-44. [in Russian]

[Patz, 2015](#) – Patz, M.V. (2015). Ob innovatsionnosti i samoobuchenii studenta vuza v setevoi perspektive [On the innovativeness and self-education of a university student in a network perspective]. *Kazanskiy pedagogicheskii zhurnal*, 4-1: 42-46. [in Russian]

[Rogach et al., 2017](#) – Rogach, O.V., Ryabova, T.M., Frolova, E.V. (2017). Analiz problem upravleniya innovatsionnym razvitiem shkol'nogo obrazovaniya v sovremennoi Rossii [Analysis of the problems of managing the innovative development of school education in modern Russia]. *Integratsiya obrazovaniya*, 21(4): 669-682. DOI: 10.15507/1991-9468.089.021.201704.669-682 [in Russian]

[Rogach et al., 2018](#) – Rogach, O.V., Frolova, E.V., Ryabova, T.M. (2018). Theory of "trust" in the focus of expectation study concerning educational space key actors. *European Journal of Contemporary Education*, 7(2): 392-399.

[Ryabova, 2018](#) – Ryabova, T., Frolova, E., Rogach, O. (2018). Interaction of educational process participants in network online-space: the trends of new media reality development. *Mediaobrazovanie*, 3: 140-146.

[Salaeva, 2014](#) – Salaeva, A.L. (2014). Kul'turno-obrazovatel'noe prostranstvo goroda kak pedagogicheskii fenomen [The cultural and educational space of the city as a pedagogical phenomenon]. *Istoricheskaya i sotsial'no-obrazovatel'naya mysl'*, 6-2: 350-353. [in Russian]

[Schmid, Petko, 2019](#) – Schmid, R., Petko, D. (2019). Does the use of educational technology in personalized learning environments correlate with self-reported digital skills and beliefs of secondary-school students? *Computers & education*, 136: 75-86. DOI: <https://doi.org/10.1016/j.compedu.2019.03.006>

[Slama, Choukir, 2019](#) – Slama, R.B., Choukir, J. (2019). Faculty members' productivity and research funding: Intrinsic and/or extrinsic motivations. *Advanced and applied sciences*, 6(4) (April 2019): 130-142. DOI: <https://doi.org/10.21833/ijaas.2019.04.015>

[Stevenson et al., 2019](#) – Stevenson, M., Bower, M., Falloon, G., Forbes, A., Hatzigianni, M. (2019). By design: Professional learning ecologies to develop primary school teachers' makerspaces pedagogical capabilities. *British journal of educational technology*, 50(3): 1260-1274. DOI: 10.1111/bjet.12743

[Vinichenko et al., 2016](#) – Vinichenko, M.V., Frolova, E.V., Kabanova, E.E., Kozyrev, M.S., Evstratova, T.A. (2016). The youth employment problems. *Journal of Advanced Research in Law and Economics*, 7(2): 378-387.

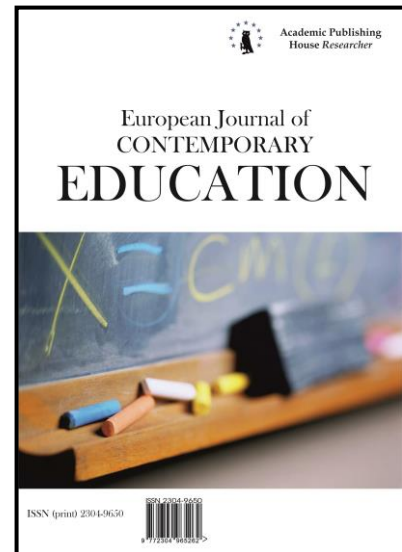
[Vinichenko et al., 2018](#) – Vinichenko, M.V., Kirillov, A.V., Melnichuk, A.V., Oleksyuk O.M., Chulanova, O.L. (2018). Forming the Creative Potential of a Candidate Pool in Higher Education Institutions. *TOJDAC – Turkish Online Journal of Design Art and Communication*.

[Waelbers, 2011](#) – Waelbers, K. (2011). *Doing Good with Technologies: Taking Responsibility for the Social Role of Emerging Technologies, Philosophy of Engineering and Technology*. Springer Science. Business Media B.V.



Copyright © 2019 by Academic Publishing House Researcher s.r.o.  
All rights reserved.  
Published in the Slovak Republic  
European Journal of Contemporary Education  
E-ISSN 2305-6746  
2019, 8(4): 790-800  
DOI: 10.13187/ejced.2019.4.790  
[www.ejournal1.com](http://www.ejournal1.com)

**WARNING!** Article copyright. Copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of the violation of the author(s) rights will be pursued on the basis of international legislation. Using the hyperlinks to the article is not considered a violation of copyright.



## Correlations Between Components of Social Emotional Learning of Secondary School Students in Ho Chi Minh City, Vietnam

Son Van Huynh <sup>a</sup>, Vu Thien Giang <sup>a,\*</sup>, Tu Thi Nguyen <sup>a</sup>, Luong Tran <sup>b</sup>

<sup>a</sup> Ho Chi Minh City University of Education, Vietnam

<sup>b</sup> Can Tho University, Vietnam

### Abstract

The article discusses the correlation of the social emotional learning (SEL) components perceived by secondary school students in Ho Chi Minh City, Vietnam. The study results show that there is a close correlation among SEL components. Based on the findings, it is implied that the development of SEL competences for secondary school students is an integrated process requiring interactions among different components of the SEL model and forming the model itself via the changes of each component. Moreover, when one component is affected, the influence does not merely happen on that specific component, yet on the entire SEL model as it was a case for the participating secondary school students in this study.

**Keywords:** correlation, secondary school students, social emotional learning, SEL components, Vietnam.

### 1. Introduction

Social emotional competence has been increasingly studied in recent decades for better understanding of the essential social capacities. From one survey in the U.S. on how SEL prepared for transition across the grades of students, the findings emphasised the importance of social cognition and emotional development in the schools. This study reported the results from a meta-analysis in 2011 showing that students received SEL guidance had an average academic grade which is 11 % higher than those who did not receive SEL (DePaoli et al., 2017). Furthermore, thousands of schools in the U.S. and other countries have implemented SEL programs (Humphrey, 2013; Weissberg, Cascarino, 2013), and the Departments of Education at a number of states in the U.S. have issued, or in the process of issuing, standards to develop SEL programs for each grade (Dusenbury et al., 2015). This study also points out the difference among age in SEL competence.

---

\* Corresponding author

E-mail addresses: [thienvusto708@gmail.com](mailto:thienvusto708@gmail.com) (Vu Thien Giang), [sonhv@hcmue.edu.vn](mailto:sonhv@hcmue.edu.vn) (Son Van Huynh), [tunguyentlh@hcmue.edu.vn](mailto:tunguyentlh@hcmue.edu.vn) (Tu Thi Nguyen), [luong@ctu.edu.vn](mailto:luong@ctu.edu.vn) (Luong Tran)

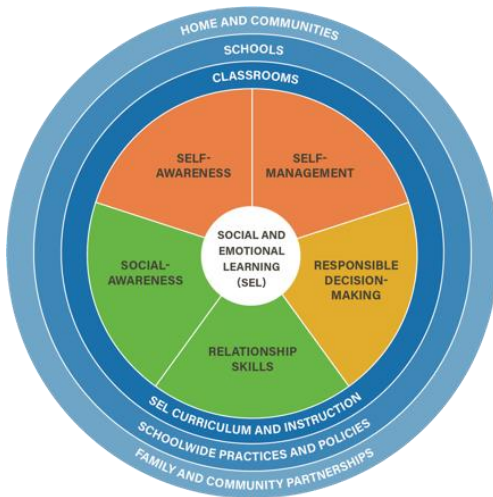
SEL capacity is correlated with the psychological changes according to the age of the students, especially between 12–13 years and 14–15 years (puberty period with strong psychological changes). As a result, many states and local policy makers have provided financial supports for these SEL programs.

Social emotional competence has played a significant role in personal development of each student. Some researchers also acknowledged the necessity of teacher-student relationships in developing students' commitment to their study and the students' successful academic performance. If teachers create a strong and positive relationship with students in school life, this can enhance and develop the student's social emotional competence (Hamre, Pianta, 2001; Jennings, Greenberg, 2009; Durlak et al., 2011). Safe and disciplined environment which reinforces positive behaviors in the classroom is considered as one of the requirements for good academic performances and the norms of social emotional competence's evaluation (Marzano, 2003). Gender is also an interesting aspect in SEL studies. Kumari et al. (2019)'s study showed that there was a significant difference between boys and girls when studying self-awareness of lower secondary students. At the age of puberty (11–15 years), most girls were aware of themselves better and able to adjust behaviors more appropriate in life and study. Additionally, there are other human-related factors, which can promote the student's academic success via social emotional competence. Students with self-awareness and self-confidence of their learning capacity would give more efforts and more patience when facing with challenges (Durlak et al., 2011; Dweck et al., 2014). Likewise, students who have clear study objectives, disciplinedness, self-motivation, stress management skills and organization skills would have better approaches to their study and thus better performance (Duckworth, Seligman, 2005; Elliot, Dweck, 2005; Durlak et al., 2011). Moreover, students who have problem-solving skills to overcome barriers and are responsible for their studies would have higher academic scores (Durlak, 2015).

Coupled with changes in psychophysiology is the development of cognition, emotion and willing, which makes this period a complex and challenging one for secondary school students, especially in self-awareness and social relationship (Hoa, 2008). If families and schools do not understand and provide these students with appropriate supports, they will face many difficulties and crises during this changing transitional period. Furthermore, this may result in delinquent behaviors and crimes, which would have significant influences on their future (Kendziora, Yoder, 2016). Therefore, the development of secondary school students' social emotional competence needs to be consistently implemented through a combination of educational forces. This study aims to investigate the (a) **social emotional competence of students** in Vietnamese secondary schools and (b) **the correlations between various components of social emotional learning**. Based on the results, suggestions will be offered on how to integrate SEL learning into Vietnamese new general education program for secondary school students.

### **The SEL model**

The SEL model used in this paper includes five core competencies proposed by Collaborative for Academic, Social, and Emotional Learning (CASEL, 2017). The model is considered as one of the basic and characteristic models of SEL studied by many researchers recently (Figure 1).



**Fig. 1.** The SEL model (CASEL, 2017)

The SEL model consists of three aspects and five competencies.

- The three aspects of SEL model include:

+ Social aspect (Social) shows interest in forming and developing positive relationships with others such as friends, teachers, family members, and society. This social part of SEL reflects development with other individuals.

+ Emotional aspect (Emotion) expresses an interest in forming and developing self-awareness, which is particularly relevant to emotions and feelings. This emotional part of SEL reflects the inner development of human life.

+ Learning aspect, which shows the development and adjustment both emotionally and socially and can be taught and learned through instruction, practice, and feedback. Thus, SEL has a connection with the school or other educational environments on different dimensions and specific dimensions.

- The five competencies of the SEL model includes:

+ Self-awareness (Identifying emotions, Accurate self-perception, Recognizing strengths, Self-confidence, Self-efficacy).

+ Self-management (Impulse control, Stress management, Self-discipline, Self-motivation, Goal-setting, Organizational skills)

+ Social awareness (Perspective-taking, Empathy, Appreciating diversity, Respect for others)

+ Relationship skills (Communication, Social engagement, Relationship-building, Teamwork)

+ Responsible decision-making (Identifying problems, Analysing situations, Problems solving, Evaluating, Reflecting, Ethical responsibility) (Binh, 2013).

In all of CASEL's program reviews from preschool through high school, and across all the many programs they have reviewed, they have observed that evidence-based SEL programs used one or more of the following four approaches to promoting social and emotional competence across the five core competency cluster (Dusenbury et al., 2015). CASEL has identified four general approaches to SEL instruction in the classroom:

- *Free-standing lessons that provide step-by-step instructions to teach students' SEL competencies* (e.g., lessons that help students identify and effectively label their feelings, lessons on goal setting, communication, and decision making).

- *General teaching practices that create conditions in the classroom and school designed to support SEL.* These include classroom routines and teaching practices such as cooperative learning that help students build positive relationships and forms of inquiry that create student-to student dialogue to help students reflect and develop greater self and social awareness.

- *Integration of SEL skill instruction, general teaching practices, or both, as part of a broader academic curriculum.* For example, integrating SEL lessons with language arts, social studies, or science and math.



• *Establishment of school-wide organizational structures and policies, as well as leadership, to support SEL systemically.*

In this paper, we propose a strategic approach to SEL for Vietnam's secondary school students based on the correlation between the five components of SEL model.

**Methods and sample selection**

This paper reports part of a large project aiming at designing educational contents, especially life skills education through experience-based activities and integrated teaching methods to develop life skill capacities for students meeting the new educational requirements of the general education.

This study applies a quantitative approach to investigate the social emotional competence of students in Vietnamese secondary schools and the correlations between five components of the SEL model using two questionnaires. The first questionnaire included: (a) introduction of the study's objectives and instructions to answer the survey; (b) participant information covering name of school, grade, gender, ethnic, age, conduct record, and academic scores; and (c) the content of the survey. The content focuses on five aspects: self-awareness with 23 questions; awareness of other people with 17 questions; self-management with 10 questions; relationship with 17 questions; responsible decision-making with 13 questions. The questionnaire adapted 3-point Likert scale proposed by Jacob and Michael (1971). The second questionnaire has open-ended items and problem solving exercises in order to understand participating students' capacities in solving written problems related to each SEL component.

The questionnaires were distributed to secondary school students from sixth grade to ninth grade from February to June, 2018. The study was conducted in four secondary schools in Vietnam. These schools are in different districts in Ho Chi Minh City. They are not gifted schools.

Data collected from the questionnaire was analysed using SPSS 20.0 for Pearson Correlation which could find the positive or negative correlation between the five SEL components. Distance value was calculated: Distance value = (Maximum – Minimum) / n = (3-1)/3 = 0.67. The levels' significance was coded as following: from 1 to 1.67= under average; from 1.68 to 2.33= average, and from 2.34 to 3= above average.

Table 1 illustrates participants of the study and their demographics

**Table 1.** Participants of the study

	Items	N	%
Grade	6 (12 years old)	121	23.80
	7 (13 years old)	70	13.80
	8 (14 years old)	61	12.00
	9 (15 years old)	257	50.50
Gender	Male	194	38.10
	Female	315	61.90
School	A (district 1, Ho Chi Minh city)	107	21.00
	B (district 5, Ho Chi Minh city)	281	55.20
	C (district 4, Ho Chi Minh city)	121	13.80
Academic year-end scores (over 10)	Excellent (above 8.0 points)	161	31.60
	Good (from 6.5 to 7.9 points)	180	35.40
	Fair (from 5.0 to 6.4 points)	144	28.30
	Poor (under 4.9 points)	24	4.70
Conduct record	Very Good (good morality, good study, not violating school rules)	468	91.90
	Good (minor violations in the rules but promptly repaired)	34	6.70
	Fair (violated some errors in the school rules and slowly repaired)	6	1.20
	Poor (seriously violating school rules)	1	0.20
	Total	509 participants	

**2. Results**

**The social emotional competence of secondary school students'**

The results of students' social emotional competence are presented in [Table 2](#):

**Table 2.** The social emotional competence of secondary school students

SEL components	Mean
Self-awareness	<b>2.40</b>
Social-awareness	<b>2.20</b>
Self-management	<b>2.25</b>
Relationship skills	<b>2.29</b>
Responsible decision-making	<b>2.35</b>
<b>X</b>	<b>2.30</b>

The mean of the entire SEL model is 2.3 – an average level. Students had their competence of self-awareness the highest and social-awareness the lowest. This result somehow reflects the psychological characteristics relating to cognitive capability of the secondary school age (Tien et al., 2016). According to Foster et al. (2005), the SEL model has been introduced into the secondary education programs in the United States, and 59 % of schools have successfully applied the model to improve social-emotional competence for students. In addition, according to a pilot study at elementary, secondary and high schools in Illinois, USA, the competence of Self-awareness and Self-management which was self-evaluated by students, was the most markedly improved competency group when SEL model was deployed to the educational programs (Durlak, 2015).

The competences of social-awareness, relationship skills, and responsible decision-making by participating students are average and above average (responsible decision-making). This is similar to what Antognazza and Kapler (2017) found about secondary school students' capacity to identify emotions of themselves and others. In elementary school, children have the ability to understand the feelings of people around them, as well as observing pictures of other people's emotional expressions because from the first years of life, children learn the world around them with emotion. More exposure, as well as preschool and primary education programs focus on emotional education for children, so, when going to secondary school, these capabilities continue to be developed in a positive direction (Antognazza, Kapler, 2017). Regarding the capability to make responsible decisions, at the secondary school level, they think better, they see the problem in many different ways and think more about life, so the decision-making process ensured the quality of responsibility (Tien et al., 2016). In addition, divergence found in competence of self-management (2.25) and relationship skills (2.29) also give us important data. At secondary school, due to the change in mainstream activities, they look for relationships with quality rather than quantity (Son, 2011). They are more interested in each other's characteristics, personalities, interests, and attitudes in a group of friends, thereby they want to build good and sustainable relationships and associations (Ngo, 2012). On self-management competence, Ngo (2012) believed that the development of self-awareness varies by age, and secondary school age are better realized themselves because of the development of puberty as well as the development of awareness about personality traits and emotional life.

**The influence of Gender and Age on students' SEL competence**

The difference in gender and age of the participants when we studied the SEL competence of secondary school students was presented in [Table 3](#):

**Table 3.** The Difference in Gender and Age

Sources	Mean	p
Gender	Boy	2.23
	Girl	2.34
Age	12 years old	2.31
	13 years old	2.31
	14 years old	2.30
	15 years old	2.28

In gender indicator,  $p = 0.000$  showed that there was a significant difference between boy and girl in SEL competence. Female students' SEL competence seemed to be higher than that of male students with the disparity of 0.11.

In age indicator,  $p = 0.542$  showed that there had not a significant difference among the ages or the grade students were in. This mean the SEL competence of Vietnamese secondary school students had no difference according to the age development.

#### The correlation among five SEL components

The correlation between various SEL components by secondary school students in this study were analyzed based on one to one analysis and the entire SEL model (see Table 4).

**Table 4.** Correlation coefficient between different SEL components

Correlation coefficient	Correlation coefficient									
	Self-awareness		Social awareness		Self-management		Relationship		Responsible decision making	
	r	p	r	p	r	p	r	p	r	p
Self-awareness			.647*	.000	.184*	.000	.531**	.000	.290*	.000
Social awareness	.647*	.000			.436*	.000	.594*	.000	.357*	.000
Self-management	.184*	.000	.436*	.000			.531**	.000	.527*	.000
Relationships	.531**	.000	.594*	.000	.531**	.000			.592*	.000
Responsible decision making	.290*	.000	.357*	.000	.527*	.000	.592*	.000		

\*\* .  $p < 0.01$  level (2-tailed).

#### Associations between Self-awareness with other components of SEL

With significant level  $p = 0.000$ , self-awareness had a positive correlation with social awareness, self-management, relationship, and responsible decision-making. Therefore, it is suggested that the higher self-awareness the students have, the higher social awareness, self-management, relationship skill and responsible decision-making they will have. This also aligns with the results from problem solving exercises. One example of this is that when being asked, "When doing something wrong, or make mistakes," some students answered, "they know that but cannot specify the feelings" while others knew their feelings, naming some feelings such as "afraid, embarrassed, sad, ashamed". This indicates a quite complicated process and different capabilities in self-awareness of secondary school students, which is useful for organizing the educational activities to develop students' self-awareness competence.

#### Association between social awareness with other components of SEL

With significant level  $p = 0.000$ , it is found that social awareness had a positive correlation with others. It means, the higher level of self-awareness, the higher level of self-management, the better relationship, and the more effective responsible decisions making process.

Data from solving-problem exercises found that social awareness had a connection with social relationship. For the question, "Do you know what your teachers' feelings are when you chat with friends about unrelated topics during class hours?" Some students said, "I didn't know," or "I didn't know well," and other students responded, "I knew that they were sad, angry, and unpleasant." There was a wide disparity among students answering the question showing that understanding other people's feelings to be behave well was not easy to them. The findings perhaps may indicate students' limited competence in social awareness and lack of concerns about other people. This could possibly be a major reason of students' indifference, lack of concerns about other people or even emotionless behaviors (Loan, 2013).

Therefore, when organizing educational activities to develop social awareness for students, it is necessary for educators and teachers to take into accounts the correlation between social

awareness and the other SEL components. Besides, analysis of emotions in different situations, progress, and reactions is also required to develop students' communication and interaction competence.

#### ***Associations between self-management with other SEL components***

With secondary school students, self-management capacity is very important and, therefore, is required to be developed. Person correlation test between self-management and other components of SEL indicates a strong correlation between self-management and the other SEL components with significant level  $p = 0.000$ . The more students can control themselves, the more they can be aware of themselves and of other people, the better they manage their social relationships, and the more effectively in making responsible decisions.

Findings from problem-solving exercises also had the same results. With the question, *"Recently, M often called your nickname for teasing... You were very angry. Today, M called that nickname again, laughed at you, and teased you. What would you do?"* Some students showed their self-management capacities, but some other students replied, *"Don't know what to do."* In particular, some students could not control themselves answering that, *"Beat my friend."* This shows that self-management capacity of students in secondary school was still limited. Without concerns and high attention given to educate these students and to equip them with life skills, they may have a tendency of bullying their friends, one of the negative situations existed in Vietnam these days (Son, 2018).

#### ***Associations between management of relationship skills with other components***

With significant level  $p = 0.000$  the test demonstrates a strong association between the relationship skills with the other SEL components.

With the situations given in the problem-solving exercises: *"N just transferred to your class. She talked very little and was usually very shy. What would you do with her?"* Several students knew how to develop relationships with her, some students did not know how to communicate with her, some students *"don't care"* about N, *"ignore,"* and even some students did not know how to develop the relationship with this student and also hurted her by saying bad things or cyber bullying at the school. This was of great concern as peer relationship was one of the main relationships of students in this age groups. Students cannot effectively develop with these problems existed.

#### ***Association between responsible decision-making with other components in SEL model***

The results show a positive correlation between responsible decision-making with self-awareness, social awareness, self-management, and relationship, with  $p = 0.000$ .

This was proved from question *"Once you went around the part for a walk, you eat the biscuit but you could not find the trash bin to throw away the plastic cover of the biscuit. What will you do?"*, some students have irresponsible decision as they did not know what to do with the biscuit cover. Besides, there also were students who have responsible and good-manner behaviors. From this point, secondary school students already noticed the responsibility in their decisions, though the capacities were quite different within the same age groups.

#### ***The meaningful difference in level of the five SEL components***

The study also found that secondary school students had different levels in the five SEL components. Mean scores of self-awareness in different perspectives range from 1.77 to 2.86; social awareness's mean scores ranged from 1.61 to 2.81; self-management's mean scores ranged from 1.7 to 2.8; relationship skills' mean scores varied between 1.86 and 2.8; responsible decision-making's mean scores were between 1.67 and 2.78, all mean scores of the five SEL components spread evenly across all 3 levels, from level "under average" to level "above average." This reflects that students were varied in their perspectives of self-awareness competence. They have well understanding of other people in some perspectives or characteristics but may not quite understand their other perspectives. They can handle and manage some relationships or situations, and also some that are unmanageable for the students. They can control their feelings, emotions and behaviors in some cases or on the opposite. They cannot also make the right decision in time but also feel hard to decide in some situations. It based on their SEL competence.

This result allows us to draw a conclusion: the SEL competence of secondary school students in Vietnam has a clear differentiation. Therefore, the establishment of an SEL education model, as



well as the development of the new educational program, must comply with differentiation teaching. We recommend differentiating students into 3 groups that correspond to 3 levels of SEL competence (under average, average and above average level) and develop appropriate programs for each group to stimulate and facilitate the development of the students' capabilities.

### **3. Discussion**

The study results indicate that secondary school students self-evaluated their SEL competence as average on a 3-likert scale and strong and positive correlations between different components of SEL. This implies that SEL competence in secondary school students can be adjusted and developed as a whole or individually.

In alignment with other previous studies, strong and positive correlations between different components of SEL were also found in this study. Previous studies have found that there is a positive correlation between self-awareness and health and emotion (Daunic et al., 2013), expectancy (Durlak et al., 2011), life satisfaction (Jones et al., 2015), anti-social behaviors, and school absenteeism (Brackett et al., 2004). It is suggested that teaching methods for the development of self-awareness from the other countries could be learnt to be applied into the Vietnamese education program.

Results from previous studies also showed a positive correlation between social awareness with establishing relationships with other individual in society (Bahman, Maffini, 2008; Theobald et al., 2015; Davidson, 2011), with high notice and true concerns about people's opinions and view points (Roffey, 2011). Some researchers found the correlations between social capacities with high notice and true concerns about others' opinions, point of views and also the correlation with students' academic score (Bahman, Maffini, 2008; Davidson, 2011; Denham et al., 2012). If we tried searching in newspapers in February 2015, there were 433 papers about: violence, robbery, murder, etc. in different places around the country, relating to the indifference and lack of responsibility, etc. of the residents; information with comments were 135 posts; and the words "indifference/emotionless" were mentioned in 41 posts. On average, there were 15 papers every day talking about the emotionless behaviors between people and the related discussions happening every day in different newspapers. Furthermore, there was a writing about Emotionless behaviors of a grade 9 student in Hanoi city's secondary school. This writing has left deep impressions on readers and has been mentioned in different social media national and international posts. This is also a warning alarm of the risks of dismissing moral and social standards as well as the huge concerns of young people nowadays. Moreover, some professional and experts' comments on this issue deserve high attention: emotionless behaviors have a significant impact on many people. As more and more people do not want to prevent bad behaviors happening in society, these behaviors have been increasing widely (Loan, 2013). Thus, the international and Vietnamese authors have similarities in the impact of social awareness competence on human psychological development. Based on this assertion, it is possible to propose case-based exercises or experience stories related to social awareness to enhance this competence in the new general education program.

Moreover, the results concluded that the students' self-management competence were not stable and different situations had significant effects on this competence. Peterson's research team has found that self-management and the student/teacher matching intervention led to increases in targeted appropriate social skills and decreases in off-task behavior for students in multiple general education setting (Peterson et al., 2006). Thereby, the competence of Vietnamese students' self-management is less than international students. This is an issue needed to be considered in the new education program to improve this competence, contributing to helping Vietnamese students have better self-management.

Some studies showed the positive correlation between relationship skills and emotional health (Hattie, 2009), negative correlation with anti-social behaviors (Garner, 2010) and mental health such as anxiety and depression (Daunic et al., 2013). In general, there is a spread of relationship skills competence among individuals. This also has differences between countries because of the communication capability is influenced by cultural and social factors. This is a matter of concern when integrating this component into the educational program.

There were the positive correlations between responsible decision-making and healthy emotions and behaviors of students (Forgas, 2000; Humphrey et al., 2007) and children mental health (Jones et al., 2015). Students with high competence of responsible decision-making can



have better self-awareness, better social awareness, better self-management and more effective management of social relationships. This result shows that the responsible decision-making competence of Vietnamese students has an internal disparity with each other. When compared to the international students, Vietnamese students are inferior. Therefore, the design of practical exercises or educational activities that help improve and enhance students' responsible decision-making competence is an essential requirement in the development of the SEL model applied in the new educational program.

However, our study still has certain limitations. The evaluation of the student's SEL competence is only based on the analysis of the questionnaire results, with no comparison with the student's self-evaluation. Therefore, the long-term observation as well as the addition of interview results or case studies can support this study to be deployed on a larger scale and get more accurate. In addition, gender and age differences have been clarified in this study. But we have not explained the gender difference, nor the difference in the age among the participants because of the lack of arguments for interviews and assessments from the educational forces (teachers, educators and educational manager). If possible, studies of differences in SEL competence between boys and girls by age (among secondary school age; making comparisons between primary and secondary school students) would be promising research directions later.

#### **4. Conclusion**

The associations between different SEL components in secondary school students were analyzed in one-to-one associations and as a whole within the SEL model.

The results show that Vietnamese secondary school students' SEL competence is at average level. This data is very important for educational managers as well as teachers to pay attention to developing more appropriate educational content as well as methods to properly assess students' capability. Thereby conducting the teaching methods suit for the students' capability to develop their SEL competence.

There were a strong and positive correlations between SEL components. This is an important basis for teaching students to differentiate SEL abilities. At the same time, based on this result, we propose designing and developing an education program for SEL competency training that is consistent with the levels assigned to secondary school students.

It is suggested that SEL competence of secondary school students requires the interactions among five SEL components. New educational programs in Vietnam are required to be designed in a way to improve current level of students' SEL competence, considering a strong correlation among the five components advanced educational activities in each component in SEL to enhance students' social emotional competence. Moreover, when affecting on one specific component, it would not merely has influence on that specific component, yet the whole SEL capacity of secondary school students in general. This is a significant point in development SEL capacity of Vietnamese secondary school students, opening new directions for implementing SEL education. In the current conditions of systematic and synchronized education programs, policy makers and other stakeholders may consider the adaptation of SEL education into the available life skill training program. Development specific component or the whole SEL model has potential and feasible applications in the future education program.

#### **5. Acknowledgements**

This research is funded by Vietnam National Foundation for Science and Technology Development (NAFOSTED) under grant number 501.01-2016.04.

#### **References**

[Antognazza, Kapler, 2017](#) – *Antognazza, D., Kapler, D. (2017). Tài liệu tập huấn Giáo dục trí tuệ cảm xúc – Kinh nghiệm thế giới và ứng dụng vào Việt Nam [Training material for Emotional Intelligence Education – World experience and application to Vietnam].* Ho Chi Minh city University of Education cooperated with University of Arts and Sciences Application in Southern Sweden.

[Bahman, Maffini, 2008](#) – *Bahman, S., Maffini, H. (2008). Developing Children's Emotional Intelligence.* New York: Continuum International Publishing Group.

**Binh, 2013** – *Binh, N.T.* (2013). Giáo dục Kỹ năng sống cho học sinh phổ thông [Lifeskill Education for Highschool student]. Hanoi: University of Education Press. P. 40.

**Brackett et al., 2004** – *Brackett, M.A., Mayer, J.D., Warner, R.M.* (2004). Emotional intelligence and its relation to everyday behavior. *Personality and Individual Differences*, Vol. 36: 1387-1402. DOI: [https://doi.org/10.1016/S0191-8869\(03\)00236-8](https://doi.org/10.1016/S0191-8869(03)00236-8)

**CASEL, 2017** – Collaborative for Academic, Social, and Emotional Learning (CASEL). (2017). *Key implementation insights from the Collaborating District Initiative*. Chicago, IL: Author.

**Daunic et al., 2013** – *Daunic, A., Corbett, N., Smith, S., Barnes, T., Santiago-Poventud, L., Chalfant, P., Pitts, D. Gleaton, J.* (2013). Integrating social-emotional learning with literacy instruction: an intervention for children at risk for emotional and behavioural disorders. *Behavioural Disorders*, Vol. 39, no. 1: 43-49. DOI: <https://doi.org/10.1177/019874291303900106>

**Davidson, 2011** – *Davidson, H.* (2011). Kidzmix: Helping kids become social heroes ages 5-12 years. Kidzmix Publishing (online).

**DePaoli, 2017** – *DePaoli, J.L., Atwell, M., Bridgeland, J.* (2017). *Ready to lead: A national principal survey on how social and emotional learning can prepare children and transform schools*. Washington, DC: Civic Enterprises and Hart Research Associates for CASEL.

**Denham et al., 2012** – *Denham, S.A., Bassett, H.H., Sirotkin, Y. S., Zinsser, K.* (2012). Head Start preschoolers' emotional positivity and emotion regulation predict their classroom adjustment, social behavior, and early school success. Invited poster, 12th Head Start Research Conference, Washington, DC.

**Dweck et al., 2014** – *Dweck, C.S., Walton, G.M., Cohen, G.L.* (2014). Academic Tenacity: Mindsets and Skills that Promote Long-Term Learning. Bill & Melinda Gates Foundation.

**Duckworth, Seligman, 2005** – *Duckworth, A.L., Seligman, M.E.* (2005). Self-discipline outdoes IQ in predicting academic performance of adolescents. *Psychological science*, 16(12): 939-944. DOI: <https://doi.org/10.1111/j.1467-9280.2005.01641.x>

**Durlak et al., 2011** – *Durlak, J.A., Weissberg, R.P., Dymnicki, A., Taylor, R. D., Schellinger, K.B.* (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development*, 82: 405-432. DOI: <https://doi.org/10.1111/j.1467-8624.2010.01564.x>

**Durlak, 2015** – *Durlak, J.A.* (Ed.). (2015). *Handbook of social and emotional learning: Research and practice*. Guilford Publications.

**Dusenbury et al., 2015** – *Dusenbury, L.A., Zadrazil Newman, J., Weissberg, R.P., Goren, P., Domitrovich, C.E., Mart, A.K.* (2015). The case for preschool through high school state learning standards for SEL. In J.A. Durlak, C.E. Domitrovich, R.P. Weissberg, & T.P. Gullotta (Eds.). *Handbook for social and emotional learning: Research and practice (pp. 532-548)*. New York, NY: Guilford Press.

**Elliot, Dweck, 2005** – *Elliot, A.J., Dweck, C.S.* (2005). Competence and motivation. *Handbook of competence and motivation*, 3-12.

**Forgas, 2000** – *Forgas, J.P.* (ed.) (2000). *Feeling and thinking: Affective influences on social cognition*. New York: Cambridge University Press.

**Foster et al., 2005** – *Foster, S., Rollefson, M., Doksum, T., Noonan, D., Robinson, G., Teich, J.* (2005). *School mental health services in the United States*. Rockville, MD: Center for Mental Health Services, Substance Abuse and Mental Health Services Administration.

**Garner, 2010** – *Garner, P.W.* (2010). Emotional competence and its influences on teaching and learning. *Educational Psychology Review*, Vol. 22: 297-321. DOI: <https://doi.org/10.1007/s10648-010-9129-4>

**Hamre, Pianta, 2001** – *Hamre, B.K., Pianta, R.C.* (2001). Early teacher-child relationships and the trajectory of children's school outcomes through eighth grade. *Child Development*, Vol. 72: 625-638. DOI: <https://doi.org/10.1111/1467-8624.00301>

**Hattie, 2009** – *Hattie, J.* (2009). *Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement*. New York: Routledge.

**Hoa, 2008** – *Hoa, D.T.D.* (2008). Giáo trình Tâm lý học phát triển [Development Psychology]. Hanoi: University of Education Press.

Humphrey et al., 2007 – Humphrey, N., Curran, A., Morris, E., Farrell, P., Woods, K. (2007). Emotional Intelligence and education: A critical review. *Educational Psychology: An International Journal of Experimental Educational Psychology*, Vol. 27, no. 2: 235-254. DOI: <https://doi.org/10.1080/01443410601066735>

Humphrey, 2013 – Humphrey, N. (2013). *Social and emotional learning: A critical appraisal*. Thousand Oaks, CA: SAGE.

Kendziora, Yoder, 2016 – Kendziora, K., Yoder, N. (2016). When Districts Support and Integrate Social and Emotional Learning (SEL): Findings from an Ongoing Evaluation of Districtwide Implementation of SEL. Education Policy Center at American Institutes for Research.

Kumari, 2019 – Kumari, A., Singh, R., Mehra, M., Mishra, A. K. (2019). Does Being A Boy or Girl Matters for Personality Development? Study of Personality of Adolescents from Different Social Classes across Gender. *Int. J. Curr. Microbiol. App. Sci*, 8(7): 122-131.

Jacob, Michael, 1971 – Jacob, J., Michael, S.M. (1971) Three-Point Likert Scales Are Good Enough. *Journal of Marketing Research*, Vol VIII: 495-500. DOI: <https://doi.org/10.1177/002224377100800414>

Jennings, Greenberg, 2009 – Jennings, P.A., Greenberg, M.T. (2009). The prosocial classroom: Teacher social and emotional competence in relation to student and classroom outcomes. *Review of educational research*, 79(1): 491-525. DOI: <https://doi.org/10.3102/0034654308325693>

Jones et al., 2015 – Jones, D.E., Greenberg, M., Crowley, M. (2015). Early social-emotional functioning and public health: The relationship between kindergarten social competence and future wellness. *American journal of public health*, 105(11): 2283-2290. DOI: <https://doi.org/10.2105/AJPH.2015.302630>

Loan, 2013 – Loan, N.H. (2013). Bạo lực học đường – S.O.S [School Violence – S.O.S]. Accessed in Community Paper (Sep 18<sup>th</sup>, 2013). [Electronic resource]. URL: <http://www.nhandan.com.vn/hangthang/khoahoc-giaoduc/item/21233602-bao-luc-hoc-duong-s-o-s.html>

Marzano, 2003 – Marzano, R.J. (2003). What works in schools: Translating research into action. ASCD.

Ngo, 2012 – Ngo, P.T. (2012). Giáo trình Các lý thuyết phát triển tâm lý con người [Textbook The theory of developing human psychology]. Hanoi: Hanoi University of Education.

Peterson et al., 2006 – Peterson, L.D., Young, K.R., Salzberg, C.L., West, R.P., Hill, M. (2006). Using self-management procedures to improve classroom social skills in multiple general education settings. *Education & Treatment of Children*, 29(1): 1.

Roffey, 2011 – Roffey, S. (2011). Enhancing connectedness in Australian children and young people. *Asian Journal of Counselling*, Vol. 18, no.1 & 2: 15-39.

Son, 2018 – Son, H.V. (2018). SEL model and oriented deployment in life skill education for students in primary school in Viet Nam. “Experimental application of SEL paradigm into study on life skill of primary students” Conference. Funded by the National Science and Technology Development Fund (NAFOSTED) in the project code 501.01-2016.04.

Son, 2011 – Son, H.V. (2011). Nhập môn Tâm lý học phát triển [An introduction to Developmental Psychology]. Vietnamese Education Press.

Theobald et al., 2015 – Theobald, M., Danby, S., Thompson, C. Thorpe, K. (2015). Friendships. In S, Garvis & D, Pendergast (eds.). Health and wellbeing in childhood. Melbourne, Australia: Cambridge University Press.

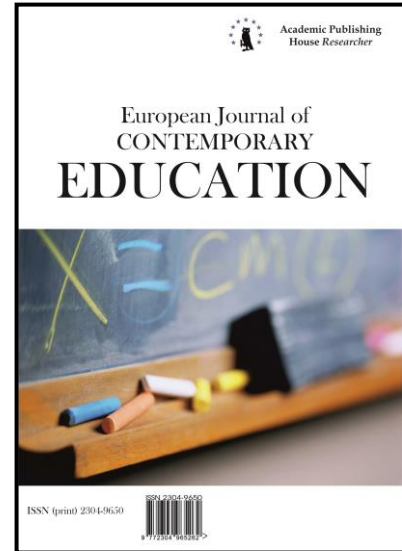
Tien et al., 2016 – Tien, L.M., Tu, N.T. et al. (2016). Tâm lý học lứa tuổi và Tâm lý học sư phạm [Age psychology and pedagogy psychology]. Ho Chi Minh city: Ho Chi Minh city University of Education Press.

Weissberg, Cascarino, 2013 – Weissberg, R.P., Cascarino, J. (2013). Academic learning + social-emotional learning = national priority. *Phi Delta Kappan*, 95(2), 8-13. DOI: <https://doi.org/10.1177/003172171309500203>



Copyright © 2019 by Academic Publishing House Researcher s.r.o.  
All rights reserved.  
Published in the Slovak Republic  
European Journal of Contemporary Education  
E-ISSN 2305-6746  
2019, 8(4): 801-809  
DOI: 10.13187/ejced.2019.4.801  
[www.ejournal1.com](http://www.ejournal1.com)

**WARNING!** Article copyright. Copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of the violation of the author(s) rights will be pursued on the basis of international legislation. Using the hyperlinks to the article is not considered a violation of copyright.



## Analysis of Management of Higher Education Institutions

Maxim S. Kozyrev <sup>a,\*</sup>, Tatiana V. Bogacheva <sup>b</sup>, Evgeniya E. Jukova <sup>a</sup>, Polina V. Palekhova <sup>c</sup>

<sup>a</sup> Russian State Social University, Moscow, Russian Federation

<sup>b</sup> Russian State University of Tourism and Service, Moscow, Russian Federation

<sup>c</sup> Russian Presidential Academy of National Economy and Public Administration, Moscow, Russian Federation

### Abstract

The article studies special aspects of management of higher education institutions through the use of correlation analysis. There were twelve universities of Moscow and Moscow region that were included into selection. According to results of the conducted research the authors of article have come to the following conclusions. Universities' administrations are prone to compensate the defects of management, decrease of students' number and, as consequence, revenue contractions by laying off the teaching personnel. In this vein, teachers are the most voidable group in a system of higher education management. Meantime, the number of students does not influence the real financial revenue of higher education teaching personnel, which may increase only with the growth of teaching load. The same situation is with publication activity of academic staff. It seems, that universities' administration either does not use large-scale financial incentives to increase the publication activity of academic teaching personnel in journals from the information-analytical systems of scientific citation Web of Science and Scopus, or these incentives are not comparable with the labor and other costs of publishing scientific articles in these bases, which does not lead to the expected actions on the part of the faculty.

In both cases, it is not fair to put the whole responsibility on managerial incompetence of higher institutions. The reasons, which lead to this situation, might be weak managerial independence, relatively lean funds allocated for research, which are most likely concentrated in leading universities.

**Keywords:** management of higher education institutions, correlation analysis, indicators of higher education institution's activity.

---

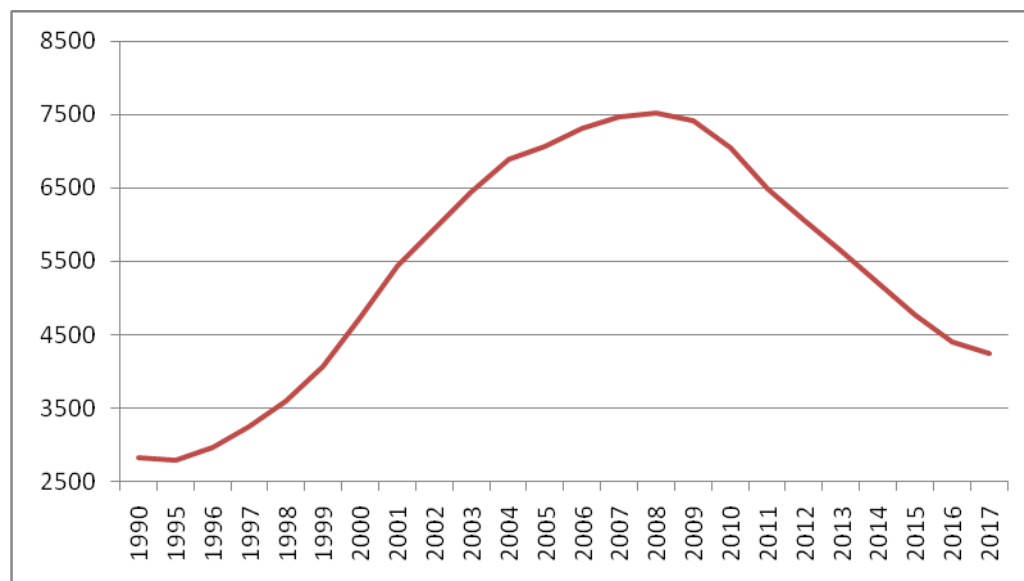
\* Corresponding author

E-mail addresses: [kozyrevms@rgsu.net](mailto:kozyrevms@rgsu.net) (M.S. Kozyrev), [tvbogacheva@mail.ru](mailto:tvbogacheva@mail.ru) (T.V. Bogacheva), [nahratovae@rgsu.net](mailto:nahratovae@rgsu.net) (E.E. Jukova), [ppalehova@gmail.com](mailto:ppalehova@gmail.com) (P.V. Palekhova)



## 1. Introduction

In recent decades higher education sphere has been subjected to wide changes. The dynamics of students' number at the universities is a prove to it (Figure 1).



**Fig. 1.** The number of students at the universities in Russia (Rossiiskii statisticheskii ezhegodnik, 2019)

It is hardly probable, that such vibration amplitude (almost three times the original value) concerns only quantity changes. In this case quality transformations are almost ineluctable. The principal factor certainly will be population aged 20–24 years. However, the influence of state politics, the quality of higher education teaching personnel and administration, the image of higher education, the demand for university graduates in labor market, etc. remains influential factors. In this vein, it will be useful to find out, how university administration reacts on such challenges, what is the main line of their behavior in context of sweepingly changing situation.

It is not necessary to apply such complicated and time-consuming methods as statistical poll or observation to give a response on these questions. The analysis of statistical data will be enough. That's why the principal method of this study is correlation analysis, which gives opportunity to find difficult complex of their causal relationships. It is necessary to admit that correlation analysis allows to find not only reasons of various facts, but also connection with other social phenomena.

In Russian scientific field the topic of management practices in higher education institutions was studied by A.P. Prohorov, V.N. Blinov (Prohorov, Blinov, 2019), A.K. Klyuev, O.B. Tomilin, I.M. Fadeeva, O.O. Tomilin (Klyuev et al., 2018), P.A. Ambramova, G.E. Zborovskij (Ambarova, Zborovskij, 2017), M.A. Abramova, V.V. Krasheninnikov (Abramova, Krasheninnikov, 2016), S.N. Pryadko, A.E. Vinnik (Pryadko, Vinnik, 2018), A.A. Kirillovyh (Kirillovyh, 2018), M.V. Kurbatova, I.V. Donova (Kurbatova, Donova, 2019).

There are also interesting foreign studies, devoted to this topic, which are presented in publications A.K. Stage, K. Aagaard (Stage, Aagaard, 2019), J.D. Aberbach, T. Christensen (Aberbach, Christensen, 2018), I. Bleiklie, M. Kogan (Bleiklie, Kogan, 2007), D. Deering, C. Sá (Deering, Sá, 2018), C. Bell, N. Dodd, T. Mjoli (Bell et al., 2018), A. Taylor (Taylor, 2017), G. Krucken, A. Blumel, K. Kloke (Krucken et al., 2013).

## 2. Methodology

The essence of the correlation analysis is to identify the dependence between the results of investigation of indicators of various factors, as well as investigation of the degree of their mutual influence. The statistical dependence between several variables is characterized by a correlation coefficient. Its scale estimates the degree of dependence (Orlov, 2004). If the last is lineal then the dependence can be calculated by the Pearson correlation coefficient using the formula below:



$$r_{xy} = \frac{\sum xy - \frac{\sum x \sum y}{n}}{\sqrt{\left(\sum x^2 - \frac{(\sum x)^2}{n}\right) \left(\sum y^2 - \frac{(\sum y)^2}{n}\right)}}$$

The mentioned coefficient changes the scale from  $-1$  to  $+1$ . It is supposed that if the coefficient is higher than  $|0,7|$ , then the dependence is strong and tight, if it is not higher than  $|0,3|$ , then the dependence is weak; if it is from  $|0,3|$  to  $|0,7|$ , then the dependence is middle. If the coefficient equals  $\pm 1$ , then the dependence is functional, if it equals  $0$ , then there is no any lineal dependence between indexes.

While using correlation analysis it is necessary to consider a set of its limitations.

First limitation. If factors' variables are inextricably linked, it does not lead to cause-and-effect relations between them. There is another possible factor that may influence the others and might be a reason of changes of their variables.

An intellectual experiment might serve as an example. If 1000 random people on the street are measured with an intelligence index (IQ) and shoe size, then a close correlation may be found between them. However, it does not prove the dependence between person's intellectual development and their height. There are such people's features as gender and age are the third factor here.

Second limitation. While calculating an appearance of the accidental correlation is possible. The illustration of this limitation is English site Spurious Correlations, authors of which demonstrate rather funny connections. In particular, the dependence between the US expenses on space and technology and the number of suicides by hanging, strangulation ( $r = 0.99$ ); cheese consumption per capita and the number of people who died entangled in their bed sheets ( $r = 0.94$ ); chicken consumption per capita and total import of crude oil in the USA ( $r = 0.89$ ) ([Blog «Spurious Correlations»](#)).

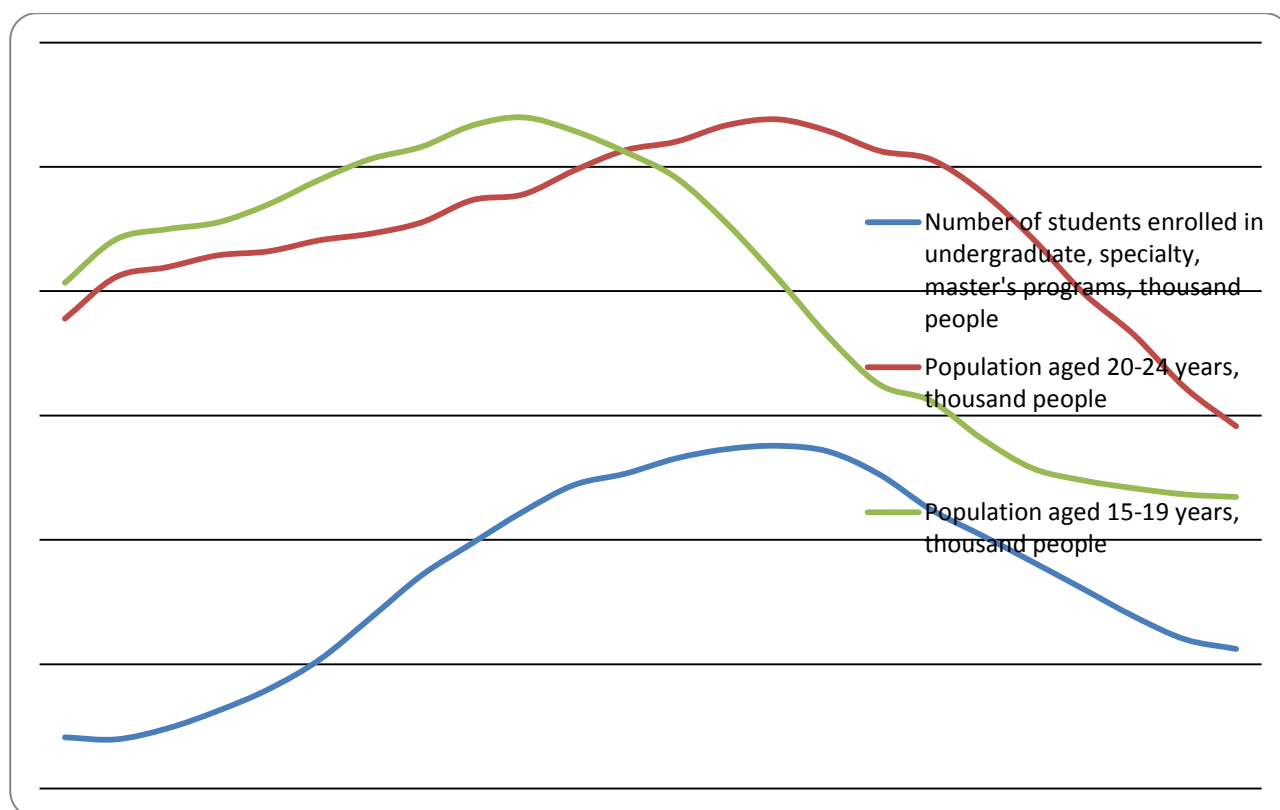
Third limitation. In studies with correlation analysis, it is desirable to do 12–15 observations for each indicator. This restriction is not a serious problem with a large base of data ([Gusev et al., 1998](#); [Bajnova et al., 2016](#); [Kozyrev, Maslikov, 2016](#)).

Fourth limitation. It is impossible to detect a connection between phenomena by means of correlation analysis if the effect is delayed, for instance, by several years. As an example, we may cite the dependence of the population at the ages of 15–19 years and 20–24 years with the number of university students ([Figure 2](#)).

In the first case correlation coefficient is  $0,08$ , and in the second case is  $-0,77$ . According to the figure in case of using only correlation analysis for this purpose “delay” of 5 years makes it impossible to establish a causal relationship between two phenomena.

An algorithm of the correlation analysis, used in this case, is the following.

1. Selection and grouping of indicators through statistical data.
2. Calculation of correlation coefficients within a group of indicators (formation of a correlation matrix).
3. Interpretation of the obtained exponents of the correlation coefficients.



**Fig. 2.** The number of students and population ([Rossiiskii statisticheskiy ezhegodnik, 2019](#))

With the current development of technology, the calculation of several tens or hundreds of correlation coefficients does not demand any hard work. In particular, in this research the capabilities of a Microsoft Excel spreadsheet were used.

### 3. Results and discussion

As indicators, characterized university activity, the following factors were chosen:

- The total number of students (all modes of study);
- The total number of employees of the educational organization (without external part-time workers and those who work under civil law contracts);
- The total number of faculty members (faculty) (without external part-time workers and those who work under civil law contracts);
- The total number of scientists (without external part-time workers and those who work under civil law contracts);
- The average salary of the teaching staff (without external part-time workers and those who work under civil law contracts);
- The financial revenues of university from all sources;
- The financial revenues from the federal budget;
- The number of organization's publications indexed in the analytical system of scientific citation Web of Science (per 100 scientific and teaching personnel);
- The number of organization publications indexed in the analytical system of scientific citation Scopus (per 100 scientific and teaching personnel);
- The ratio of the total number of university employees to the number of faculty.

The object of study are typical federal state universities of Moscow and Moscow region. Universities from the first places of various ratings, with the status of a national research university or federal university and the participants of the 5-100 project were excluded from the sample.

Overall, according to author, the universities which are the closest to the “image” of typical university are the following:

1. Federal State Budgetary Educational Institution of Higher Education "Russian State Social University" (RSSU);
2. Federal State Budgetary Educational Institution of Higher Education "Russian State University for the Humanities" (RSUH);
3. Federal State Budgetary Educational Institution of Higher Education "State University of Management" (SUM);
4. Federal State Budgetary Educational Institution of Higher Education "Moscow State University of Technology and Management named after K.G. Razumovsky (First Cossack University)" (MSUTM);
5. Federal State Budgetary Educational Institution of Higher Education "Russian State University of Tourism and Service" (RSUTS);
6. Federal State Budgetary Educational Institution of Higher Education "Russian Technological University" (MIREA);
7. Federal State Budgetary Educational Institution of Higher Education "Russian State University named after A.N. Kosygin (Technology. Design. Art)" (RSU named after A.N. Kosygin);
8. Federal State Budgetary Educational Institution of Higher Education "Russian State Agrarian University - Moscow Agricultural Academy named after K.A. Timiryazev" (Moscow Agricultural Academy named after K.A. Timiryazev);
9. Federal State Budgetary Educational Institution of Higher Education "Russian Chemical-Technological University named after D.I. Mendeleev" (RSCTU named after D.I. Mendeleev);
10. Federal State Budgetary Educational Institution of Higher Education "Moscow Automobile and Road State Technical University (MADI)";
11. Federal State Budgetary Educational Institution of Higher Education "Moscow State Technical University of Civil Aviation" (MSTU CA);
12. Federal State Budgetary Educational Institution of Higher Education "Moscow State Institute of Culture" (MSUC).

According to the results of monitoring the efficiency of higher education institutions' activity during 2018 with the usage of informational and analytical materials on the website of the Main Information and Computing Center of the Ministry of Science and Higher Education of the Russian Federation ([Informatsionno-analiticheskie materialy..., 2018](#)) (Table 1), the calculations of the correlation coefficients are the following (Table 2).

**Table 1.** The indicators of State Universities' activity (part 1)

		RSSU	RSUH	SUM	MSUTM	RSUTS
1	The total number of students (all modes of study), people	17 056	12 970	9 603	9 924	3 940
2	The total number of employees of the educational organization (without external part-time workers and those who work under civil law contracts)	1 135	1 792	1 096	574	411
3	The total number of faculty members (faculty) (without external part-time workers and those who work under civil law contracts)	322	844	573	197	133
4	The total number of scientists (without external part-time workers and those who work under civil law contracts)	12	55	1	5	5
5	The average salary of the teaching staff (without external part-time workers and those who work under civil law contracts), thousand rubles	109,85	102,44	115,39	119,88	89,39

6	The financial revenues of university from all sources, thousand rubles	2164052	2226393	1578870	1218340	591133
7	The financial revenues from the federal budget, thousand rubles	948288	859610	544394	566772	278187
8	The financial revenues of university from extra-budgetary sources, thousand rubles	1210837	1366792	1031501	642381	310307
9	The number of organization's publications indexed in the analytical system of scientific citation Web of Science per 100 scientific and teaching personnel	13,74	54,56	4,79	3,65	5,72
10	The number of organization publications indexed in the analytical system of scientific citation Scopus per 100 scientific and teaching personnel	36,32	14,22	5	10,94	13,99
11	The ratio of the total number of university employees to the number of faculty	52,97	15,37	16,76	50,38	29,62

**Table 1.** The indicators of State Universities' activity (part 2)

RTU (MIREA)	RSU named after A.N. Kosygin	Moscow Agricultural Academy named after K.A. Timiryazev	RSCTU named after D.I. Mendeleev	MADI	MSTU CA	MSUC
24 515	8 349	14 157	5 505	9 562	3 694	4 960
2 799	1 099	2 908	1 551	1 544	608	882
1 142	503	1 152	499	673	220	440
76	0	39	33	8	6	10
123,78	116,44	95,98	105,05	114,74	144,5	48,51
5290911	1525060	3731226	1989004	2112289	953133	948227
3194123	992967	2634246	1439045	1227028	706462	647260
2096820	451587	1085541	537770	885185	246702	300930
24,27	23,76	22,87	60,59	3,54	3,23	4,6
32,83	29,69	8,7	135,19	9,84	5,54	4,6
21,47	16,60	12,29	11,03	14,21	16,79	52,97

**Table 2.** Correlation matrix

	Line 1	Line 2	Line 3	Line 4	Line 5	Line 6	Line 7	Line 8	Line 9	Line 10	Line 11
Line 1	1,00										
Line 2	0,73	1,00									
Line 3	0,68	0,97	1,00								
Line 4	0,70	0,82	0,78	1,00							
Line 5	0,23	0,03	-0,01	0,03	1,00						
Line 6	0,88	0,93	0,88	0,84	0,19	1,00					
Line 7	0,73	0,93	0,85	0,78	0,15	0,96	1,00				
Line 8	0,95	0,76	0,75	0,78	0,23	0,87	0,69	1,00			
Line 9	0,17	0,46	0,40	0,62	-0,02	0,33	0,31	0,28	1,00		
Line 10	-0,04	0,15	-0,01	0,25	0,04	0,13	0,20	-0,02	0,70	1,00	
Line 11	0,26	-0,36	-0,47	-0,23	0,20	-0,13	-0,25	0,09	-0,32	-0,10	1,00

There are some curious details according the results of conducted analysis. It is hardly a surprise, that the total number of employees ( $r_{xy}=0,73$ ), the number faculty members ( $r_{xy}=0,68$ ) and the number of scientists ( $r_{xy}=0,7$ ) depends on the total number of students. However, dependence level is less than expected, if the number of teaching positions is calculated on base of the volume of the academic load, i.e. the number of students. It is possible to suppose that university’s administration sometimes prefers to replace vacancies with internal part-time workers rather than to employ new workers. Consequently, with a decrease in the number of students, first of all, part-time positions are reduced, and the teachers themselves do not quit. In some case, it is aligned with the reality. However, the average salary of faculty is weakly related to the number of students ( $r_{xy}=0,23$ ). Moreover, the average salary also weakly correlates with university financial revenues, regardless of their source ( $r_{xy}=0,19$ ;  $r_{xy}=0,15$ ;  $r_{xy}=0,23$ ). This leads to a conclusion that under the decrease of number of students universities’ administration tries to reduce the number of faculty instead of their salary. It may be explained by the action of the “May” presidential decrees, where special requirements for the size of salaries to employees of the “public sector” were set. At the same time, it is clear that the higher education personnel becomes a hostage to the socio-economic and political situation, as well as the level of quality of university management. A teacher pays their working place for all crises and wickedness of university management.

Another curious fact is that publication activity of the faculty is not related to their salary. The correlation coefficients between the average salary of teachers, the number of publications, indexed in the analytical system of scientific citation Web of Science ( $r_{xy}=-0,02$ ) and the number of publications, indexed in the analytical system of scientific citation Scopus ( $r_{xy}=0,04$ ) are rather low. Meantime there is an average link between the number of publications, the number of the faculty ( $r_{xy}=0,4$ ) and the total number of faculty ( $r_{xy}=0,62$ ). It draws a conclusion, that university administration does not widely use financial stimulation to increase publication activity, or the proportion of financial stimulation in the expenses to publications in journals, indexed in Web of Science and Scopus, does not highly motivate teaching personnel. There is another appropriate hypothesis that some members of the faculty unite into small groups to concentrate their efforts on increasing publication activity in journals from Scopus, but their quantity is not so big to influence statistical data. Indeed, scientists, who are responsible for publishing the results of their studies in mentioned databases, play the principal role in this case.

The financial revenues of organization and the number of publication in journals, indexed in Web of Science ( $r_{xy}=0,33$ ;  $r_{xy}=0,31$ ;  $r_{xy}=0,28$ ) are on the border of medium dependence of correlation. It leads to hypothesis, that the financial revenues from scientific research are not the principal and substantial resource of educational institution’s revenues.

The correlation of the total number of students and the number of the faculty is poorly related to average salary of teaching personnel ( $r_{xy}=0,2$ ). This confirms the earlier assumption that the university administration prefers to replace vacant positions by teachers on the basis of internal part-time. In this case there is no any increase in financial revenues, because teaching and other loads grow along with salaries.



#### 4. Conclusion

According to results of the conducted research there are the following conclusions about the management at the higher education institutions:

1) Higher education teaching personnel is the most vulnerable group at the universities. The faculty pays their working place for crises, which lead to decrease of the number of students, and for managerial incompetence of universities' administration. The salary of teachers increases only with an additional load. There is an approved hypothesis, that weak managerial independence of universities, which do not have legal opportunity to increase financial revenues, is responsible for the immediate situation (Kozyrev, 2016). The magnitude of the flow of students, which depends not only on demographic, but also socio-economic factors (prestige of higher education, material well-being of the population, demand for specialists with higher education in the labor market, etc.) is weakly influenced by the administration of universities. In addition, even aggressive marketing policy is not able to change the overall situation. In the most cases it is a zero-sum game: increase of the number of students at one university leads to decrease of the number of students in others.

It is necessary to admit that the financing of scientific activities on the basis of state grants hardly seriously affects the income of most of higher education teaching personnel.

2) University administration does not widely use financial stimulation to increase publication activity, or the proportion of financial stimulation in the expenses to publications in journals, indexed in Web of Science and Scopus, is so incomparable with labor and other costs of publishing scientific articles in these databases, that it does not lead to expected actions from the higher education teaching personnel. As in the first case, it is not fair to put the whole responsibility on the administration of higher institutions. Another factors of the current state of affairs are the insufficiently wide presence of Russian scientific journals in international scientific citation databases (for example, out of 24513 journals indexed in Scopus there are 447 Russian journals, 1691 journals from Germany, 5693 from the UK, 6122 from the United Kingdom, 566 from Spain) and narrowed possibilities for financing scientific activity.

Besides, it is should be admitted that the scientific activity of higher education institutions has relatively weak effect on their financial revenues. Such situation is possibly unfair in comparison with the leading Russian universities excluded from the selection. However, authors suppose, that it is common for the most state higher education universities.

#### References

Aagaard, 2017 – Aagaard, K. (2017). The Evolution of a National Research Funding System: Transformative Change Through Layering and Displacement. *Minerva*, 55: 279-297. DOI: <https://doi.org/10.1007/s11024-017-9317-1>

Aberbach, Christensen, 2018 – Aberbach, J.D., Christensen, T. (2018). Academic Autonomy and Freedom under Pressure: Severely Limited, or Alive and Kicking? *Public Organization Review*, 18, 4: 487-506.

Abramova, Krasheninnikov, 2016 – Abramova, M.A., Krasheninnikov, V.V. (2016). Reforma vysshego obrazovaniya: ot kolichestva k kachestvu [Higher education reform: from quantity to quality]. *Filosofiya obrazovaniya*, 2(65): 44-52. [in Russian]

Ambarova, Zborovskij, 2017 – Ambarova, P.A., Zborovskij, G.E. (2017). Upravlenie universitetami v otsenkakh obrazovatel'nykh obshchnostei [Management of universities in the assessments of educational groups]. *Universitetskoe upravlenie: praktika i analiz*, 21, 3(109): 100-111. [in Russian]

Bajnova et al., 2016 – Bajnova, M.S., Kozyrev, M.S., Petrov, A.V. (2016). Korrelyatsionnyi analiz gosudarstvennogo vozdeistviya na otdel'nye aspekty rossiiskoi ekonomiki [Correlation analysis of state influence on certain aspects of the Russian economy]. *Aktual'ni problemi ekonomiki*, 182, 8: 334-343. [in Russian]

Bell et al., 2018 – Bell, C., Dodd, N., Mjoli, T. (2018). The effect of participative and directive leadership on team effectiveness among administrative employees in a South African tertiary institution. *Journal of Social Sciences*, 55, 1-3: 81-91. DOI: 10.30901/24566756.2018/55.1-3.1716

Bleiklie, Kogan, 2007 – Bleiklie, I., Kogan, M. (2007). Organization and governance of universities. *Higher Education Policy*, 20, 4: 477-493. DOI: <https://doi.org/10.1057/palgrave.hep.8300167>

**Blog «Spurious Correlations»** – Blog «Spurious Correlations». [Electronic resource]. URL: <http://www.tylervigen.com/spurious-correlations> (date of access: 27.06.19).

**Deering, Sá, 2018** – Deering, D., Sá, C. (2018). Do corporate management tools inevitably corrupt the soul of the university? Evidence from the implementation of responsibility center budgeting. *Tertiary Education and Management*. 24, 2: 115-127. DOI: <https://doi.org/10.1080/13583883.2017.1398779>

**Ekonometrika, 2012** – Ekonometrika: Uchebnik [Econometrics: Textbook] (2012). Pod red. prof. V. B. Utkina. M.: Izdatel'sko-torgovaya korporatsiya "Dashkov i K°". [in Russian]

**Gusev et al., 1998** – Gusev, A.N., Izmailov, Ch.A., Mikhalevskaya, M.B. (1998). Izmerenie v psikhologii: obshchii psikhologicheskii praktikum [Measurement in psychology: a general psychological workshop]. 2-e izd. M.: Smysl. [in Russian]

**Informatsionno-analiticheskie materialy..., 2018** – Informatsionno-analiticheskie materialy po rezul'tatm profedeniya monitoringa effektivnosti deyatel'nosti obrazovatel'nykh organizatsii vysshego obrazovaniya [Information and analytical materials on the results of monitoring the effectiveness of educational institutions of higher education]. (2018). [Electronic resource]. URL: <http://indicators.miccedu.ru/monitoring/?m=vpo> (date of access: 08.10.19). [in Russian]

**Kirillovyh, 2018** – Kirillovyh, A.A. (2018). Upravlenie vuzom v usloviyakh mezhdunarodnogo rynka obrazovatel'nykh uslug: publichno-pravovoi aspekt [University management in the international market of educational services: public law aspect]. *Pravo i obrazovanie*, 3: 86-90. [in Russian]

**Klyuev et al., 2018** – Klyuev, A.K., Tomilin, O.B., Fadeeva, I.M., Tomilin, O.O. (2018). Upravlenie universitetom: itogi transformatsii [University management: transformation scenarios]. *Universitetskoe upravlenie: praktika i analiz*, 22, 1(113): 93-104. [in Russian]

**Kozyrev, 2016** – Kozyrev, M.S. (2016). Gosudarstvennye uchrezhdeniya kak sub"ekt publichnogo upravleniya [State institutions as a subject of public administration]. *Gosudarstvennyi sovetnik*, 2(14): 37-41. [in Russian]

**Kozyrev, Maslikov, 2016** – Kozyrev, M.S., Maslikov, V.A. (2016). Application of correlative analysis for investigation of some types of crimes conducted in Moscow. *Criminological Journal of Baykal State University of Economics and Law*. 10(1): 28-39.

**Krucken et al., 2013** – Krucken, G., Blumel, A., Kloke, K. (2013). The Managerial Turn in Higher Education? On the Interplay of Organizational and Occupational Change in German Academia. *Minerva*, 51, 4: 417-442.

**Kurbatova, Donova, 2019** – Kurbatova, M.V., Donova, I.V. (2019). Effektivnyi kontrakt v vysshem obrazovanii: rezul'taty realizatsii proekta [Effective contract in higher education: project implementation results]. *Journal of Institutional Studies*, 11, 2: 122-145. [in Russian]

**Orlov, 2004** – Orlov, A.I. (2004). Prikladnaya statistika [Applied statistics]. Uchebnik. M.: Izdatel'stvo "Ekzamen". [in Russian]

**Prohorov, Blinov, 2019** – Prohorov, A.P., Blinov, V.N. (2019). Defitsity i paradoksy rynka vysshego obrazovaniya v Rossii i ego organizatsii v rossiiskikh vuzakh: chto mozhno izmenit'? [Deficiencies and Paradoxes of the Higher Education Market in Russia and its Organization in Russian Universities: What can be changed?]. *Universitetskoe upravlenie: praktika i analiz*, 23, 1-2: 165-176. [in Russian]

**Pryadko, Vinnik, 2018** – Pryadko, S.N., Vinnik, A.E. (2018). Povyshenie effektivnosti upravleniya konkurentosposobnost'yu vuzov [Improving the competitiveness of universities]. *Vestnik belgorodskogo gosudarstvennogo tekhnologicheskogo universiteta im. v.g. Shukhova*, 1: 117-120. [in Russian]

**Rossiiskii statisticheskii ezhegodnik, 2019** – Rossiiskii statisticheskii ezhegodnik [Russian statistical yearbook] (2019). [Electronic resource]. URL: <https://www.gks.ru/folder/210/document/12994> (date of access: 08.10.19). [in Russian]

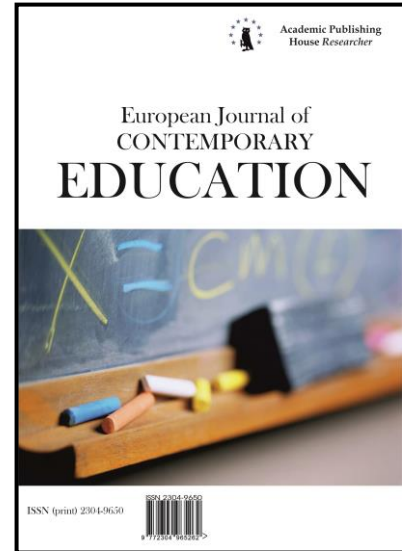
**Stage, Aagaard, 2019** – Stage, A.K., Aagaard, K. (2019). Danish universities under transformation: Developments in staff categories as indicator of organizational change. *Higher Education*, 78, 4: 629-652. DOI: 10.1007/s10734-019-00362-y

**Taylor, 2017** – Taylor, A. (2017). Perspectives on the university as a business: The corporate management structure, neoliberalism and higher education. *Journal for Critical Education Policy Studies*, 15, 1: 108-135.



Copyright © 2019 by Academic Publishing  
House Researcher s.r.o.  
All rights reserved.  
Published in the Slovak Republic  
European Journal of Contemporary Education  
E-ISSN 2305-6746  
2019, 8(4): 810-818  
DOI: 10.13187/ejced.2019.4.810  
[www.ejournal1.com](http://www.ejournal1.com)

**WARNING!** Article copyright. Copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of the violation of the author(s) rights will be pursued on the basis of international legislation. Using the hyperlinks to the article is not considered a violation of copyright.



## Education and Financial Inclusion. An Empirical Study in Students of Higher Education

Némesis Larracilla-Salazar <sup>a,\*</sup>, Ileana Yadira Peña-Osorio <sup>a</sup>, Violetta S. Molchanova <sup>b,c</sup>

<sup>a</sup> UCC Business School at Universidad Cristóbal Colón, Veracruz México

<sup>b</sup> International Network Center for Fundamental and Applied Research, Washington, USA

<sup>c</sup> Volgograd State University, Volgograd, Russian Federation

### Abstract

Financial products and services are increasingly present in our daily lives, so it is very important to know the advantages that can be obtained by using them. In this way, the present study seeks to determine the existence of an underlying structure that explains the knowledge towards the topics of Income, Money Management, Savings and Investment, Expenditure and Credit in students of higher education. For this, the Financial Education Test was applied to 126 participants. The results obtained through the exploratory factor analysis provide evidence of the existence of a structure that allows us to understand the phenomenon of financial education in the perception, knowledge, use and application of financial topics in Mexican students. Two factors represent 68.18 % of the phenomenon under study, the first on knowledge, use and application towards savings and investment (37.42 % of the total variance explained) and the second on knowledge, use and application about money management (30.75 % of the total variance explained).

**Keywords:** financial inclusion, financial education, savings, investment, income.

### 1. Introduction

The relevance that has been given to financial education in recent decades has been driven by different social, economic and demographic factors such as increasing indebtedness on the part of individuals due to greater supply of credits, the increase in supply and complexity of financial elements, the increase in job instability, the increase in life expectancy and the reduction of public pension coverage.

---

\* Corresponding author

E-mail addresses: [larracilla.n@gmail.com](mailto:larracilla.n@gmail.com) (N. Larracilla-Salazar),  
[v.molchanova\\_1991@list.ru](mailto:v.molchanova_1991@list.ru) (V.S. Molchanova)

The poor financial education in the Mexican population is mainly reflected in the little use of financial products and services, in bad habits at the time of acquiring them, in the ignorance of their rights and obligations as well as in the lack of financial planning. The aforementioned negatively affects their well-being and quality of life, while causing financial institutions not to reach the required levels of competitiveness and stopping the country's economic development (García et al., 2014).

The lack of saving habits, little culture of forecasting, planning of income and expenses, generate great risks in the population when making economic decisions (Torres, Zaldívar, 2012).

Around the world, only 50 % have an account in a formal financial institution. In the case of Latin America and the Caribbean, the percentage is even lower and only 8 % of adults request loans in the formal market (Demirguc-Kunt, Klapper, 2012). Therefore, it is not surprising that individuals are forced to use other informal mechanisms to cope with their economic needs. (Robinson, 2001).

Individuals with low levels of financial education have high levels of indebtedness and acquire high-cost credit (Rivera, Bernal, 2018).

In this way, including topics that contribute to improving money management in people in the country's secondary education programs will allow them to optimize their budget and identify appropriate sources of financing to improve their family dynamics and improve their consumption and saving practices (Moreno-García et al., 2017).

Programs that offer interactive experiences and real life learning are highly effective, while face to face education fosters commitment and strengthens the sense of team and interaction between participants (Casper et al., 2013).

The rate of savings and wealth of individuals who attended schools where financial education programs were implemented is significantly higher than that of individuals who did not participate in these programs (Bernheim et al., 2001).

Financial education is based on adequate financial planning that allows people to prepare the action plan to meet their personal goals in the short, medium and long term. The plan will determine what to do, how to do it, how long it will take and the real viability you have to get what you want (Samper et al., 2010).

Thus, access to financial information is the first step towards more efficient financial inclusion.

## **2. Literature review**

The knowledge on financial issues has become more important given the accelerated development of financial markets as well as the current economic situation and the diversity of banking products that exist today, added to the multiple forms of financing, the largest number of banking institutions, the modification in pension schemes and technological advances coupled with the subject.

However, it has been found that people do not know the basic financial elements and concepts, which leads to making inappropriate decisions about savings, debt and investments (Raccanello, Herrera, 2014).

In the face of a market society that encourages people to consume and borrow, it is appropriate to develop a culture of forecasting and saving (International Center for Globalization and Development, 2009). Likewise, it is important to educate yourself financially to better understand the economy in general and the role it plays in it, so that the own resources are used efficiently (Ruíz, 2011).

For example, savings rates increase in relation to the financial education of respondent (Bernheim, Garret, 2003). There is also a positive correlation between financial knowledge and retirement planning (Lusardi, Mitchell, 2011; Van Rooij et al., 2011). In addition, retirement planning is directly related to financial knowledge and wealth levels (Lusardi, Mitchell, 2011). So individuals who have low financial education tend to acquire loans with higher interest rates and commissions (Stango, Zinman, 2009). On the contrary, individuals with greater financial education have lower debt levels (Hilgert et al., 2003).

In Mexico, promoting financial education is an urgent and necessary task because, in the first place: individuals lack financial knowledge, which produces consequences such as excessive indebtedness, lack of savings for the future, the unproductive use of remittances and the lack of



clarity about the benefits offered by investment in productive activities, the acquisition of assets or the education of children; second, the lack of information coupled with the limited penetration of the financial system that encourages the use of informal financial services; and because financial products have increased in recent years, this makes it difficult for people to make convenient decisions (Mexico Government, 2018).

Financial education differs substantially in terms of age, gender and profession of respondents (Van Rooij et al., 2007). It has also been found that for financial issues, women have less knowledge than men; likewise, young women and those belonging to the elderly indicate less financial literacy compared to middle-aged people. In addition, people with a higher level of education have greater financial knowledge than the rest (Lusardi, Mitchell, 2011).

García et al. (2014) also agree that the low levels of financial culture in Mexicans is related to the lack of financial education reflected in the little or no use of financial products and services, in bad habits in their acquisition, in the ignorance of their rights and obligations, as well as in the lack of financial planning.

Several authors have carried out work on measuring the level of financial education in individuals who have received formal education related to finance (Ruíz, 2011; Torres, Zaldívar, 2012; Raccanello, Herrera, 2014; Moreno-García et al., 2017; Rivera, Bernal, 2018).

The evidence gathered in the last decade indicates that Mexicans on average have a low level of financial education (BANAMEX – UNAM, 2008). For this reason, the aim of this study seeks to investigate the levels of financial knowledge that the teaching and administrative staff possesses in Technological Institute of Tierra Blanca, therefore, these are the dimensions of the variable that will be explained: Income (vi1), Money Management (vi2), Savings and Investment (vi3), Expenditure and Credit (vi4). The following section explains the procedure to carry out the study:

### 3. Methodology

#### Data collection instrument

To identify the level of knowledge about financial education in the participants, the data was collected from a survey that was designed with indicators used by the National Commission for the Protection and Defense of Users of the Financial Services and the National Bank of Mexico, as well as Banamex and the National Autonomous University of Mexico (UNAM), which was applied to 126 students of higher education in February 2019.

This survey was made up of 40 questions, divided into two sections: 6 questions corresponding to general information and 34 questions about information about Income, Expenditure and Credit, Savings and Investment, and Money Management.

#### Data Analyzing

With this information, the statistical procedure proposed by García-Santillán (2017) was carried out, in which, the Cronbach's alpha is calculated first, which should be as close to 1 (Hair et al., 2010).

Secondly, the normality of the data is checked, using the non-parametric Kolmogorov-Smirnov test, to subsequently analyze the data from the multivariate procedure of the Exploratory Factor Analysis, in which the calculation of the KMO and Bartlett's Test of Sphericity,  $X^2$  with n df is made from the following expression:

$$\chi^2 = - \left[ n - 1 - \frac{1}{6}(2p + 5) \ln |R| \right] = - \left[ n - \frac{2p + 11}{6} \right] \sum_{j=1}^p \log(\hat{\lambda}_j)$$

That met the following expression:

$$\left[ n - \frac{2p + 11}{6} \right] \log \left[ \frac{\frac{1}{p - m} \left( \text{traz} R^* - \left( \sum_{a=1}^m \lambda_a \right) \right)}{|R^*|} \right]^{p - m} \bigg/ \prod_{a=1}^m \lambda_a$$

Where: ln= natural logarithm; p= number of variables; n= sample size and R= is the correlation matrix.



Similarly, from the transformation of the determinant in the correlation matrix, the power of the correlations between the analyzed variables can be identified according to:

$$d_R = \left[ n - 1 - \frac{1}{6}(2p + 5) \ln |R| \right] = - \left[ n - \frac{2p + 11}{6} \right] \sum_{j=1}^p \log(\lambda_j)$$

Where: n= sample size; ln= natural logarithm, = values belonging to R  $\lambda_j (j = 1 \dots p)$  and R= correlation matrix.

In the same procedure, the KMO and MSA values are calculated, to support the sample adequacy procedure, and these are given by the following expressions:

$$KMO = \frac{\sum_{j \neq i} \sum_{i \neq j} r_{ij}^2}{\sum_{j \neq i} \sum_{i \neq j} r_{ij}^2 + \sum_{j \neq i} \sum_{i \neq j} r_{ij(p)}^2} \quad MSA = \frac{\sum_{i=1}^p r_{ij}^2}{\sum_{i=1}^p r_{ij}^2 + \sum_{i=1}^p r_{ij(p)}^2}; i = 1, \dots, p$$

Where:  $r_{ij(p)}$  = is the partial correlation coefficient of the correlation between the variables  $X_i$  and  $X_j$  in all cases.

In this way, to test the null hypothesis, the critical value of  $X^2$  calculated is taken if it is greater than the value of tables, there is evidence for the rejection of  $H_0$ , otherwise not reject. Finally, the components are extracted according to the criterion of eigenvalues > to 1 and their corresponding communality whose sum is the percentage of variance explained from:

$$h_i^2 = \text{Var} \left( \sum_{j=1}^k a_{ij} F_j \right) \dots y \dots \Psi_i = \text{Var}(u_i) \quad y \quad \text{Var}(X_i) = \sum_{j=1}^k a_{ij}^2 + \Psi_i = h_i^2 + \Psi_i; i = 1, \dots, p$$

The results obtained by the analyzed data are presented below.

#### 4. Results

Of the total valid cases regarding demographic aspects of the sample, the highest percentage corresponded to the female gender with 57.1 %. [Table 1](#) shows the Cronbach's alpha index:

**Table 1.** Cronbach's alpha ( $\alpha$ ) reliability analysis

Cases	N	%	Cronbach's alpha	N of Items
Valid	126	100.0		
Excluded	0	.0		
Total	126	100.0	.705	34

Source: Own.

In this table, the value obtained from Cronbach's alpha is 0.705, which indicates that it is acceptable ([Hair et al., 2010](#)). [Table 2](#) below shows Bartlett's Test of Sphericity with Kaiser (KMO),  $X^2$ , with significance ( $p < 0.01$ ):

**Table 2.** KMO and Bartlett's Test

Bartlett's Test		Values	MSA	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.582	INCOME*	.625 <sup>(a)</sup>
Bartlett's Test of Sphericity	Approx. Chi-Square	302.673	ADMIDICO*	.573 <sup>(a)</sup>
	Df	21	ADMIDIUA*	.646 <sup>(a)</sup>
	Sig.	.000	AICO*	.606 <sup>(a)</sup>
			AIUA*	.631 <sup>(a)</sup>
			GCCO*	.393 <sup>(a)</sup>
		GCUA*	.522 <sup>(a)</sup>	

<sup>a</sup> Measure of Sampling Adequacy.

\**INCOME* = Income, *ADMIDICO* = Knowledge about money management, *ADMIDIUA* = Use and application of money management, *AICO* = Knowledge about savings and investment, *AIUA* = Use and application of savings and investment, *GCCO* = Knowledge about expenditure and credit, *GCUA* = Use and application of expenditure and credit

Source: Own.

The values obtained from the Bartlett's Test of Sphericity (.582) in Table 2 denote a value not very appropriate to the acceptable range (> 0.5) indicated by Hair et al. (2010). On the other hand, the measure of sample adequacy for each variable is > 0.5 in most cases, except for the GCCO variable (.393<sup>(a)</sup>). Therefore, it is necessary to exclude it from the calculation and run the test again. Table 2.b presents the results below:

**Table 2.b.** Prueba KMO y Bartlett y MSA

Bartlett's Test		Values	MSA	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.635	INCOME*	.642 <sup>(a)</sup>
Bartlett's Test of Sphericity	Approx. Chi-Square	247.579	ADMIDICO*	.663 <sup>(a)</sup>
	Df	15	ADMIDIUA*	.609 <sup>(a)</sup>
	Sig.	.000	AICO*	.636 <sup>(a)</sup>
			AIUA*	.631 <sup>(a)</sup>
			GCUA*	.601 <sup>(a)</sup>

<sup>a</sup> Measure of Sampling Adequacy.

\**INCOME* = Income, *ADMIDICO* = Knowledge about money management, *ADMIDIUA* = Use and application of money management, *AICO* = Knowledge about savings and investment, *AIUA* = Use and application of savings and investment, *GCUA* = Use and application of expenditure and credit

Source: Own.

After resetting, the values are modified. Therefore, Bartlett's Test of Sphericity improves to 0.635, so its importance is > 0.05 and the X<sup>2</sup> value calculated with 15 df is 247,579, which is greater than the X<sup>2</sup> value of the tables (24,996). Table 3 shows the correlation values of the analyzed dimensions:

**Table 3.** Correlation Matrix

Variables*	1	2	3	4	5	6	7
INCOME (1)	1.000	.595	.286	-.301	-.261	-.024	-.255
ADMIDICO (2)		1.000	.366	-.161	-.110	.212	-.207
ADMIDIUA (3)			1.000	.371	.440	.164	.108
AICO (4)				1.000	.737	-.101	.117
AIUA (5)					1.000	.078	.188
GCCO (6)						1.000	.465
GCUA (7)							1.000

*a Determinant = .083*

(1) INCOME = Income, (2) ADMIDICO = Knowledge about money management, (3) ADMIDIUA = Use and application of money management, (4) AICO = Knowledge about savings and investment, (5) AIUA = Use and application of savings and investment, (6) GCCO = Knowledge about expenditure and credit, (7) GCUA = Use and application of expenditure and credit

Source: Own.

Table 3 gives the value of the determinant of 0.083 that is closer to zero, that is, it moves as far as possible from value 1, which gives support to say that the correlations are acceptable in theoretical terms (Hair et al., 2010). Being the correlations of greater value between the variables INCOME and ADMIDICO (.595) and the variables AICO and AIUA (.737). In Table 4 the extraction of components is carried out under the criterion of eigenvalues > to 1, with the corresponding communalities ( $\psi$ ) representing the proportion of variance.

**Table 4.** Components Matrix, Communalities, Eigenvalue and total Variance

Variables	Components		Extraction
	1	2	
AIUA	.833	.355	.771
AICO	.831	.286	.749
GCUA	.431	-.147	.771
ADMIDIUA	.305	.824	.772
ADMIDICO	-.456	.736	.820
INCOME	-.612	.630	.208
Eigenvalues	2.246	1.845	4.091
Total Variance	37.427	30.754	

INCOME = Income, ADMIDICO = Knowledge about money management, ADMIDIUA = Use and application of money management, AICO = Knowledge about savings and investment, AIUA = Use and application of savings and investment, GCUA = Use and application of expenditure and credit

Source: Own.

Finally, Table 5 shows the total variance explained:

**Table 5.** Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	% Cumulative	Total	% of Variance	% Cumulative
1	2.246	37.427	37.427	2.246	37.427	37.427
2	1.845	30.754	68.181	1.845	30.754	68.181
3	.912	15.193	83.374			
4	.403	6.723	90.097			
5	.339	5.653	95.750			
6	.255	4.250	100.000			

Extraction Method: Principal Component Analysis.

Source: Own.

As can be seen in [Table 5](#), the eigenvalue of components 1 and 2 is greater than 1. Both factors represent 68.18 % of the phenomenon under study.

## 5. Discussion

It is interesting to contrast the results of this study with those obtained by Contreras et al. (2017) because the same instrument was applied. However, a difference is observed around the variables studied since in this work the GCCO variable was excluded given its  $MSA < 0.5$  (.393<sup>(a)</sup>) so that it did not generate a bias in the results since it was not significant in statistical terms ([Hair et al., 2010](#)).

In the present work, it is also possible to identify in the studied population a high interest in the administration of money in its knowledge, use and application dimension towards savings and investment issues. The latter contrasts with the studies conducted by Contreras et al. (2017) since these studies show that students lack knowledge about investment instruments, although they do have knowledge about basic savings channels.

The starting point of financial education is the culture of savings and investment, so the application of such knowledge will allow for proper planning for the future. The success of these objectives requires that regardless of income level, each individual adopts the habit of saving at least 10 % to 20 % of their gross income ([Samper et al., 2010](#)).

For all the above described, financial education is relevant as it provides people with tools to make decisions that improve their economic well-being. Therefore, it is not surprising that its importance is increasing given the increasing and complex number of products offered by financial markets, in order to meet the profitability needs of a population increasingly concerned about changes in systems of pensions that imposes the challenge of retirement at an older age with lower income.

## 6. Conclusion

These results provide evidence to indicate that there is an underlying structure that allows explaining the phenomenon of financial education in Mexican students of higher education and, in the same way, this structure can be explained at least by one factor.

The statistical evidence comes from the rejection of the null hypothesis, since according to the decision criterion to reject  $H_0$  if  $X^2$  calculated is  $>$  to  $X^2$  of tables, otherwise reject. Then the criteria are met.

From the results obtained, it was possible to know that in component 1, the items related to knowledge, use and application towards saving and investment represented significant charges (AIUA and AICO .833 and .831, respectively) and for component 2, those related to knowledge, use and application about money management (ADMIDIUA and ADMIDICO .824 and .736, respectively).

## 7. Suggestions

As future lines of research, it is considered of great importance to carry out a study of the same population in order to measure financial competence based on a list of mini-cases associated with the financial topics analyzed in this document.

## 8. Acknowledgements

We thank all the students whose support was essential to carry out this study because they took the time to answer the survey.

## References

- Banamex** – UNAM (2008). *Primera encuesta sobre cultura financiera en México* [First survey on financial culture in Mexico]. [Electronic resource]. URL: <https://gruporepensares.files.wordpress.com/2011/11/cfmexico.pdf>
- Bernheim et al., 2001** – Bernheim, B.D., Garret, D.M., Maki, D.M. (2001). Education and saving: the long-term effects of high school financial curriculum mandates. *Journal of Public Economics*, 80(3): 435-465. DOI: 10.3386/w6085
- Bernheim, Garret, 2003** – Bernheim, B.D., Garret, D.M. (2003). The effects of financial education in the workplace: evidence from a survey of households. *Journal of Public Economics*, 87(7-8): 1487-1519. DOI: 10.1016/s0047-2727(01)00184-0
- Casper et al., 2013** – Casper, D.M., Totenhagen, C.J., Bracamonte, C., Borden, L.M. (2013). Youth financial literacy: Evidence – based programs and effective delivery methods. [Electronic resource]. URL: <https://bit.ly/347WOY2>
- Contreras et al., 2017** – Contreras, B.A., García-Santillán, A., Moreno-García E. (2017). Nivel de conocimiento que tienen los alumnos de nivel medio superior en tópicos financieros sobre gasto y crédito, ahorro e inversión y la administración del dinero [Level of knowledge that upper-level students have in financial topics on spending and credit, savings and investment and money management]. *International Journal of Developmental and Educational Psychology*, 2(1): 487-511. DOI: 10.17060/ijodaep.2017.n1.v2.962
- Demirguc-Kunt, Klapper, 2012** – Demirguc-Kunt, A., Klapper, L. (2012). Measuring financial inclusion: The global finindex database. [Electronic resource]. URL: <https://bit.ly/35aOWbD>
- García et al., 2014** – García, E.L.A., Arroyo, M.G., Espinosa, F. (2014). Contexto de la educación financiera en México [Context of financial education in Mexico]. *Administrative Science/Ciencia Administrativa*, 1: 21-30.
- Hair et al., 2010** – Hair, J.F.Jr., Black, W.C., Babin, B.J., Anderson, R.E. (2010). *Multivariate data analysis*, 7th ed. United States of America: Pearson Education.
- Hilgert et al., 2003** – Hilgert, M.A., Hogarth, J.M., Beverly, S. (2003). Household financial management: The connection between knowledge and behaviour. *Federal Reserve Bulletin*, 89: 309-322.
- International Center for Globalization and Development, 2009** – International Center for Globalization and Development (2009). *Buenas prácticas en educación previsional para su aplicación en Chile* [Good practices in pension education for application in Chile] (1). [Electronic resource]. URL: [from: https://bit.ly/2LHUcKe](https://bit.ly/2LHUcKe)
- Lusardi, Mitchell, 2011** – Lusardi, A., Mitchell, O.S. (2011). Financial literacy and planning: Implications for retirement wellbeing. *National Bureau of Economic Research Working Paper*, 17078: 1-37. DOI: 10.3386/w17078
- Mexico Government, 2018** – Mexico Government (2018). Educación Financiera [Financial Education]. [Electronic resource]. URL: [https://www.gob.mx/cms/uploads/attachment/file/83054/Educaci\\_n\\_Financiera.pdf](https://www.gob.mx/cms/uploads/attachment/file/83054/Educaci_n_Financiera.pdf)
- Moreno-García et al., 2017** – Moreno-García, E., García-Santillán, A., Gutiérrez-Delgado, L. (2017). Nivel de educación financiera en escenarios de educación superior. Un estudio empírico con estudiantes del área económico-administrativa [Level of financial education in higher education scenarios. An empirical study with students from the economic-administrative area]. *Latin American Journal of Higher Education/Revista iberoamericana de educación superior*, 8(22): 163-183. DOI: 10.22201/iissue.20072872e.2017.22.234



Raccanello, Herrera, 2014 – Raccanello, K., Herrera E. (2014). Educación e inclusión financiera [Education and financial inclusion]. *Latin American Journal of Educational Studies/Revista Latinoamericana de Estudios Educativos*, 44(2): 119-141.

Rivera, Bernal, 2018 – Rivera, B.E., Bernal, D. (2018). La importancia de la educación financiera en la toma de decisiones de endeudamiento. Estudio de una sucursal de "Mi Banco" en México [The importance of financial education in debt decision making. Study of a branch of "My Bank" in Mexico]. *Perspectives Magazine/Revista Perspectivas*, 41: 117-144.

Robinson, 2001 – Robinson, M.S. (2001). *The Microfinance Revolution: Sustainable Finance for the Poor*. Washington, D.C.: World Bank Publications.

Ruíz, 2011 – Ruíz, E. (2011). Educación financiera en México [Financial education in Mexico]. [Electronic resource]. URL: [http://ford.ciesas.edu.mx/downloads/2do\\_1\\_04.pdf](http://ford.ciesas.edu.mx/downloads/2do_1_04.pdf)

Samper et al., 2010 – Samper, M.J., Pinto, C., Arenas, J., Roca, M. (2010). *Mis finanzas personales [My personal finances]*, 1ª ed. Bogotá, Colombia: Aguilar.

Stango, Zinman, 2009 – Stango, V., Zinman, J. (2009). Exponential Growth Bias and Household Finance. *Journal of Finance*, 64(6): 2807-2849. DOI: 10.1111/j.1540-6261.2009.01518.x

Torres, Zaldívar, 2012 – Torres, Z., Zaldívar, M.T. (2012). Impacto de la educación financiera en las decisiones de inversión en el sistema bursátil [Impact of financial education on investment decisions in the stock market system] (Master's Thesis, National Polytechnic Institute, Mexico).

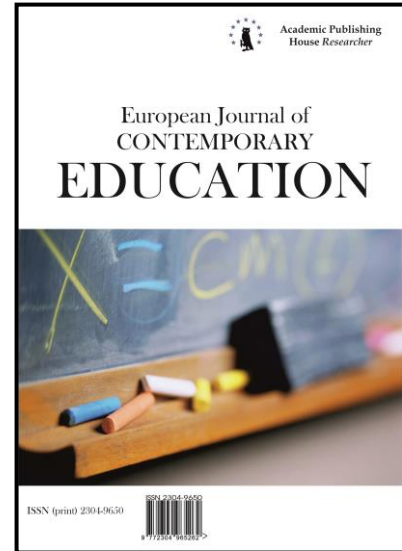
Van Rooij et al., 2007 – Van Rooij, M., Lusardi, A., Alessie, R. (2007). Financial Literacy and Stock Market Participation. *National Bureau of Economic Research Working Paper*, 13565: 1-46. DOI: 10.3386/w13565

Van Rooij et al., 2011 – Van Rooij, M., Lusardi, A., Alessie, R. (2011). Financial Literacy, Retirement Planning, and Household Wealth, *National Bureau of Economic Research Working Paper*, 17339: 1-40. DOI: 10.3386/w17339



Copyright © 2019 by Academic Publishing House Researcher s.r.o.  
All rights reserved.  
Published in the Slovak Republic  
European Journal of Contemporary Education  
E-ISSN 2305-6746  
2019, 8(4): 819-827  
DOI: 10.13187/ejced.2019.4.819  
[www.ejournal1.com](http://www.ejournal1.com)

**WARNING!** Article copyright. Copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of the violation of the author(s) rights will be pursued on the basis of international legislation. Using the hyperlinks to the article is not considered a violation of copyright.



## **Social Capital of Territorial Educational Complexes: Development Features and Problems (Using the Example of Moscow)**

Natalia V. Medvedeva<sup>a</sup>, Ekaterina A. Vetrova<sup>a</sup>, Elena E. Kabanova<sup>a,\*</sup>, Natalia V. Havanova<sup>b</sup>

<sup>a</sup> Russian State Social University, Moscow, Russian Federation

<sup>b</sup> Russian State University of Tourism and Service, Moscow, Russian Federation

### **Abstract**

In modern Russian conditions of the education system modernization, special attention must be paid to the social capital of educational organizations, since it largely determines the quality of educational activity. The article analyzes the personnel management system in the framework of the territorial educational complexes of the Southern Administrative District of Moscow. The relationship was found between the satisfaction of teachers with their work and such factors as the complexity and intensity of work, the ability of management to manage effectively, and communication between the administration and the teaching staff. Based on the study, key barriers were identified that did not allow educational complexes to develop social capital: a high level of tension among the teaching staff of educational institutions; a high level and variety of tasks that teachers need to solve; difficulties with planning activities within the educational complex and related to communication between teaching staff and governing bodies; insufficient level of managerial competence development among the employees of educational complexes. The authors conclude that in order to overcome the identified barriers, it is necessary to carry out comprehensive diagnostics of the educational complex management system state regularly, conduct the monitoring of indicators reflecting the level of employee motivation and the effectiveness of their managerial activities on the basis of educational complexes. It is necessary to maintain the socio-psychological security of the educational environment and apply an integrated approach to interaction system development between all participants of the educational process.

**Keywords:** territorial educational complex, teachers, managerial competencies, education quality, monitoring, educational service.

---

\* Corresponding author

E-mail addresses: [cool90@list.ru](mailto:cool90@list.ru) (E.E. Kabanova), [eavetrova@yandex.ru](mailto:eavetrova@yandex.ru) (E.A. Vetrova), [Nmedvedeva1984@mail.ru](mailto:Nmedvedeva1984@mail.ru) (N.V. Medvedeva), [khavanova.nv@mail.ru](mailto:khavanova.nv@mail.ru) (N.V. Havanova)

## **1. Introduction**

Creation of a strategy and implementation of education informatization policy through the introduction of innovative management models and the organization of the educational process using mechanisms for integrating information and communication technologies into the practice of modern pedagogy is currently one of the priorities of UNESCO activities in the field of education (Dendev, 2013).

The principles underlying strategic management are reflected successfully in the practice of modern educational complex management.

Territorial educational complexes should be considered as organizational systems from the point of view of management. The key management principle is changing in a new educational organization, which should be reduced to a balance of interest provision, as the correspondence between the amount of investment and the expected result.

Territorial educational complexes, combining the institutes of general, school and further education, represent an innovative management model in the field of general education. By changing the design scale from the level of a school educational institution to a certain territory, it becomes possible to respond to a diversified request for population educational services through the integration of educational organizations with the institutions of other areas (Kirillov, 2013). The goal of combining schools into a territorial educational complex (TEC) is to create a single educational space to meet family needs, guided by the principles of education continuity and succession at all levels of education, implementing the programs of pre-school, general and additional education for children from 1.5 to 18 years. The main tools that determine the result of the education system transition to appropriate technological footprints are the following ones: reorganization of educational institutions (organizations) and resource management, as well as a transparent procedure for state (regional) obligation financing in education (Kasprzhak, 2015).

Despite this, there is currently a high differentiation in the rate of strategic development of the Russian regional education systems. This is largely due to the lack of willingness and ability of managers to introduce new ideas into educational practice (Rakhmattulaev, 2015).

According to many experts, the formation of educational complexes as the result of various educational organization combination is usually accompanied by managerial level reduction; the conflicts between subjects of educational activity; decreased team manageability (Gainutdinov, 2014).

The process of territorial educational complex development as a new structure requires management personnel to implement new technologies and mechanisms, to possess new competencies of strategic thinking. However, real practice shows that not all representatives of educational management and teachers are ready for innovative management models.

Besides, over the years, despite the ongoing reforms in the educational sphere, the assessments of the school system remain average. Thus, according to the VTsIOM studies of 2019 "School education: tasks, priorities, needs", about half of the respondents consider that the situation in the field of school education has worsened over the past 5-10 years (51 %), only 17 % of respondents accept educational reforms positively. At the same time, it is worth noting that among the key parameters of an educational institution functioning and development, the majority of respondents assess the goodwill and attention of teachers to children (85 %), the qualifications of teachers (78 %) and the staffing of the educational institution (67 %) rather positively (VTsIOM, 2019). Accordingly, despite the general negative perception of educational reforms, the respondents' attitude towards teachers remains positive.

Thus, "it is necessary to implement the strategy of adaptation to the unknown, to initiate positive changes in the nearest society within the educational complexes" (Khaikin, 2014). Under the conditions of effective management, they are able not only to guarantee the real availability of quality education, but also to reduce the severity of social contradictions that unite different strata of society. Accordingly, the development of TEC as a newly formed large organization of the education system needs to improve management mechanisms. The quality of education system management is directly related to the level of professional competence of leaders, because the change of the educational paradigm formulates fundamentally new requirements for them.

All this actualizes the search for new mechanisms to improve the activities of educational complexes, taking into account the needs of not only direct consumers of educational services, but also the educational process participants.

## **2. Analysis of recent publications on the problem**

The studies on the development of the educational system and its assessment are of interest not only to domestic, but also to foreign scientists.

The processes of modeling and designing the educational process, the role of pedagogical technologies in it are the subject of consideration in the works by V.K. Dyachenko, V.A. Ermolenko, G.K. Selevko, A.P. Tryapitsina et al. Evaluation of innovative educational program implementation results is presented in the studies by Yu.F. Gortyshov and G.L. Degtyareva

The works by Gromyko Yu.V., G.U. Matushansky, R.R. Garifullina, and R.F. Bakeeva are devoted to the study of educational complex organization possibilities in the education system, and the formation of innovative educational clusters. The assessment of reforming education possibilities based on the use of the cluster approach was carried out in the works by L. Grudtsyna, A. Lagutkina and others. The problems of educational complex development at the regional level are reflected in the works by M.V. Gruzdev, and A.V. Zolotareva.

The works by Yasvin V.A. and Morgacheva E.M. are devoted to the study of organizational and cultural risks in the unification of educational organizations and their role in the managerial activities of the educational organization leaders. The analysis of the best systems of school education is presented in the works by M. Barber, M. Murshed, in which they noted that regardless of the particular socio-cultural development of different countries, it is possible to achieve serious qualitative changes in school systems during a fairly short period.

Special attention should be paid to the works devoted to the issues of interaction between the subjects of the educational process. Similar topics are revealed in the writings by E.V. Bondarevskaya, V.A. Sukhomlinsky, and N.E. Shchurkova. Many studies show that professional relations of teachers represent an important factor in teaching quality improvement. So, the study by E.N. Cusco, using the case study of two educational complexes as an example of the network analysis method use, demonstrates the features of professional and personal interactions between teachers within individual units of the territorial educational complex, the role of heads of school methodological associations and the administration (Cusco, 2017).

According to many foreign researchers, there is a steady positive correlation between the density of interactions and the educational results of school. The pedagogical community as school development agent, as well as in the context of a teacher's involvement in new educational practices, is considered in the work by Sławomir Krzychała. Social justice of teacher education is the focus of research by Katie A. Danielson and Sarah Schneider Kavanagh. The works by Mike Metz, Mary Hauser, Brad Fogo, Megan Westwood Taylor, Sarah Schneider Kavanagh, Janet Carlson are devoted to revealing the role of practice-oriented teacher education (POTE). Teacher performance assessment systems are analyzed by Sy Doan, Jonathan D. Schweig, and Kata Mihaly.

A number of studies are aimed at studying the role of school administration in the educational process. In particular, special attention is paid to school management, teacher training in Mumbai and Delhi in the works by Vidya K. Subramanian. The works by Terrance L. Green are devoted to the analysis of the principal activities in the southeastern United States.

However, despite the wide variety of studies on the problems of education development, the issues of educational complex development as innovative models of education and the role of the social capital among educational activity participants remain insufficiently studied.

## **3. Materials and Methods**

The empirical basis of the study was the results of the sociological study conducted by the authors during 2018 in the educational complexes of the Southern Administrative District of Moscow. The educational space of the Southern Administrative District of Moscow is represented by 5 educational complexes. The purpose of the expert survey was to assess the personnel management system, the characteristics of social capital development in the framework of educational complexes. The respondents were the employees of educational complexes in the Southern Administrative District of Moscow (N = 122). A systematic probabilistic sample was used. The basis of the sample was the list of employees of the territorial educational complexes of the Southern Administrative District of Moscow (in alphabetical order). The respondents were selected based on the list of the general population at intervals (K = 11). Alphabetic lists ensure that all units of the general population fit into the sample equally. Research tools are represented by a questionnaire.

The results of the study were analyzed by analyzing the dependence of educational complex employee satisfaction level on such factors as complexity and intensity of work, labor planning, leadership ability, sociability, work organization and others. The authors used the counting method for the Pearson criterion  $\chi^2$ .

However, there are certain limitations to the study. The resulting sample does not provide an opportunity to cover the entire target audience, as the study was conducted only on the territory of one administrative district of Moscow. In accordance with this, the results can be defined as preliminary, and for further more detailed analysis it is necessary to carry out a comparative analysis of the features of the formation and results of the development of territorial educational complexes of all administrative districts of Moscow. A larger sample size will provide more diverse information on the subject.

The obtained scientific results were also based on general scientific research methods. The analysis of statistical data made it possible to assess the modern system of school education in Russia, and also to determine the attitude of the population towards the subjects of educational activity. The method of comparative analysis was used to compare the features of educational system development in different countries. The use of analogy, generalization and extrapolation method was conditioned by the need to formulate conclusions based on the results of the study and develop recommendations for the development of territorial educational complex model.

Besides, the information base was the results of the studies by the All-Russian Center for the Study of Public Opinion (VTSIOM) on the following topic: "School education: tasks, priorities, needs" (2019), and the Public Opinion Foundation (POF) on the topic "Teachers and School" (October, 2019).

#### **4. Results**

The reform on the organization of educational complexes was widespread in Moscow. Starting in 2011, conditions began to be created in the capital for the transition of the education system to a new level of innovative development. Thus, all educational organizations were transformed into territorial educational complexes.

As of January 1, 2018, the system of capital education includes 587 multidisciplinary schools that implement the programs of general and additional education, including 562 schools with preschool groups; 53 colleges; 2 higher education organizations; 27 educational organizations of additional education. The total contingent of students in the educational system of the city of Moscow exceeds 1 million 420 thousand people. The report on the results of the state program "Capital Education" in 2017 declared the results of the school reorganization process. Among more than 6,000 small educational institutions, 789 large polyprofile multilevel educational institutions were created.

It is interesting in this regard to analyze the ways the residents of Moscow evaluate modern education directly. According to the POF "Teachers and School" study conducted in October 2019, the majority of respondents rated the quality of education as average (38 %), while more than a third of respondents consider it poor (37 %). In addition, according to the residents of Moscow, the quality of modern education has been deteriorating recently (47 %), only 17 % said that the state of the education system would improve, while others say that no major changes take place. Muscovites are quite critical of a modern teacher work. Only about a third of the respondents (29 %) called it good (for comparison: 34 % according to Russians) and 31 % of respondents considered it as satisfactory. Nevertheless, the majority of Muscovites (40 %), whose relatives are currently studying at school, like the teachers in these educational institutions (Teachers and schools, POF). These answers confirm all-Russian tendency of a rather positive perception of a teacher.

Thus, in many respects the effectiveness of the educational organization depends on the teaching staff and, accordingly, the degree of teacher's satisfaction with the conditions of his work.

The results of the study showed a high dependence of educational complex employee satisfaction degree on the complexity and intensity of work, the attitude to work and the presence of communications between the administration of the complex and the staff.

The authors used the counting method for the Pearson criterion  $\chi^2$  (Table 1).



**Table 1.** Analysis of contingency tables using the chi-square test

Factor trait	Resulting trait		Sum
	Yes	No	
Labor difficulty	81	39	120
High labor intensity	86	34	120
Difficulties during the whole complex activity planning	73	47	120
Insufficient level of managerial competence development among complex administration	78	42	120
Difficulties in communication between the administration and the teaching staff	77	43	120
Difficulties in communication within the teaching staff Removed, since 10 is not allowed, 9 is possible	35	85	120
Difficulties in communication between teachers and students	39	81	120
Difficulties in labor organization	69	51	120
Responsible attitude to work	105	15	120
<b>Total</b>	<b>643</b>	<b>437</b>	<b>1080</b>

During the analysis of the data obtained, the following results were obtained. The value of  $\chi^2$  criterion makes 134.639. The critical value of  $\chi^2$  at the significance level of  $p = 0.01$  makes 20.09. The relationship between factor and effective traits is statistically significant at the significance level of  $p < 0.01$ .

Based on the study, those factors were identified that influence the formation of the social capital of an educational organization and do not allow an educational complex to develop at higher rates.

Firstly, this is a high level of tension among the teaching staff of educational institutions. This is largely due to the fact that when you combine various schools into educational complexes, management does not always take into account the peculiarities of the organizational culture of these educational organizations. This fact is reflected in many foreign studies. Thus, the study of more than two hundred organizations in which the processes of mergers or acquisitions took place showed that the underestimation of differences in the organizational cultures of the merged institutions by managers turned out to be one of the key managerial errors that caused the unfortunate consequences (Yasvin, 2017). In this regard, it is necessary to involve the pedagogical community in new educational practices, to form an orientation pattern (Sławomir Krzychała, 2019).

Secondly, there is a high level and variety of tasks that teachers need to solve. This is mainly due to the fact that in modern conditions of the education system dynamic development, the regular update of educational programs, as well as new methods and innovative technology introduction in the educational process, not all teachers are ready for such changes caused by the high rates of capital education development.

Thirdly, there are the difficulties with planning activities within the educational complex. This problem was largely caused by the fact that after the combination of individual educational institutions into a single educational complex, the new leadership in the development of strategic plans, as a rule, did not always take into account the features of their development, organizational culture and growth points.

Fourth, the difficulties associated with communication between teaching staff and governing bodies. Similar difficulties are also caused mainly by the active processes of school combination into the educational complex and the emergence of a certain disunity between its leadership and the teaching staff.

Fifth, the insufficient level of managerial competence development among the employees of educational complexes. This indicates that not all employees of the complex have the necessary skills and competencies for the implementation of management activities.

The study demonstrated that such aspects as sociability, responsible attitude to work and the general degree of work quality among the employees of educational complexes are expressed at a high level.

Besides, the internal climate and the degree of trust between students and teachers, schoolchildren themselves and their parents have a significant impact on the development of the educational institution and the growth of its effectiveness indicators. All these factors form a single picture of the educational institution socio-psychological security.

After the study, they found that interaction both within the teaching staff and with students does not pose serious difficulties for the respondents.

The study showed that most of the surveyed employees characterize the educational environment positively, feel protected inside it, which allows them to develop favorable and comfortable relations not only with students, but also with colleagues.

## **5. Discussion**

The results of the study allow us to note that the complexity and intensity of work, the diversity and wide range of tasks that teachers face, leads to the formation of a high level of tension in a team. A similar situation is probably conditioned by the fact that not all employees of the educational complex have adapted to innovations and changes taking place in their educational organizations. To reduce psychological barriers and create a comfortable working environment, it is necessary to conduct relevant trainings and events to increase the level of motivation for innovative technology application. Separately, it is worth noting the role of practice-oriented professional development programs for teachers, which allow them to build adaptive learning abilities (Sarah Schneider Kavanagh et al., 2019), as well as the need to prepare teachers for project-based learning (Pam Grossman et al., 2019), which will improve the quality of education in general.

Also, the results of the study demonstrate the difficulties with planning activities within the educational complex and the lack of constructive communication between the administrations of the TEC and the teaching staff. In many respects, this may be due to the fact that not all employees of the educational complex occupying administrative positions have managerial skills and competencies. Excessive management bureaucracy reduces the rate of the management system adaptation to the transformation of environmental conditions for the implementation of educational policy (Rogach et al., 2017). The presence of strategic thinking is currently one of the most important qualities of a modern manager. Accordingly, the need for advanced training of educational complex heads will allow them to master the competencies of a modern educational manager who can manage in the face of uncertainty, have strategic thinking and own innovative methods and technologies (Litakova, Medvedeva, 2017).

Effective human resource management in educational organizations can be promoted by educational marketing, which is currently not fully developed (Vetrova et al., 2019). Moreover, only the integrated development of human, material and information resources stimulates the synergistic effect of educational services and ensures the achievement of the educational organization mission (Gorghiu et al., 2019). To help teachers improve the quality of teaching, it is necessary to create conditions that allow them to recognize the shortcomings of their work and gain knowledge about proven best practices, and interest teachers in their work improvement (Barber, Murched, 2008). All this can be done by a monitoring system development. Modern teacher performance appraisal systems use a variety of performance indicators to build performance ratings (Sy Doan et al., 2019). Studies show that the introduction of a system for monitoring the quality of processes and activity results is one of the urgent tasks of educational complexes and the achievement of their management systems at a higher level (Seryshev, 2017). At the same time, the assessment should provide valuable information for management, provide feedback and support a dynamic learning feature (Elmore, 2019).

Good practices in the development of a new educational system exist in such countries as the UK, USA, Germany. The main goal of this system is to formulate a detailed developed strategy aimed at specific goals and indicator implementation (Coveni, 2011).

Due to the fact that the management of educational institutions tends to become more complicated, there is a need for the development of inter-educational structural ties among individual institutions. Thus, new types of educational institutions require a specific approach to a management system organization within them. The financial independence of educational institutions increases, which entails the degree of responsibility increase for the results of their activities on the part of the apparatus for their management. Thus, in the management practice of the UK schools, the technology of planning, called Hyperion Planning, is actively used ([Matushansky, 2014](#)). The practice of this technology use was first implemented in 1995. The main objective of this system is to organize budget planning processes.

The new management model of the Balanced Scorecard is actively used in Chile, as the tool for the organization strategy management ([Savzikhanova, 2013](#); [Cancino, 2019](#)). With its help, one can consider activity in several perspectives, i.e. monitor performance not only by financial indicators, but also by the quality of work with employees, the quality of communications, etc. Using such a model allows the Chilean government to receive and objectively evaluate information on the success of educational institutions, which greatly increases the implementation degree of set strategic goals and tasks.

Thus, an integrated approach is needed when they build a system of interaction between all participants in the educational process. New approaches to education management require modern teachers to meet high professional standards. Besides, in the conditions of educational complex development, a special role is played by maintaining the socio-psychological safety of the educational environment in relation to the four sides of the educational process (governing bodies, teachers, students and their parents).

To minimize the influence of these factors in each educational complex, it is necessary to pay special attention to the scientific and methodological support of educational system development in the context of new priorities of the Russian Federation educational policy. This can be done by organizing the relevant Centers. In particular, in the Southern Administrative District of Moscow there the Center for the Development of Educational Systems at the School No. 939, whose activities are aimed at the following goals: strategic design, consulting, examination and monitoring the development of educational systems; development of managerial competencies among managers, personnel reserve, employees and the management teams of educational organizations; accumulation of domestic and foreign educational, methodological and consulting resources, their systematization and concentration for the development and implementation of regional and municipal projects in the field of education; scientific and methodological support for the development and implementation of projects aimed at the development of educational systems, as well as educational organizations; scientific and methodological support for the development and implementation of financial and economic mechanisms to ensure innovative processes in the development of educational systems and their personnel potential ([The official website of SBEE...](#)). Thus, the Center activities were integrated into the school educational practice, which allowed it to increase the effectiveness of its activities and the quality of educational complex management significantly.

## **6. Conclusion**

At present, education, career and professional growth in Russia are priority life values ([Kabanova, Vetrova, 2018](#)). Thus, in modern Russian conditions, when they modernize the education system, special attention should be paid to the social capital of educational organizations, since it largely determines the quality of educational activity. The results of the study showed, that the satisfaction of teachers with their work depends primarily on such factors as complexity and intensity of work, the ability of management to manage effectively, communication between the administration and the teaching staff. Accordingly, the key barriers that prevent territorial educational complexes from social capital development are the following ones: a high level of tension among the teaching staff of educational institutions; a high level and variety of tasks that teachers need to solve; difficulties with planning activities within the educational complex and related to communication between teaching staff and governing bodies; insufficient level of managerial competence development among the employees of educational complexes.

To solve the problems identified, special attention should be paid to the comprehensive state diagnostics of the educational complex management system, monitoring indicators based on

educational complexes reflecting the level of employee motivation and the effectiveness of their managerial activities. Technologies for assessing the organizational culture and the state of the workforce will allow management to build strategies for the formation of common values for the educational complex.

Improving the effectiveness of educational complexes should be based on the development of a strategic management system that includes the strategic thinking of managers, the establishment of regular strategic management processes, and the implementation of a system to assess the implementation of strategic initiatives. Further training of employees of the educational complex in the field of strategic development, as well as the development of their managerial skills will allow for more effective implementation of the educational process and strategic planning.

## References

- [Barber, Murched, 2008](#) – Barber, M., Murched, M. (2008). Kak dobit'sya stabil'no vysokogo kachestva obucheniya v shkolah [How to achieve a consistently high quality of teaching in schools]. *Voprosy obrazovaniya*, 3: 7-60. [in Russian]
- [Cancino et al., 2019](#) – Cancino Christian A., Merigo Jose M., Etchebarne Maria soledad (2019). Evolution of the business and management research in Chile. *International Journal of Technology Policy and Management*, 19(2): 108-130.
- [Coveney, 2011](#) – Coveney, M. (2011). Strategicheskij razryv: tekhnologii voploshcheniya korporativnoj strategii v zhizn' [Strategic gap: technologies for translating corporate strategy into reality]. M.: *Alpina Business Books*, 330 p. [in Russian]
- [Cuzco, 2017](#) – Cuzco, E.N. (2017). Territorial'nye obrazovatel'nye komplekсы Moskvy: Udalos' li sozdat' novye professional'nye svyazi? [Territorial educational complexes of Moscow: Did you manage to create new professional ties?]. *Nauka i shkola*, 4: 122-129. [in Russian]
- [Dendev, 2013](#) – Dendev, B. (2013). Informacionnye i kommunikacionnye tekhnologii v obrazovanii [Information and communication technologies in education]. M.: UNESCO IITE, 320 p. [in Russian]
- [Gainutdinov et. al., 2014](#) – Gainutdinov, R.M., Semenova, L.P., Shutova, E.N. (2014). Antikrizisnyj instrument [Anti-crisis tool]. *Direktor shkoly*, 9: 24-31. [in Russian]
- [Gorghiu et al., 2019](#) – Gorghiu, G., Petrescu, A.M.A., Enache, R.C. (2019). The Educational Marketing between Theory and Practice in the Context of Secondary Education Institutions. *11<sup>th</sup> LUMEN International Scientific Conference Communicative Action & Transdisciplinarity in the Ethical Society*. DOI: doi.org/10.18662/lumproc.107
- [Gruzdev, Zolotareva, 2015](#) – Gruzdev, M.V., Zolotareva, A.V. (2015). Model' formirovaniya obrazovatel'nogo kompleksa regiona [Model for the formation of the educational complex of the region]. *Yaroslavskij pedagogicheskij vestnik*, 5: 8-14. [in Russian]
- [Kabanova, Vetrova, 2018](#) – Kabanova, E.E., Vetrova, E.A. (2018). The Practice of Implementing Bologna Process in the Education Sector in the Russian Federation: Trends and Consequences. *European Journal of Contemporary Education*, 7(3): 511-520.
- [Kasprzhak et al., 2015](#) – Kasprzhak, A.G., Kalashnikov, S.P., Golubkin, I.V. (2015). Sistemnye efekty sozdaniya i razvitiya territorial'nyh obrazovatel'nyh kompleksov [Systemic effects of the creation and development of territorial educational complexes]. *Zhurnal rukovoditelya upravleniya obrazovaniem*, 3: 17-23. [in Russian]
- [Khaikin, Grigoriev, 2014](#) – Khaikin, V.L., Grigoriev, D.V. (2014). Socializaciya detej i semej v territorial'nom obrazovatel'nom komplekse [Socialization of children and families in the territorial educational complex]. *Psihologicheskaya nauka i obrazovanie*, 6(2): 68-74. [in Russian]
- [Kirillovykh, 2013](#) – Kirillovykh, A.A. (2013). Otdel'nye problemy yuridicheskoy tekhniki i sodержatel'noj storony norm Zakona «Ob obrazovanii v Rossijskoj Federacii» [Certain problems of legal technology and the substantive side of the norms of the Law “On Education in the Russian Federation”]. *Zakonodatel'stvo i ekonomika*, 7. [in Russian]
- [Litakova, Medvedeva, 2017](#) – Litakova, Yu.V., Medvedeva, N.V. (2017). Osobennosti razvitiya sistemy upravleniya obrazovatel'nyh kompleksov [Features of the development of the management system of educational complexes]. *Materialy Ivanovskih chtenij*, 4(2): 128-134. [in Russian]
- [Matushansky, et. al., 2014](#) – Matushansky, G.U., Garifullina, R.R., Bakeeva, R.F. (2014). Innovacionnye territorial'nye klasteri: zarubezhnyj i otechestvennyj opyt [Innovative territorial



clusters: foreign and domestic experience]. *Vestnik Kazanskogo tekhnologicheskogo universiteta*, 1(71): 354-358. [in Russian]

[Pam Grossman et al., 2019](#) – Pam Grossman, Christopher G. Pupik Dean, Sarah Schneider Kavanagh, Zachary Herrmann (2019). Preparing teachers for project-based teaching. *Phi Delta Kappan*, 100(7): 43-48.

[Public Opinion Foundation....](#) – Teachers and school. The data of the Public Opinion Foundation. 2019. [Electronic resource]. URL: <https://fom.ru/Nauka-i-obrazovanie/14268>

[Rakhmatullaev, 2015](#) – Rakhmatullaev, D.R. (2015). Osnovy strategicheskogo upravleniya obrazovatel'nymi uchrezhdeniyami [Fundamentals of strategic management of educational institutions]. *Obrazovanie cherez vsyu zhizn': nepreryvnoe obrazovanie v interesah ustojchivogo razvitiya*, 13: 544-546. [in Russian]

[Elmore, 2019](#) – Elmore Richard F. (2019). The Future of Learning and the Future of Assessment. *ECNU Review of Education*. DOI: <https://doi.org/10.1177/2096531119878962>

[Rogach et al., 2017](#) – Rogach, O.V., Frolova, E.V., Medvedeva, N.V., Ryabova, T.M., Kozyrev, M.S. (2017). State and public management of education: myth or reality. *Espacios*, 38(25): 15-23.

[Sarah Schneider Kavanagh et al., 2019](#) – Sarah Schneider Kavanagh, Mike Metz, Mary Hauser, Brad Fogo, Megan Westwood Taylor, Janet Carlson. (2019). Practicing Responsiveness: Using Approximations of Teaching to Develop Teachers' Responsiveness to Students' Ideas. *Journal of Teacher Education*. DOI: <https://doi.org/10.1177/0022487119841884>

[Sarah Schneider Kavanagh, Katie A. Danielson, 2019](#) – Sarah Schneider Kavanagh, Katie A. Danielson. (2019). Practicing Justice, Justifying Practice: Toward Critical Practice. *Teacher Education American Educational Research Journal*. DOI: <https://doi:10.3102/0002831219848691>

[Savzikhanova, 2013](#) – Savzikhanova, S.E. (2013). Zarubezhnyj opyt razvitiya sfery obrazovatel'nyh uslug [Foreign experience in the development of educational services]. *Kreativnaya ekonomika*, 7(10): 127-135. [in Russian]

[Seryshev, 2017](#) – Seryshev, R.V. (2017). Usloviya i tendencii razvitiya sistemy upravleniya obrazovatel'nymi kompleksami i uchrezhdeniyami [Terms and trends in the development of the management system of educational complexes and institutions]. *Vestnik Universiteta GUU*, 4: 175-181. [in Russian]

[Sławomir Krzychała, 2019](#) – Sławomir Krzychała (2019). Teacher Responses to New Pedagogical Practices: A Praxeological Model for the Study of Teacher-Driven School Development. *American Educational Research Journal*. DOI: <https://doi.org/10.3102/0002831219868461>

[Sy Doan, et. al., 2019](#) – Sy Doan, Jonathan D. Schweig, Kata Mihaly (2019). The Consistency of Composite Ratings of Teacher Effectiveness: Evidence From New Mexico. *American Educational Research Journal*. DOI: <https://doi.org/10.3102/0002831219841369>

[Green, 2019](#) – Green Terrance L. (2019). School as Community, Community as School: Examining Principal Leadership for Urban School Reform and Community Development. *Education and Urban Society*. DOI: <https://doi.org/10.1177/0013124516683997>

[The official website of SBEE...](#) – The official website of SBEE «School №939». [Electronic resource]. URL: [http://sch939u.mskobr.ru/sostav\\_soveta/](http://sch939u.mskobr.ru/sostav_soveta/)

[Vetrova et al., 2019](#) – Vetrova, E.A., Kabanova, E.E., Medvedeva, N.V., Jukova, E.E. (2019). Management of Educational Services Promotion in the Field of Higher Education (the Example of "Russian State Social University"). *European Journal of Contemporary Education*, 2(8): 370-377.

[Subramanian, 2018](#) – Subramanian Vidya K. (2018). From Government to Governance: Teach for India and New Networks of Reform in School Education. *Contemporary Education Dialogue*. DOI: <https://doi.org/10.1177/0973184917742247>

[VTSIOM research data...](#) – School education: tasks, priorities, needs. VTSIOM research data. 2019. [Electronic resource]. URL: <https://wciom.ru/index.php?id=236&uid=9874>

[Yasvin, Morgacheva, 2017](#) – Yasvin, V.A., Morgacheva, E.M. (2017). Organizacionnaya kul'tura pedagogicheskikh kollektivov v situacii ob"edineniya obrazovatel'nyh organizacij [Organizational culture of pedagogical collectives in a situation of unification of educational organizations]. *Vestnik RGGU. Seriya «Psihologiya. Pedagogika. Obrazovanie»*, 4(10): 58-74. [in Russian]





Copyright © 2019 by Academic Publishing House Researcher s.r.o.  
All rights reserved.  
Published in the Slovak Republic  
European Journal of Contemporary Education  
E-ISSN 2305-6746  
2019, 8(4): 828-840  
DOI: 10.13187/ejced.2019.4.828  
[www.ejournal1.com](http://www.ejournal1.com)

**WARNING!** Article copyright. Copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of the violation of the author(s) rights will be pursued on the basis of international legislation. Using the hyperlinks to the article is not considered a violation of copyright.



## **Empirical Study on Financial Education. Case Study of Public Accounting Graduates in Veracruz, Mexico**

Elena Moreno García <sup>a, \*</sup>

<sup>a</sup>Universidad Cristóbal Colón, Campus Calasanz, Veracruz, México

### **Abstract**

The purpose of the study was to assess the level of education that public accounting graduates in Veracruz, Mexico have regarding financial topics. Financial education has become an essential skill in people's lives as a result of the evolution of financial markets. It is logical to think that for graduated in the area of accounting it is essential to have a high level of education in financial matter to be able to perform in their professional field. To carry out the research, the survey designed by Moreno-García, García-Santillán, and Gutiérrez (2017) was used. The populations surveyed were students in the course about fiscal topics carried out in the College of Public Accountants of the State of Veracruz. Descriptive techniques were used to measure the data and the hypothesis test was contrasted with the Z statistic of proportions. The main findings suggest that accounting graduates present an adequate level of education towards financial issues on interest rate calculation, inflation, credit card management, savings, and budget.

**Keywords:** financial education, public accounting, graduates, Mexico.

### **1. Introduction**

Education can be seen as both an objective and component of development, as well as “fundamental to the broader notion of expanded human capabilities that lie at the heart of the meaning of development” (Todaro, Smith, 2011, cited in Power, 2018). Specifically, financial education has become an essential skill in people's lives as a result of the evolution of financial markets. Financial markets have become more sophisticated, and so have new products offered to retail consumers. The evolution of information technology and telecommunications has led to a proliferation of new financial products adapted to the needs of the market. The use of these products depends on the level of financial education of the population.

Mexico faces the challenge of increasing the level of financial education of its inhabitants; at least this was indicated by evidence gathered in the last decade. There are not enough studies about

---

\* Corresponding author  
E-mail addresses: [elenam@ucc.mx](mailto:elenam@ucc.mx) (E. Moreno García)

Mexicans financial education yet. Hasting and Tejeda-Ashton (2008) found that Mexicans with less financial literacy had less probability to select the lowest commissions option of account for saving to retirement. That was the result of a survey realized to people affiliated to social security government program. Duarte and Hasting (2009), show that individuals with less financial literacy are more likely to be persuaded by advertising, trademarks, peer opinions or irrelevant information when selecting their account for saving to retirement or when they change to another. In general, these individuals make decisions.

Suboptimal financials compared to those with higher knowledge (Villagomez, 2014).

The result of the survey conducted in Mexico by the National Autonomous University of Mexico, UNAM and Banamex (2008) indicates that 20 % of the population plans and records their financial movements. Apparently the habit of saving does not appear in the Mexican since apparently only allocates 3 % of his income to this item and 1 % for his retirement.

Of the total population surveyed, only 50 % expressed the intention to save, but the scheme they use the most is the group savings scheme (25.8 %), a form of savings among individuals, which certainly carries a risk of permanent fraud. 70 % of respondents also stated that they are not informed about investments, savings, credits, even the withdrawal scheme of the so-called AFORES.

BANAMEX and UNAM (2014) carried out a study with the intention of knowing the financial culture of the Mexican adolescent population between 15 and 29 years. The result shows that 47 % do not have the habit for formal savings, more than 50 % said they did not keep any record of their income and expenses, or savings.

The National Survey of Financial Inclusion (2015) reports that 36.6 % of the population said they kept track of their expenses, although 63.8 % only in their mind, which is definitely not reliable. 44 % have a saving account, 41.2 % have a retirement account and 50 % do not have any financial product, credit or savings, because their income is not enough.

In addition to the products and services offered by financial institutions, a large number of operations that require a certain level of financial education and that have to do with electronic commerce are carried out on a daily basis through technology and globalization. Morales and Morales (2014), refer in this regard that technology has changed people's way of life, for example, expediting procedures between companies and taxpayers, which requires companies to adapt their way of operation to comply with requirements established by the State.

In this sense, it is indeed desirable that people are financially educated to be able to make efficient use of the products and services offered by financial institutions, it is logical to think that for graduated in the area of accounting it is essential to have a high level of education in financial matter to be able to perform in their professional field.

Therefore, the following research question arises:

RQ1: What is the level of financial education of public accounting graduated in Veracruz?

## **2. Literature review**

The economic strategies proposed from various approaches point to greater global financial literacy. Kharchenko (2011) points out that one of the global initiatives aimed at this objective was initiated by the OECD in March 2008, when an international gateway for financial education was established. Another important initiative was that of the World Bank with the project of consumer protection and financial education, aimed at evaluating and improving financial education worldwide.

Montoya (2005) points out that financial education must be for life, due to people's constant change, their own circumstances and motivations, and the existing information on the economy of the country and the world.

Lusardi (2008) conducted a study in the United States where he demonstrated that financial illiteracy is widespread and particularly acute among specific groups, including those with low education, in women and minorities such as older people with an average age of 65 years, who showed an alarmingly low level of financial education. Lusardi and Mitchell (2008) in turn reported that finance experts are more likely to plan and succeed based on formal methods such as retirement calculations, rather than guided by the opinions of family members, relatives or co-workers.

Schuchardt, Sherman, Tahira, Lyons, Palmer and Jing (2009) argue that education is the collective hope for better financial behavior. For their part, Mandell and Schmid (2009) identified that people's financial behavior is positively influenced when they have received courses on personal financial management at an early age, for example, at a secondary level. In this regard, Lusardi and Mitchell (2009) in the United States demonstrated that the level of financial education is higher when consumers have been exposed to knowledge about economics in school and in employer-sponsored programs.

Financial education could be adopted to impart knowledge, direct behavior and promote some skills in students, according to Shafii, Shahwan, Salleh, Ibrahim, Arif, Alwi, and Sopian (2018).

On the subject of financial education Arcos (2010) points out that domestic, family, social or survival economic strategies are some of the names used to generically call the rational actions of social units, either in the form of a domestic group or family unit, aimed at defending their interests and resisting the onslaught of different economic models, which necessarily has implications in financial education.

Financial education is required so that consumers of financial products and services are well informed and can make better decisions. In addition, so that they are able to identify those products that are not suitable for their personal purposes, and that prove to be very expensive, for example, some credit cards or mortgage loans with variable rates (Lusardi, Mitchell, 2014).

Álvarez, Páramo and Carpio (2011) point out that, in order to properly manage an estate, a financial intervention is required based on a strategy that integrates financial education, technical capabilities and knowledge of banking legislation itself. Financial decisions related to asset creation, future planning or debt management require the ability to perform calculations. Improving numerical ability and teaching mathematical skills between school and the young can be useful not only in the labor market but also to achieve good financial decisions throughout life (Lusardi, 2012).

Financial education is the first step to achieve financial inclusion. Financial education is considered an important complement to promote financial inclusion, financial development and, ultimately, financial stability. There is a relationship between behavior and knowledge (Ramachandran, 2011; Atkinson, Messy, 2012), which suggests a positive association for any country: when knowledge increases, so does behavior.

Babajic, Okicic and Kokorovic (2018), point out that easy access to financial products and services is one of the key contributing factors for young people to make their own economic decisions. The more financially aware they are, the greater their chances of making decisions about having a savings account, a debit or credit card, and become more easily and quickly involved in various social groups.

In Mexico, financial education actions have proved insufficient to increase the degree of financial culture of the population and thereby increase people's life quality, while benefiting from financial institutions and the country's economy growth (Amezcuca et al., 2014). The public policy challenge of bringing financial education at an early age and bringing financial products and services to those especially vulnerable groups remains.

An important part of the population depends on the advice of their accountants, so it is essential that these professionals have a solid base of basic financial education to better serve their clients (Rakow, 2019).

In order to answer the research question, the following objectives are proposed: evaluate the level of education that public accounting graduated have in Veracruz, describe the knowledge that accounting graduated have about the calculation of interest rates, inflation, credit card management, savings and investment and budget. For this, the following hypotheses are proposed:

Hi1: Most accountants understand the behavior of interest rates and their effect.

Hi2: More than 50 % of accountants understand inflation.

Hi3: More than 50 % of the accountants understand the use of the credit card.

Hi4: More than 50 % of accountants understand what savings are.

Hi5: Most accountants keep a budget of their personal finances.

### 3. Methodology

The present empirical study is approached from the hypothetical deductive paradigm. It is a non-experimental design work since there is no manipulation of the independent variables (X) that modify the effect (Y). In addition, the study is cross-sectioned, since the field study is carried out in a single moment.

#### 3.1 Population and sample

In order to obtain the data, students of a fiscal course that was held at the College of Public Accountants of the State of Veracruz, Ver., from August 30 to October 18, 2018, were surveyed. The sample is non-probabilistic for convenience, since all of the students of the course referred to above were considered.

#### 3.2 Instrument

For the field work, the survey designed by Moreno-García, García-Santillán and Gutiérrez (2017) called the Financial Education Survey was used, which consists of two sections: the profile section of the respondent and the knowledge section on calculation of interest rate, inflation, credit card management and budget with a total of 28 items. Answers are multiple choice.

#### 3.3. Analysis of data

The data is analyzed descriptively to identify the frequencies of the sociodemographic profile of the participants about: age, gender, marital status, education among other indicators. To test the hypotheses: H1 to H25, the Z test of the assertion of the proportion was used, where  $p > 0.5$ , so the null and alternative hypotheses are of the form.  $H_0: p \leq 0.5$  and  $H_1: p > 0.5$  (Triola, 2004). Therefore, the decision criterion establishes: a). – Error type I. Rejects null hypothesis when  $(H_0) P \leq 0.5$  b). – Error type II. No null hypothesis is rejected when  $(H_0) P > 0.5$  so the decision criterion will be: reject  $H_0$  if Z calculated  $> Z$  tables, otherwise do not reject.

### 4. Analysis and interpretation of the information

The frequencies obtained from the sociodemographic profile are shown below: gender, age, marital status, employment status, position and income.

**Table 1.** Gender, age and civil status

Gender	Frequency	% valid	% accumulated
Male	26	49.1	49.1
Female	27	50.9	50.9
Total	53	100.0	100.0
Age	Frequency	% valid	% accumulated
18 a 21	3	5.7	5.7
>21 a 25	11	20.8	26.5
>25 a 30	11	20.8	47.3
>30 a 40	13	24.5	71.8
>50 a 60	10	18.9	90.7
>60	5	9.3	100.0
Total	53	100.0	
Civil status	Frequency	%valid	% accumulated
Co-habitant	8	15.1	15.1
Divorced	4	7.5	22.6
Married	15	28.3	50.9
Single	26	49.1	100.0
Total	53	100.0	

Source: own

Table 1 shows the result of the variables gender, age and marital status, the frequencies are as follows: in gender it is observed that there was a very balanced assistance (50-50). The age range of 21 to 40 years presents a 66.1 %, the highest percentage is of single accountants with 49.1 %, of the latter we could think that of this studied population, they are currently more interested in their professional careers than in starting a family, since the responsibilities acquired with it as well as

the expenses that they entail are greater. It was observed that married people were only 28.3 % of the sample.

In relation to the position they occupy and the economic income they receive, the results are shown in [Table 2](#):

**Table 2.** Position and income

Position	Frequency	% valid	% accumulated
Operative	5	9.4	9.4
Administrative	31	58.5	67.9
Middle management	13	24.5	92.5
Owners	4	7.5	100.0
Total	53	100.0	
Income (\$USD)	Frequency	% valid	% accumulated
<\$150	5	9.4	9.4
\$150 up to \$249	4	7.5	17.0
\$250 up to \$399	10	18.9	35.8
\$400 up to \$649	17	32.1	67.9
\$650 up to \$1,000	10	18.9	86.8
>\$1,000	7	13.2	100.0
Total	53	100.0	

Source: own

In the labor sector, the highest data correspond to the graduated currently working in the administrative area with 58.5 %. The highest range of income obtained by the individuals ranges from \$ 8,000.00 to \$ 12,999.00 with 32.1 %, followed by those who receive between \$ 13,000.00 and \$ 20,000.00 with 18.9 %, (percentage similar to the salary range of \$ 5,000 to \$ 7,000). These amounts of income in Mexico, are very common salaries in those companies who have their accounting and financial departments.

Regarding the frequencies on the knowledge presented by the respondents towards the variables under study, the following results were obtained:

For the variable interest rate calculation, [Table 3](#) shows the frequencies of the indicators CTI1, CTI2 and CTI3:

**Table 3.** Interest Rate Indicators

CTI1 (If anual inflation rate is 2%, after one year, how much could you buy with the money from this account?)			
	Frequency	% valid	% accumulated
More than today	2	3.8	3.8
The same than today	8	15.1	18.9
Less than today	43	81.1	100.0
Total	53	100.0	
CTI2 (If interest rate increases, what will happend with bonds price?)			
	Frequency	% valid	% accumulated
Increases	18	34.0	34.0
Decreases	15	28.3	62.3
Remains the same	5	9.4	71.7
There is no relation	8	15.1	86.8
I don´t know	6	11.3	98.1
I prefer not to answer	1	1.9	100.0
Total	53	100.0	
CTI3 (A 15-year mortgage usually requires higher monthly payments than a 30-year mortgage, but the total interest paid during the loan will be lower.)			
	Frequency	% valid	% accumulated



True	40	75.5	75.5
False	8	15.1	90.6
I don't know	3	5.7	96.2
I prefer not to answer	2	3.8	100.0
Total	53	100.0	

Source: own

The results shown in Table 3 show that 81.1 % of respondents understand the relationship between inflation and interest rate, only 28.3 % know the relationship between the interest rate and the price of bonds and in the calculation of long and medium term interest rate payments, 75.5 % answered correctly.

In relation to inflation, table 4 shows that 47.2 % know how to protect their savings against inflation, 24.5 % do not have a clear idea of how and that 28.3 % are unaware.

**Table 4.** Inflation

Are your savings protected against current inflation?	Frequency	% valid	% accumulated
Yes, if I invest my money in financial products that provide me returns above inflation.	25	47.2	47.2
Yes, if the bank where I am saving informs me that I have high returns.	13	24.5	71.7
c) I don't know	15	28.3	100.0
Total	53	100.0	

Source: own

Table 5 presents the savings variable, based on four indicators: AeI5 (What is saving?), AeI6 (What is the main reason why you save or would save?), AeI7 (How do you determine what you save?) and AeI8 (When you have money left, what do you usually do with it?).

**Table 5.** Indicators of the Savings Variable

<i>AeI5</i>	Frequency	% valid	% accumulated
Save the money	13	24.5	24.5
Have money for emergencies	3	5.7	30.2
Have money for the future	11	20.8	50.9
Do not spend	2	3.8	54.7
Have money available	12	22.6	77.4
Have money in the bank	5	9.4	86.8
Economic security	7	13.2	100.0
Total	53	100.0	
<i>AeI6</i>	Frequency	% valid	% accumulated
Just save	2	3.8	3.8
Personal care	12	22.6	26.4
Retirement	19	35.8	62.3
Unemployment	11	20.8	83.0
Education	9	17.0	100.0
Total	53	100.0	
<i>AeI7</i>	Frequency	% valid	% accumulated
Save what is left over	11	20.8	20.8
Save to buy	10	18.9	39.6
Habit of saving	29	54.7	94.3

Not enough to save	3	5.7	100.0
Total	53	100.0	
<i>Ael8</i>	Frequency	% valid	% accumulated
Don't save	2	3.8	3.8
Don't have enough to save	5	9.4	13.2
Saving	26	49.1	62.3
Pay debts	13	24.5	86.8
Entertainment expenses	7	13.2	100.0
Total	53	100.0	

Source: own

The results indicate that 24.5 % think that saving is saving money, while 22.6 % considered that having money available was a better option and 3.8 % reasoned that the simple fact of not spending would be an adequate synonym for saving. While what would be expected as the right answer would be option A, it seems that they have a clear idea of what should be done to save. 35.8 % of respondents save for old age, 22.6 % save for personal expenses and 3.8 % only save it for no apparent reason.

54.7 % of the accountants surveyed said that they save for a habit they have acquired, however 5.7 % do not make enough money to do this practice. In relation to the use that is given to money when there are surpluses, we observe that 49.1 % of the sample saves it, 24.5 % allocates it to pay debts and 3.8% chooses to spend it.

Table 6 presents the main reason why these individuals save or would save. The result shows that 28.3 % choose to save it for old age, 22.6 % for emergencies and 20.8 % to attend to health problems.

**Table 6.** Saving

<i>Ael9</i>	Frequency	% valid	% accumulated
Health care	11	20.8	20.8
Emergency fund	12	22.6	43.4
Food	1	1.9	45.3
Housing	3	5.7	50.9
Education	5	9.4	60.4
Unemployment	2	3.8	64.2
Retirement	15	28.3	92.5
Personal care	2	3.8	96.2
Just save	2	3.8	100.0
Total	53	100.0	

Source: own

Table 7 shows the results related to the investment variable. Three indicators are analyzed: what is the main reason why you have never had or would not have a savings, deposit or investment account? What is an investment for you? And, where do you save your emergency savings?

**Table 7.** Indicators of the investment variable

<i>Investment10</i>	Frequency	% valid	% accumulated
Not enough money to save or invest	8	15.1	15.1
Not interested	2	3.8	18.9
Distrust	4	7.5	26.4

They ask many requirements	3	5.7	32.1
Interest rate is very low	25	47.2	79.2
Bank fees are very high	5	9.4	88.7
Initial deposit is high	4	7.5	96.2
I don't know how	2	3.8	100.0
Total	53	100.0	
<i>Investment11</i>	Frequency	% valid	% accumulated
Buy to get profits	12	22.6	22.6
Money in a business	2	3.8	26.4
Profits	4	7.5	34.0
Future benefit	12	22.6	56.6
Get the money work	13	24.5	81.1
Buy assets	2	3.8	84.9
Yields	8	15.1	100.0
Total	53	100.0	
<i>Investment12</i>	Frequency	% valid	% accumulated
Short term financial instruments	30	56.6	56.6
Long term financial instruments	9	17.0	73.6
I don't have emergency fund	14	26.5	100.0
Total	53	100.0	

Source: own

The results show that 47.2 % do not have or will have a savings or investment account because they considered that the interest rate is very low, however 3.8 % of the sample said they are not interested and an equal percentage that does not know how to invest. The results also show that the accountants surveyed, for the most part, have a correct concept of what it is to invest, although their responses were varied. 24.5 % say that it is to put money to work and 3.8 % agree that it is the act of buying goods or when money is available to start a business.

Finally, regarding investment options, 56.6 % responded that they prefer short-term liquid instruments, 26.5 % choose not to make savings and 17.0 % choose long-term instruments.

Tables 8 and 9 present results regarding the management that this population makes of a credit card.

**Table 8.** Credit card variable

MCT14		Frequency	% valid	% accumulated
	Never	7	13.2	13.2
	Sometimes	35	66.0	79.2
	Always	11	20.8	100.0
	Total	53	100.0	
MCT15		Frequency	% valid	% accumulated
	Ge into debt	18	34.0	34.0
	Do not pay and lose patrimony	8	15.1	49.1
	Pay a high interest rate	27	50.9	100.0
	Total	53	100.0	
MCT16		Frequency	% valid	% accumulated
	Yes	34	64.2	64.2
	No	19	35.9	100.0
	Total	53	100.0	
MCT16.1		Frequency	% valid	% accumulated
	1-2	25	47.2	47.2
	3-4	11	20.8	67.9
	More than 4	2	3.8	71.7

	I don't have credit card	15	28.3	100.0
	Total	53	100.0	
MCT16.2		Frequency	% valid	% accumulated
	Pay the total amount	26	49.1	49.1
	Pay a little more than the minimum	16	30.2	79.2
	Pay the minimum	11	20.8	100.0
	Total	53	100.0	
MCT17		Frequency	% valid	% accumulated
	To buy when there is no money	16	30.2	30.2
	To carry less cash	12	22.6	52.8
	Unforeseen	23	43.4	96.2
	Avoid assaults	1	1.9	98.1
	To buy in department stores	1	1.9	100.0
	Total	53	100.0	
MCT18		Frequency	% valid	% accumulated
	Cash	9	17.0	17.0
	Credit card	8	15.1	32.1
	Debit card	36	67.9	100.0
	Total	53	100.0	

Source: own

The results show in a global way that the sample surveyed presents an adequate level of knowledge in this subject.

The main findings have to do with the frequency with which it is customary to read or learn about this financial product (MCT14), in this case, 66.0 % get informed occasionally and 20.8 % perform this activity continuously, however, 13.2 % are never informed about the terms and conditions of their credit card showing the lack of interest in it. 50.9 % of the respondents perceive that the main risk of buying with a credit card (MCT15) is to pay high interest and 15.1 % consider that they may not pay and lose their assets.

64.2 % have a credit card (MCT16) and most of them (47.2 %) only have one or two cards. 28.3 % do not occupy this instrument (MCT16.1). When questioning about how they pay for purchases made with their credit card (MCT16.2), 47.2 % make the payment of the total amount and only 20.8 % choose to make the minimum payment.

Regarding the MCT17 indicator on what is the main advantage when using the credit card, 43.4 % say that it should be used for emergencies and 30.2 % considered it a useful instrument to be able to consume when there is no money available.

Finally, Table 9 shows that 67.9 % prefer to occupy their debit card while 17.0% choose to bring cash and 15.1 % opt for credit card management (MCT18).

**Table 9.** Credit card variable

MCT19		Frequency	% valid	% accumulated
	Bank branch	14	26.4	26.4
	ATM's	22	41.5	67.9
	Internet	17	32.1	100.0
	Total	53	100.0	
MCT20		Frequency	% valid	% accumulated
	Always	23	43.4	43.4
	Sometimes, unhelpful	21	39.6	83.0
	I don't know what the total annual cost is	9	17.0	100.0
	Total	53	100.0	
MCT21		Frequency	% valid	% accumulated
	No, I cancel the ones I don't use	40	75.5	75.5
	Yes, every card is useful	10	18.9	94.3

	I use all of them, I finance with some	3	5.7	100.0
	Total	53	100.0	
MCT22		Frequency	% valid	% accumulated
	Yes, I register it	41	77.4	77.4
	Sometimes I forget it	10	18.9	96.2
	No, I pay when I have money	2	3.8	100.0
	Total	53	100.0	
MCT23		Frequency	% valid	% accumulated
	Finance me 50 days without interest	23	43.4	43.4
	To cover unforeseen expenses	28	52.8	96.2
	To complete family spending	2	3.8	100.0
	Total	53	100.0	
MCT24		Frequency	% valid	% accumulated
	According to my needs	43	81.1	81.1
	It has an adequate TAC	8	15.1	96.2
	It gives me status	2	3.8	100.0
	Total	53	100.0	

Source: own

Table 9 shows the rest of the indicators used to measure the credit card variable. The MCT19 indicator shows that 41.5 % choose to carry out their operations through ATMs, 32.1 % have the possibility of doing them through the internet and 26.4 % prefer to go to the bank.

For item MCT20 on the choice of a credit, comparing the Total Annual Cost of each option, 43.4 % of the sample always indicates that this comparison is made in a timely manner, however, 17 % do not know what the TAC is. Regarding what the respondents do with the credit cards they do not use (MCT21), 75.5 % indicated that they cancel them, 18.9 % mention that they do not cancel them since at some point they may be useful and 5.7 % say they use them all as they finance the debts of other cards.

Regarding the payment date of their credit card (MCT22), 77.4 % said they keep a record in their calendar or add a notification on their cell phone so as not to forget it, although 18.9 % accepted that sometimes they forget causing them a commission payment and 3.8 % choose to pay it when they have money.

Finally, the indicators MCT23 and MCT24 show that 52.8 % consider that the credit card is more useful to cover unforeseen expenses, and in terms of choosing a card, they do this according to their needs and also because it has the most adequate TAC.

Finally, table 10 presents the results obtained on the knowledge that this group of professionals has about the budget variable. In this regard we can say that the result globally allows us to think that the level of understanding towards the subject is high.

**Table 10.** Budget

Pre25	Frequency	% valid	% accumulated
Yes	42	79.2	79.2
No	11	20.8	100.0
Total	53	100.0	
Pre26	Frequency	% valid	% accumulated
Yes	48	90.6	90.6
No	5	9.4	100.0
Total	53	100.0	
Pre27	Frequency	% valid	% accumulated
Yes	50	94.3	94.3
No	3	5.7	100.0
Total	53	100.0	

Source: own



As it can be seen, the frequencies of the cases in which they are accustomed to keeping track of their operations (debts, expenses, income and savings) were 79.2 %. 90.6 % said they knew how to make a budget and 94.3 % considered that they had an adequate budget and only 5.7 % said they failed to manage their expenses within their economic possibilities.

In this way the descriptive analysis is concluded, to give way now to the hypothesis test, for which, we start from the following data.

Starting from the assumption that:  $H_0: p = 0.5$  and  $H_1: p > 0.5$  we have:

To calculate  $\hat{p} = x/n$  we must look for the number of possible answers in each item. For this, those survey questions that allow identifying the knowledge that the surveyed accountants have towards the study variables based on the established hypotheses are selected. The summary of the correct and incorrect cases that will serve as a basis for the hypothesis contrast is shown in table 11:

As we can see in [Table 12](#), the results of the hypothesis test in all cases gave evidence for the rejection of the null hypotheses, that is, the respondents correctly answered in most cases the questions related to: calculation of interest rates, inflation, savings and investment, credit card management and budget.

Now, the result must be taken with a lot of caution, since the number of cases, in this case 53, turns out to be very low and we could not make a more generalizable inference. Although, due to its characteristics, it could be thought that the result seemed very predictable, however, it should not necessarily be so, since in a study by Moreno-García, García-Santillán and Tiburcio (2013) they found that students in this specialty of accounting, presented a low level of knowledge in these financial topics.

## 5. Conclusion

On the result of the descriptive study we can say in a general way that among the accountants who participated in the study there is an acceptable level of financial education. In most of the items analyzed, the responses ranged from regular to adequate, given the frequency of the responses to the correct options.

It should be noted that the theoretical-practical link is notorious in this surveyed population, that is, they have received university training in these subjects and apparently they are putting it into practice in their professional activity. It highlights, for example, the widespread use of a budget for the management of their finances, however, it became clear the ignorance that a significant percentage of the respondents had about the relationship between the interest rate and the price of bonds, the way to protect their savings from inflation and the efficient handling of a credit card.

The result obtained in the hypothesis test yielded sufficient evidence to reject the null hypotheses in all cases. This leads us to think that the group of accountants surveyed is very clear about how interest rates and inflation behave and how savings, investment, credit cards and budgets are managed. The result of this research coincides with the work of Contreras-Rodríguez, García-Santillán and Moreno-García (2017) who conducted a study in high school students who soon entered the financially adult age and identified that the perception they have about financial topics is good, however, the majority of students surveyed answered incorrectly on the subject of inflation. That is, students are unaware of the impact that inflation has on wages, salaries and pensions.

Results of this study, showing that this group of accountants have adequate level of financial education contrast with the low level of financial literacy found by researches in different populations over the world (Lusardi, Mitchell, 2011a, 2011b; Berhman et al., 2010). This could suggest that there is a difference between those who studied a program that provide mathematical skills and the understanding of basic economic and financial concepts and those who never studied that topics.

## 6. Limitations of the study

Case study facilitates the obtention of data and information and allows the analysis of a population with similar reasons and motivations. In this case, case study let the possibility to evaluated the level of financial education of graduates of public accounting program in Veracruz. Despite this, the sample size is recognized as a limitation of the study.

## 7. Further research and suggestion of future work

The results invite to evaluate financial education of accountants comparing different programs from where they graduated in order to identify the relationship between levels of financial education and the type subjects included in the programs they studied.

The literature argues that math abilities stimulate logical thinking and the capacity to solve problems, positively affecting long term planning and the understanding of financial terms. Another interesting research possibility is to compare the levels of financial education of populations graduated from different degree programs with different levels of math knowledge each.

## References

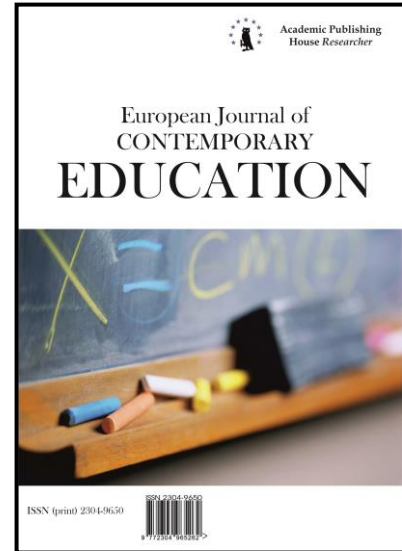
- Álvarez et al., 2011 – Álvarez, L., Páramo, T., Carpio J. (2011). De la Inclusión Financiera a la Intervención Social: Una Experiencia en el Sureste de México. *Nova Scientia*, 4. [Electronic resource]. URL: <http://corneey.com/wZHIwJ>
- Amezcuca et al., 2014 – Amezcuca, E., Arroyo, M., Espinosa, F. (2014). Contexto de la Educación Financiera en México. *Ciencia Administrativa*, 1. [Electronic resource]. URL: <https://bit.ly/2lQ2dPK>
- Arcos, 2010 – Arcos, G. (2010). La Educación Financiera y su Influencia en la Estrategia Crediticia del Productor Cañero en el Centro de Veracruz. (Tesis de Maestría en Ciencias). Colegio de Postgraduados, Veracruz. Disponible en: Colegio de Postgraduados, Tepetates, Ver.
- Atkinson, Messy, 2012 – Atkinson, A., Messy, F. (2012). Measuring Financial Literacy: Results of the OECD/International Network on Financial Education (Infe) Pilot Study, OECD Working Papers on Finance, Insurance and Private Pensions, 15. OECD Publishing. DOI: <https://doi.org/10.1787/5k9csfs90fr4-en>
- Babajic et al., 2018 – Babajic, A., Okicic, J., Kokorovic, M. (2018). Identification of Barriers to Financial Inclusion Among Youth. *International Business Research*, 11 (7). Published by Canadian Center of Science and Education. DOI: <https://doi.org/10.5539/ibr.v11n7p120>
- Banamex – UNAM, 2008 – Banamex – UNAM (2008). Primera Encuesta sobre Cultura Financiera en México. [Electronic resource]. URL: [https://www.banamex.com/compromiso-social/pdf/encuesta\\_corta\\_final.pdf](https://www.banamex.com/compromiso-social/pdf/encuesta_corta_final.pdf)
- Banamex – UNAM, 2014 – Banamex – UNAM (2014). Cultura Financiera de los jóvenes en México. [Electronic resource]. URL: <https://www.banamex.com/compromiso-social/pdf/culturafinancieradelosjovenes.pdf>
- Behrman et al., 2010 – Behrman, J., Mitchell, O., Soo, C., Bravo D. 2010. Financial Literacy, Schooling, and Wealth Accumulation. NBER WP.
- Contreras Rodríguez et al., 2017 – Contreras Rodríguez, B., García-Santillán, A., Moreno-García E. (2017). Nivel de conocimiento que tienen los alumnos de nivel medio superior en tópicos financieros sobre gasto y crédito, ahorro e inversión y la administración del dinero. *International Journal of Developmental and Educational Psychology*, 2 (1): 487-511. DOI: <http://dx.doi.org/10.17060/ijodaep.2017.n1.v2.962>
- Kharchenko, 2011 – Kharchenko, O. (2011). Financial Literacy in Ukraine: Determinants and Implications for Saving Behavior. (Thesis MA in Economics Kyiv School of Economics). [Electronic resource]. URL: <https://goo.gl/1ehvmW>
- Lusardi, Mitchell, 2008 – Lusardi, A., Mitchell O. (2008). Planning and Financial Literacy: How do Women Fare? National Bureau of Economic Research Working Paper No. w13750. DOI: <http://dx.doi.org/10.3386/w13750>
- Lusardi, Mitchell, 2009 – Lusardi, A., Mitchell, O. (2009). How Ordinary Consumers Make Complex Economic Decisions: Financial Literacy and Retirement Readiness. National Bureau of Economic Research 1050 Massachusetts Avenue Cambridge, MA 02138 September 2009. [Electronic resource]. URL: <https://tinyurl.com/y76a6ha3>
- Lusardi, Mitchell, 2014 – Lusardi, A., Mitchell, O. (2014). The Economic Importance of Financial Literacy: Theory and Evidence. *Journal of Economic Literature*, 52(1): 5-44. [Electronic resource]. URL: <https://bit.ly/2TZedBm>
- Lusardi, 2008 – Lusardi, A. (2008). Financial Literacy: An Essential Tool for Informed Consumer Choice? National Bureau of Economic Research Working Paper No. w14084. DOI: <http://dx.doi.org/10.3386/w14084>

- Lusardi, 2012** – Lusardi, A. (2012). Numeracy, financial literacy and financial decision-making. National Bureau of Economic Research Working Paper No. w17821. DOI: <http://dx.doi.org/10.3386/w17821>
- Lusardi, Mitchell, 2011a** – Lusardi, A., Mitchell O. (2011). Financial Literacy and Planning: Implications for Retirement Security and the Financial Marketplace. (A. Lusardi, and O. S. Mitchell, Edits.) Oxford: Oxford University Press.
- Lusardi, Mitchell, 2011b** – Lusardi, A., Mitchell O. (2011). Financial Literacy around the World: An Overview. *Journal of Pension Economics and Finance*, 10 (4): 497-508.
- Mandell, Schmid, 2009** – Mandell, L., Schmid, L. (2009). The impact of financial literacy education on subsequent financial behavior. *Journal of Financial Counseling and Planning*, Vol. 20, Is. 1. [Electronic resource]. URL: <http://ssrn.com/abstract=2224231>
- Montoya, 2005** – Montoya, P. (2005). Educación Financiera. Estudio aplicado a: Comisión Federal de Electricidad Zona Metropolitana Poniente. (Tesis de Maestría, Universidad Autónoma de Nuevo León). [Electronic resource]. URL: <https://bit.ly/2PPGcRV>
- Morales, Morales, 2014** – Morales, J., Morales A. (2014). Planeación financiera. Grupo Editorial Patria. [Electronic resource]. URL: <https://bit.ly/2EuqZPR>
- Moreno-García et al., 2013** – Moreno-García, E., García-Santillán A., Munguía J. (2013). Some Aspects About Financial Knowledge of Undergraduate Students. *International Journal of Management and Sustainability*, Vol. 2, Núm. 4, pp. 40-62. [Electronic resource]. URL: <https://bit.ly/2TBBsgt>
- Moreno-García et al., 2017** – Moreno-García, E., García-Santillán, A., Gutiérrez-Delgado L. (2017). Nivel de Educación Financiera en Escenarios de Educación Superior. Un Estudio Empírico en Estudiantes del Área Económico-Administrativa. *Revista de Investigación en Educación Superior* 8 (22): 163-183. Retrieved from: <https://bit.ly/2tVc1fa>
- OCDE, 2018** – OCDE, 2018. Effective financial education for sustainable and inclusive growth. 5th OECD-GFLEC Global Policy Research Symposium to Advance Financial Literacy de OECD Conference Centre. Paris, France. [Electronic resource]. URL: <https://www.oecd.org/daf/fin/financial-education/FinLit-Paris-2018-Proceedings.pdf>
- Power, 2018** – Power, C. (2018). Education development: Importance, challenges and solution. *The Student Economic Review*, 28. [Electronic resource]. URL: <https://www.tcd.ie>SER>colin-Pow>
- Rakow, 2019** – Rakow, K. (2019). Incorporating financial literacy into the accounting curriculum. *Accounting Education*, 1-17. DOI: 10.1080/09639284.2019.1578247
- Ramachandran, 2011** – Ramachandran, R. (2011). Financial Literacy – The Demand Side of Financial Inclusion, 26th SKOCH Summit 2011, Swabhimani-Inclusive Growth and Beyond 2nd & 3rd June, Mumbai, India. [Electronic resource]. URL: <https://ssrn.com/abstract=1958417> DOI: <http://dx.doi.org/10.2139/ssrn.1958417>
- Ramos-Hernandez et al., 2017** – Ramos-Hernandez, J., García-Santillán, A., Moreno-García E. (2017). Educación Financiera: Una Aproximación Teórica desde la Percepción, Conocimiento, Habilidad, y Uso y Aplicación de los Instrumentos Financieros. *International Journal of Developmental and Educational Psychology. INFAD Revista de Psicología*, 2(1): 267-278. DOI: <https://doi.org/10.17060/ijodaep.2017.n2.v2.888>
- Schuchardt et al., 2009** – Schuchardt, J., Sherman, H., Tahira, H., Lyons, A., Palmer, L., Jing, X. (2009). Financial Literacy and Education Research Priorities. *Ciencia Administrativa*, 1. [Electronic resource]. URL: <https://bit.ly/2ASDnaj>
- Shafii et al., 2018** – Shafii, Z., Shahwan, S., Salleh, S., Ibrahim, N., Arif, H., Alwi, K., Sopian S. (2018). Educating Children on Financial Management Using an Interactive Tool: A Case Study On Product Development Stages for Muamalat Interactive Game. *Reports on Economics and Finance*, 4(4): 159-171. DOI: <https://doi.org/10.12988/ref.2018.8115>
- Triola, 2004** – Triola, M. (2004). Estadística. Novena edición. Pearson Addison Wesley. México ISBN: 970-26-0519-9. [Electronic resource]. URL: <https://bit.ly/2U7mioE>
- Villagómez, 2014** – Villagómez, F. Alejandro (2014). El ahorro para el retiro. Una reflexión para México. *El Trimestre Económico*, 81 (3): 549-576. Fondo de Cultura Económica.



Copyright © 2019 by Academic Publishing House Researcher s.r.o.  
All rights reserved.  
Published in the Slovak Republic  
European Journal of Contemporary Education  
E-ISSN 2305-6746  
2019, 8(4): 841-854  
DOI: 10.13187/ejced.2019.4.841  
[www.ejournal1.com](http://www.ejournal1.com)

**WARNING!** Article copyright. Copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of the violation of the author(s) rights will be pursued on the basis of international legislation. Using the hyperlinks to the article is not considered a violation of copyright.



## **The Formation of the Eurasian Research-and-Education Ecosystem and the Internationalization of Educational Platforms: the Case of Russia and China**

Nina Pestereva <sup>a,\*</sup>, Sun Yuhua <sup>b</sup>, Mariya Belyakova <sup>c</sup>, Feng Jgin <sup>b</sup>

<sup>a</sup> Peoples' Friendship University of Russia, Moscow, Russian Federation

<sup>b</sup> Dalian University of Foreign Languages, Dalian, People's Republic of China

<sup>c</sup> Russian Presidential Academy of National Economy and Public Administration, Russian Federation

### **Abstract**

The object of this study is to assess the potential for the development of the Russian market for educational services as a component part of the present-day process of internationalization of science and higher education in the countries of Eurasia, above all China and Russia. The paper describes Russia's and China's unique unifying and coordinating role in the development of a common educational space, which must result in the creation of a Eurasian research-and-education ecosystem. The authors conducted an analysis of the current structure of the ecosystem. The authors conducted an analysis of the current structure of the education ecosystem. The authors conducted an analysis of the current structure of the sector of joint Russian-Chinese education institutions. The paper describes the current state of affairs regarding, and prospects for, the development of the government's digitalization program that is based on the concept of Digital 4.0, a paradigm that is increasingly becoming a natural environment for society to function and develop in. The authors explore some of the key trends and risks inherent in the development of the global market for educational platforms. The paper provides a rationale for the need to create a joint Russian-Chinese educational platform – one can hardly overestimate its role in the implementation of the Belt and Road Initiative transnational project. The study employed a set of traditional methods of research, including classification, comparative analysis, summarization, juxtaposition, and forecasting. In addition, it incorporates a sociological survey of students at Russia's leading universities. The authors made use of data from the Ministries of Education of China and Russia and various open-access statistics websites, as well as data from a sociological study of their own. The authors' assessments of the current potential of and trends exhibited by the Russian market for

---

\* Corresponding author

E-mail addresses: [pestereva-nm@rudn.ru](mailto:pestereva-nm@rudn.ru) (N. Pestereva), [13998484888@163.com](mailto:13998484888@163.com) (S. Yuhua), [belyakova-mu@ranepa.ru](mailto:belyakova-mu@ranepa.ru) (M. Belyakova), [job2009@126.com](mailto:job2009@126.com) (F. Jgin)



online education, as well as the fact that Russian students are interested in and prepared for active participation in online projects, helped put together a set of recommendations for boosting the competitiveness and efficiency of the Russian market for educational services and those for developing an international educational platform as part of the Eurasian educational ecosystem.

**Keywords:** Network University, research-and-education ecosystem, educational platform, e-learning education.

### **1. Introduction**

Issues related to internationalization and globalization in the global system of education, the interrelationship between them, and their characteristics have been explored in numerous works by Russian and foreign scholars (Filippov, Sun, 2015; Pestereva, Krechetnikov, 2016; Collins et al., 2017; Krechetnikov, Pestereva, 2017; Altbach, 2018; Ma, Zhao, 2018; Donetskaya, Zhan, 2019). These works analyze the multifaceted nature of the terms ‘internationalization of education’ and ‘globalization of education’, and show that the key subjects of the processes of internationalization and globalization are students, instructors, research associates, a university’s administrative staff and members of non-governmental organizations and associations, while their key objects are research studies, international joint educational programs, resources invested in international activity, the international service system, international enterprises, networks and partnerships, and intercultural exchanges.

Research indicates that Russia embarked on the path of education internationalization and globalization later than most of the leading world nations did. However, the Russian educational system has high potential and good prospects in terms of the development of international educational projects. The market for exported educational services has grown considerably, and currently Russian educational institutions are attended by nearly 240,000 foreign students. Russia is currently in the world’s top 6 for attractiveness for foreign students, and by 2025, based on projections from the UNESCO Institute for Statistics, the number of foreign students in Russia must increase to 710,000 (MESRE). However, it has been a failure trying to come across any official sources that would substantiate these figures. Based on which international projects and agreements, business processes, educational programs, and technologies will the nation be able to achieve promising results like those in the foreseeable future? A possible source of increase in the number of foreign students in Russia is the CIS, BRICS, and SCO Network Universities (Pestereva, Kholina, 2019), with Russia and China playing a key role in this area (Project 5-100, 2019; Decree, 2017). At present, the process of internationalization of Chinese education takes on the following forms: sending Chinese students and instructors abroad; enlisting foreign instructors, professors, and research associates; attracting foreign students into China, both at one’s own expense and via a vast system of grants; developing joint educational programs in association with foreign colleges; implementing a system of double diplomas; implementing a system of modular learning abroad; implementing the use of foreign textbooks and bilingual curricula in the educational process; setting up foreign language centers (MEC – Ministry of Education of China).

Education globalization and the role of Network Universities. Globalization in the area of education has taken on the form of international integration based upon the convergence of the education systems, their inter complementarity, and their interdependence (Pestereva, Krechetnikov, 2016; Sun, 2017). In a climate of globalization, the system of higher education can directly and indirectly contribute to the development of national, regional, and global strategies on creating a globally-competitive services sector as a new value-base for the developed economies (Wu, Zha, 2018). In October of 2019, China celebrated two major events – the 70th anniversary of the founding of the People’s Republic of China and the 70th anniversary of the establishment of diplomatic relations between Russia and China. It is worth noting that over the last decade the process of education internationalization between the two nations has developed not only actively but quite effectively as well, which can be illustrated by the following accomplishments: creation of the Shanghai Cooperation Organisation Network University (SCOU, 2011), the BRICS Network University (2014), joint educational institutions (JEIs), joint educational programs (JEPs), and joint research-and-education clusters (IRECs); expansion of the geography of colleges participating in the implementation of joint Russian-Chinese programs; development of academic mobility; implementation of research projects.



1.1. The current structure of the BRICS Network University. Russian and Chinese BRICS Universities Participating are presented in Table 1. The BRICS seeks to develop joint initiatives in education and through network implementation of collaboration Master and PhD programs, short courses and seminars for students, conferences and joint publications. All joint actions of the BRICS in education and research are aimed at: contributing to the production of knowledge relevant to the betterment of living conditions in BRICS countries; achieving open architecture of programs in interdisciplinary research areas and educational programs; suggesting innovation and outstanding courses only; designing new competencies for professionals in BRICS countries; integrating methods and discipliners from humanities and social sciences (<https://nu-brics.ru>).

**Table 1.** Russian and Chinese Universities Participating in the BRICS Network University

Russian universities	Chinese universities
1. Moscow State Institute of International Relations (MGIMO University)	1. Fudan University (复旦大学)
2. Lomonosov Moscow State University	2. Zhejiang University (浙江大学)
3. Moscow Institute of Physics and Technology	3. Hunan University (湖南大学)
4. MISiS National University of Science and Technology	4. Jilin University (吉林大学)
5. National Research Tomsk Polytechnic University	5. Sichuan University (四川大学)
6. Higher School of Economics	6. Huazhong University of Science and Technology (华中科技大学)
7. Moscow Power Engineering Institute	7. Beijing Normal University (北京师范大学)
8. National Research Tomsk State University	8. Southwest University (西南大学)
9. Peoples' Friendship University of Russia	9. Henan University (河海大学)
10. Saint Petersburg State University	10. Northeast Forestry University (东北林业大学)
11. Saint Petersburg National Research University of Information Technology, Mechanics, and Optics (ITMO University)	11. North China University of Water Resources and Electric Power (华北水利水电大学)
12. Ural Federal University named after the First President of Russia B.N. Yeltsin.	12. Harbin Institute of Technology (哈尔滨理工大学)

Joint educational institutions of China and Russia. Based on data from the website of China's Ministry of Education, China is currently home to a total of four Chinese-Russian joint educational institutions (displayed in the order created): (1) Jiangsu Normal University–Peter the Great St. Petersburg Polytechnic University; (2) Beijing Normal University–Lomonosov Moscow State University; (3) Weinan Normal University–Moscow State Pedagogical University; (4) International Arts Institute of Harbin Normal University–Surikov Moscow State Arts Institute.

1.2. Joint educational institutions of China established in association with foreign partners. In addition to those listed above, China is home to eight joint educational institutions with legal-person status (Table 2) and 72 joint educational institutions without legal-person status.

**Table 2.** China's Major Joint Educational Institutions with Legal-Person Status

Name of the joint educational institution	Partners	Year established
University of Nottingham Ningbo China (宁波诺丁汉大学)	Zhejiang's Wanli Education Group; University of Nottingham (UK)	2005
Beijing Normal University–Hong Kong Baptist University United International College (北京师范大学 - 香港浸会大学联合国际学院)	Beijing Normal University; Hong Kong Baptist University	2005
Xi'an Jiaotong University–Liverpool University (西交利物浦大学)	Xi'an Jiaotong University; Liverpool University (UK)	2006
New York University Shanghai (上海纽约大学)	East China Normal University of Shanghai; New York University (USA)	2012
Duke Kunshan University (昆山杜克大学)	Wuhan University; Duke University (USA)	2013
Kean University Wenzhou (温州肯恩大学)	Wenzhou University; Kean University (USA)	2014
Chinese University of Hong Kong, Shenzhen (香港中文大学(深圳))	Shenzhen University; Chinese University of Hong Kong (Hong Kong)	2014
Guangdong Technion-Israel Institute of Technology (广东以色列理工学院)	Shantou University (汕头大学); Israel Institute of Technology (Israel)	2015
Shenzhen MSU-BIT University (深圳北理莫斯科大学)	Beijing Institute of Technology; Lomonosov Moscow State University (Russia)	2017

The countries currently engaged in educational activity in China include the UK (19 educational institutions), the US (15), France (11), Germany (9), Australia (6), Hong Kong (5), Russia (4), and South Korea (3). With each of the following nations China has one joint educational institution in place: Ireland, Poland, Japan, Holland, Taiwan, Canada, Israel, New Zealand, Denmark, Belgium, and Finland. Also, there are two trilateral educational institutions in place: (1) an institution formed between China, the US, and the UK; (2) an institution formed between China, the US, and Canada.

In the last decade, competition in China's educational market has stiffened as a result of the emergence of "strong players" in it. To be able to expand the sphere of their influence upon the Chinese market for educational services, the Russians need to develop new strategies that will help boost their competitive edge and ensure the provision of quality education and attraction of Chinese students.

1.3. In February of 2019, the Russian government adopted the Strategy for Spatial Development ([Resolution, 2019](#)). It covers a set of regions' economic specializations which it has been recommended to take into account in putting together federal and local target programs. There are plans to create, by facilitating cooperation between science institutions and educational organizations of higher learning and the business sector, including by way of setting up new ones, no fewer than 15 world-class research-and-education centers, which in the Russian Federation will bring together educational organizations of higher learning and science institutions, research centers (including mathematics and genome-related ones), centers running as part of the National Technological Initiative, as well as innovation-focused scientific-technological centers. These plans envisage creating and developing, based on this kind of world-class research-and-education centers

and innovation-focused scientific-technological centers, a cutting-edge research-and innovation infrastructure which will incorporate a number of unique, MegaScience-type, research facilities (<http://government.ru/projects/selection/740/35565/>).

1.4. Another major project with a regional focus is a state project known as ‘Flagship Universities in the Regional Economic Systems’. At present, the project involves 33 colleges, mainly institutions with a technical or technological specialization. The mission of a university of this kind is to facilitate the innovation-driven development of enterprises within the real sector of the regional economy based on advanced training of manpower for the regions, factoring in transformations in their needs for manpower and for innovative technology. Certain researchers (Ivanov, Sokol-Nomokonov, 2018) are of the view that this government program must result in a system of integrated educational and scientific space in the regional, interregional, and international aspects that will help ensure the stable operation and development of the economy in every region of Russia. Major significance is attached to issues of networked interaction among technical, pedagogical, and medical colleges, with a focus on speeding up integrated innovation-driven development in the regions.

1.5. In the last decade, as part of the process of education internationalization, the Eurasian space has witnessed the establishment of several network universities (the CIS, BRICS, and SCO Network Universities), a few dozen international joint educational institutions (e.g., those in China), a number of regional and near-border educational and scientific-technological clusters, and a number of international specialized clusters (e.g., those focused on culture and arts), etc. The result of this close international cooperation was the creation of a modern Eurasian scientific and educational ecosystem.

As commonly known, the terms ‘ecosystem’ and ‘ecosystemic approach’ emerged in the mid-20<sup>th</sup> century in the Earth sciences (geophysics, geoecology, and biology), and were later adopted by sociologists and economists. Afterwards, in 1993, economist James F. Moore (Moore, 1993) introduced the term ‘business ecosystem’. The business-ecosystemic approach helps achieve better-quality and more credible assessments of parameters for the development of the socio-economic environment in all its diversity by focusing primary attention on a specific spatial-temporal context. This makes it possible to take account, in a dynamic and integrated fashion, of the following: the nature of interaction between economic and social agents; models of their business, investment, and innovation activity; their relationship with the natural environment; their relationship with the surrounding operational environment – the business ecosystem. Today, the term ‘educational ecosystem’ is used widely at both the international and national (and regional) levels (Kondakov, 2019 and etc.).

1.6. Internationalization of Educational Platforms. Online educational projects within the system of international education. In 2012, online learning was recognized in Russia as a form of education that can be employed as part of higher education programs (Federal Law..., 2012). This made it possible to officially grant distance learning program graduates the same kind of state diploma as the one granted to full-time students. It is known for a fact that combining school with major-related work helps boost a graduate’s competitiveness in the labor market, as that helps acquire additional competencies in the actual workplace (MESRF, 2019).

Based on data from certain experts, Russia is currently experiencing a boom in the development of online technology, not only based on domestic educational platforms but foreign ones as well. Already today there are over 100 foreign companies operating in Russia that provide instruction by way of electronic technology, with their clientele currently numbering over 350,000 Russian citizens. At present, nearly 90 % of all educational institutions around the world are prepared to provide instruction in online form. Unfortunately, in this area Russia is five-to-seven years behind the rest of the world at the moment (<http://hr-media.ru/19-krupnejshih-rossijskih>). A possible way to boost the competitiveness of the internal and external markets for educational services is to develop online learning – as a variety of the latest digital technology which includes the Internet of Things (IoT), Big Data, AR and VR technology, etc.

The findings from a survey of the Russian market for online education indicate that most users are in the 16–19-years age group. This is testimony that in the near future for prospective students who finished high school during the Industry 4.0 era digital technology will be a natural environment to live and develop in. It is quite logical to venture the assertion that digital-era

prospective students will make their choice in favor of educational institutions that will be able to offer them a wider spectrum of various educational online programs and particular online courses.

Russian colleges which are key players in Russia's present-day market for online education technology. These, above all, are Lomonosov Moscow State University (based on the Universarium platform); Higher School of Economics (based on the National Platform for Open Education); Saint Petersburg State University; Moscow Institute of Physics and Technology (based on the Coursera platform); Russian Presidential Academy of the National Economy and Public Administration (based on the Uniweb and Hexlet platforms).

Some Russian universities are keenly creating content of their own for online courses that are based on the Coursera international educational platform. For instance, over the last six months the Higher School of Economics has launched as many as 12 educational courses, which have drawn over 100,000 enrollees. This is five times the number of full-time students attending the school's Moscow, Nizhny Novgorod, Saint Petersburg, and Perm branches (<https://elearning.hse.ru/mooc>).

Another argument in favor of creating a new educational platform for the SCO Network University is the findings from a study by a group of research associates and professors at Lomonosov Moscow State University (Anosov, Bryzgalina, 2018). The study has helped accomplish the following: (1) explore comparative statistics related to implementing online learning technology in the educational process; (2) establish the key differences between the domestic and foreign online learning systems; (3) establish some of the potential risks inherent in the use of foreign educational platforms within the Russian system of education.

## **2. Materials and methods**

2.1. The work's source information is grounded in open data from the official websites of universities in Russia and China, national websites on education, articles from journals indexed in WoS and Scopus, and a scientific electronic library built based on the Open Science paradigm.

2.2. The authors also made use of data from the websites of the following organizations:

- Ministry of Education of China (<http://www.crs.jsj.edu.cn/index>);
- Shanghai Cooperation Organisation University in China ([www.usco.edu.cn](http://www.usco.edu.cn));
- Shanghai Cooperation Organisation University in Russia (<http://uni-sco.ru>);
- Ministry of Education and Science of the Russian Federation

(<https://minobrnauki.gov.ru/ru/activity/statan/stat/highed>);

- National Bureau of Statistics of China

(<http://www.stats.gov.cn/english/Statisticaldata/AnnualData>).

2.3. To study the attitude of Russian students to the model of online learning, the authors conducted a sociological study in the form of questionnaires. First of all, the authors were interested in students' awareness of the existence and possibility of obtaining education or individual courses on the basis of online platforms. The questionnaires were compiled by professors N.M. Pestereva (PFUR, Russia) and Sun Yuhua (DUIA, PRC).

2.4. The work employed a set of traditional methods of research, including classification, comparative analysis, summarization, juxtaposition, and forecasting.

2.5. To ensure the veracity of the results, the authors employed statistical analysis. The significance level (p-value) was calculated for each correlation using Pearson's  $\chi^2$  test (Chi-square Goodness of Fit tests).

## **3. Results**

Globalization in the area of education has taken on the form of international integration based on the convergence of the education systems, their inter complementarity, and their interdependence (Dreval, 2018; Guruleva, Bedareva, 2019). In a climate of globalization, the system of higher education can directly and indirectly contribute to the development of national, regional, and global strategies on creating a globally-competitive services sector as a new value-base for the developed economies. The number of participants in the educational process is constantly growing, with new joint educational programs and research projects getting implemented, the process of the academic mobility of students, instructors, and educational programs gaining momentum, new forms and types of knowledge transfer emerging, the learning process getting transformed, and cross-border cooperation expanding (Research..., 2019).



A result of these transformations and innovations is the creation of new educational platforms **which** will be seen as an innovative form of organizing the learning process **involving** the use of online learning technology and resources associated with distance, open, electronic, networked, and virtual (AR and VR-based) learning technology (Pestereva et al., 2019). In the view of a group of researchers from Lomonosov Moscow State University (Anosov et al., 2018), mankind is currently witnessing the emergence of a new economic paradigm – Industry 4.0. Today, the global market for educational platforms, as an innovative form of organizing the learning process, is developing at a rapid pace, with many phenomenal vistas of opportunity opening up along the way. At the same time, the process of creation and adaptation of a new learning platform is attended by a number of risks which are based on the equivocal nature of their long-term cumulative effect, as projected through the prism of the cultural, humanitarian, socio-economic, and other dimensions of social life.

Foreign educational platforms are currently used in the Russian education system for the following key reasons:

- to help familiarize students and instructors with top international scientific schools (65 %);
- to help promote Russian educational programs within the international educational space (30 %);
- to help implement in the nation's educational space the latest teaching concepts and ensure the implementation of top learning courses by way of online learning (36.7 %);
- to get to know various Russian scientific schools and search for and select talented youth (15 and 13.3 %, respectively).

At the same time, there are a number of possible threats and risks that are inherent in the use of foreign educational programs, which are as follows:

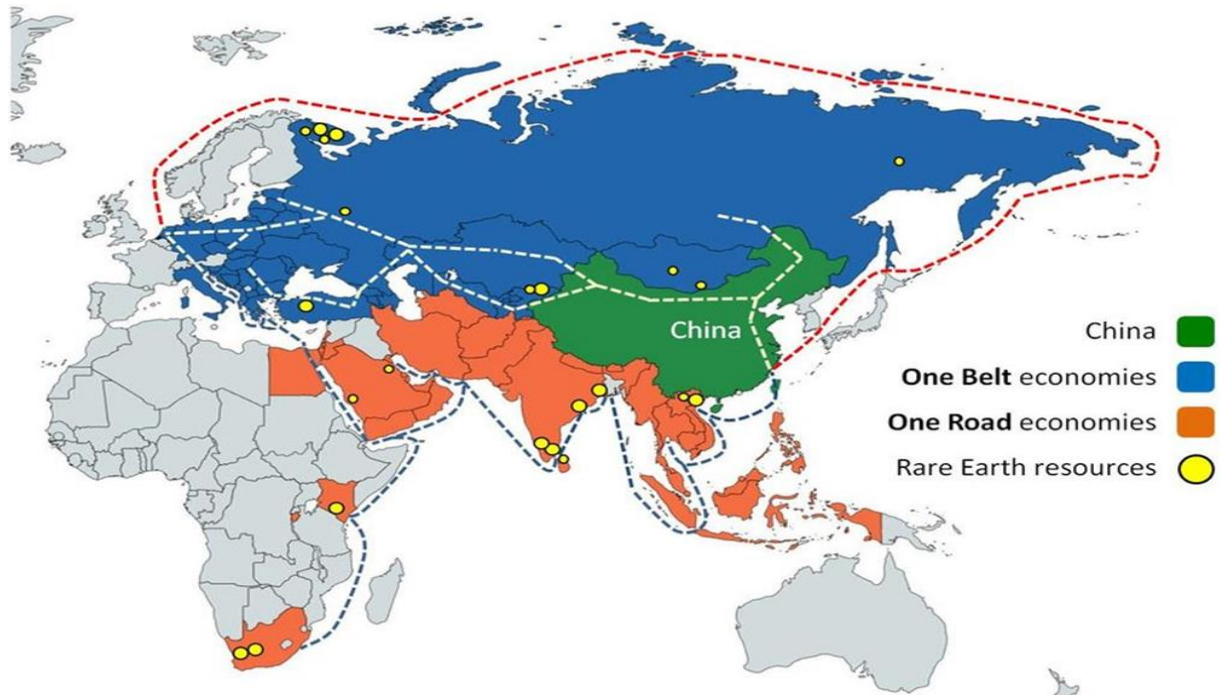
- traditional learning modules getting mechanically converted to distance learning format, with the focus shifting to the development of online courses;
- content-related risks (e.g., the course's content and design, insufficient depth of knowledge, lack of the ability to discuss an issue, etc.);
- socio-economic and political risks (e.g., the risk of the pedagogical load being redistributed in the direction of increase, changes in the role of the instructor, personal data issues, etc.);
- socio-psychological and pedagogical risks (e.g., incorrect forms of control, problems with motivating one to study, and declines in the value of knowledge, etc.);
- organizational-managerial risks (e.g., insufficient control of knowledge, technological risks, longstanding principles of classic pedagogy getting stifled, etc.);
- threat of the use of the Russian language getting suppressed in the domestic educational space and that of a brain-drain of the nation's more talented youth to other countries;
- unfair competition, unsubstantiated preferences in favor of the use of foreign systems, etc.

While the implementation of online learning is a global process, there is, however, a concern that fostering all-out openness and adopting uniform global standards may result in the loss of the very traditions in particular scientific schools which, combined, have formed the basis of basic education in a nation (Romanova, Gasanova, 2017). A group of researchers at the RANEPa's Federal Institute for the Development of Education led by V.I. Blinov (Blinov et al., 2019) and researcher V.V. Korovkin, of the Skolkovo business school (Korovkin, 2019), have suggested that the current transformation of the educational process taking place as a result of the Digital 4.0 revolution implies changes in the activity of students and instructors and the creation of a digital educational environment and will naturally require new forms of methodological and instructional support. At the same time, the processes of creation and adaptation of a new educational platform come with a number of risks associated with the equivocal nature of their long-term cumulative effect, as projected through the prism of the cultural, humanitarian, socio-economic, and other dimensions of social life.

The Eurasian research-and-education ecosystem (EREES), which brings together peoples with a common culture of long standing, common national values, a common mentality, and a common aspiration toward sustainable socio-economic development in their regions (Figure 1) and is oriented toward resolving both regional investment-related (Decree, 2018) and national (Decree, 2017) and cross-border projects and programs, including the global transnational project 'Belt and Road Initiative' (International Students (2019), Joint Statement (2015) has all it takes to develop an online learning platform of its own. This should help pool resources and design a single



integrated strategy for the implementation of online education in the SCO Network University, which, in turn, should help boost the competitiveness of the SCO, CIS, and BRICS Network Universities in the Eurasian market for educational services.



**Fig. 1.** Flowchart Belt and Road Initiative participating economies and transportation corridors

In the first stage, the pilot project will involve the creation of an educational platform that will feature the more keenly cooperating Russian Chinese colleges that are part of the SCO Network University. Below are some of the key principles that form the basis for ensuring the high quality of online-courses offered as part of a new educational platform:

- ensuring conformance with requirements set out in the state educational standards established by Russia’s Ministry of Education and Science and China’s Ministry of Education;
- researching the mechanics and characteristics of the market for exported educational services in both countries;
- conducting a segmentation of the market for educational services;
- in putting together priority joint educational programs, one must take account of recommendations and expert assessments from employers implementing transnational projects;
- a possible basis for developing real online courses is the outcomes from scholarly and ranking-based research on demand for joint educational programs;
- preference is mainly given to joint educational programs that offer two diplomas (bachelor’s and master’s degrees), as well as joint programs on the retraining and advanced training of personnel from key countries participating in the Belt and Road Initiative transnational project;
- special consideration will be given to the quality and effectiveness of online courses, as well as procedures for assessing the learning outcomes;
- online courses will be designed by top instructors at each college;
- the quality of the learning material will be guaranteed based on the outcomes from internal examinations conducted at a college participating in the pilot project or research by a joint international assessment center;
- assessment aids will undergo examination by an educational-and-methodological association, while user identification will be done via proctoring or biometric technology;
- special consideration will be given to the development of two-diploma programs for students attending a partner college and willing to receive a diploma from a university (or a secondary vocational institution) in the country which they are a resident of;

- following the quality assessment procedure, online courses offered via the new educational platform will be recommended for inclusion in the individual learning plans of students at any college in Russia or China;
- there are plans to develop interactive online courses based on the use of AR and VR technology;
- online courses offered via the new educational platform will be developed in Russian and Chinese, and later they will be translated into the language of each nation participating in the SCO Network University;
- the project will be oriented toward wide cooperation between Russian and Chinese partner universities.

It may be worth providing those willing to have an online course credited while pursuing a bachelor's or specialist's degree at a college with the opportunity to receive a special certificate as part of a project implemented by Russian and Chinese colleges. It could be possible to grant this kind of certificate to a student if they meet a set of requirements related to taking the online course (e.g., student identification checks and control over compliance with the terms and conditions for the activities). It could also be possible to let one receive certificates from two universities – a Russian one and a Chinese one.

Organization and results of the sociological study. Of interest is the degree to which students are aware of, interested in, and prepared for learning by way of the online course system. To assess it, the study incorporated a short survey of students pursuing Bachelor's and Specialist's degrees in Economics at two Russian universities. The survey engaged a total of 80 students, 40 from each college.

It should be noted that the creation of the CIS, BRICS, and SCO Network Universities has provided a substantial impetus for the process of internationalization of higher education in the countries participating in these international projects. A project that has facilitated major boosts in the mobility of students, instructors, and educational programs (Pestereva, Kholina, 2019) is Russia's 5-100 Project. This undertaking has helped enhance the competitiveness of the Russian market for exported educational services in the international arena. However, the results are far from desired for now. Today's trends in the development of the process of education internationalization are indicating a steady focus on the use of e-learning (online learning) technology in the educational process with all forms of learning. As evidenced by the experience of foreign educational institutions, as well as that of top universities in Russia (e.g., Moscow State University, Higher School of Economics, and Russian Presidential Academy of the National Economy and Public Administration under the President of the Russian Federation), online learning is in demand today within the higher education system (Anosov, 2018). Success in implementing online learning requires the availability of one's own resources or access to recognized international educational platforms.

What potentially can help enhance the competitiveness of universities within the Eurasian educational ecosystem, where a key role is being played by Russian and Chinese colleges, is a single educational online platform. This paper represents an attempt to assess the degree to which Russian students are aware of, interested in, and prepared for learning by way of the online education system. To this end, the study incorporated a sociological survey of students pursuing Bachelor's and Specialist's degrees at the Peoples' Friendship University of Russia (the Department of Economics) and the Russian Presidential Academy of the National Economy and Public Administration under the President of the Russian Federation (the Institute of Finance and Sustainable Development). The questionnaire-based survey engaged a total of 80 individuals (40 from each institution). The queries in the questionnaire were designed by Professor N.M. Pestereva.

The outcomes appear to be quite promising. Most Russian students are familiar with the term 'online education' (90 % of the respondents), with around a third of them aware of the Russian system of and Russian platforms for online learning (Table 3). Having said that, 60 % of the respondents are not familiar with foreign online systems and platforms. Almost half of the respondents (49 %) are interested at least in partial use of online courses offered by the educational institution they go to.

**Table 3.** Degree to Which Russian Students are Aware of and Interested in for Learning by Way of the Online Learning System

No.	Question	Possible respondent answers				
		Yes	Rather 'Yes'	Undecided	Rather 'No'	No
1	Are you familiar with the term 'online learning'?	72	5	0	3	0
$H_j^i$		$H_1^{0.01}, \chi^2 emp = 246.126; \chi^2 0.01 = 13.27$				
2	Are you familiar with the Russian system of online learning?	27	19	5	21	8
$H_j^i$		$H_1^{0.01}, \chi^2 emp = 21.25; \chi^2 0.01 = 13.27$				
3	Are you familiar with any Russian platforms for online learning:	29	15	13	11	12
$H_j^i$		$H_1^{0.01}, \chi^2 emp = 21.25; \chi^2 0.01 = 13.27$				
4	Are you familiar with any foreign system of online learning?	9	11	5	9	46
$H_j^i$		$H_1^{0.01}, \chi^2 emp = 71.50; \chi^2 0.01 = 13.27$				
		Yes	Rather 'Yes'	Undecided	Rather 'No'	No
5	Are you interested, at least partially, in taking online courses provided by your educational institution?	39	7	23	7	4
$H_j^i$		$H_1^{0.01}, \chi^2 emp = 55.25; \chi^2 0.01 = 13.27$				
6	Are you interested, at least partially, in taking online courses provided by other educational institutions?	28	9	9	13	21
$H_j^i$		$H_1^{0.01}, \chi^2 emp = 17.25; \chi^2 0.01 = 13.27$				

Over half of the students surveyed (52 %) believe that the system of online courses will enable them, during the period of their study via the core curriculum, to get a second higher education diploma, a diploma of professional retraining, or a diploma of advanced training, including from a foreign partner college (Table 4). The form of study can vary (e.g., internal study mode, external study mode, and blended study mode).

**Table 4.** Degree to Which Russian Students are Prepared for Learning by Way of the Online Learning System

No.	Question	Yes	Rather 'Yes'	Undecided	Rather 'No'	No
1	Are you prepared to receive education by way of online learning?	18	13	5	19	25
$H_j^i$		$H_1^{0.01}, \chi^2 emp = 14.00; \chi^2 0.01 = 13.28$				
2	Do you see promise in the use of the online learning system?	42	0	23		15
$H_j^i$		$H_1^{0.01}, \chi^2 emp = 77.37; \chi^2 0.01 = 13.27$				

Note. Acronyms in Tables 3 and 4: results from the authors' survey of students at the Peoples' Friendship University of Russia and the Russian Presidential Academy of the National Economy and Public Administration under the President of the Russian Federation.

Designations in [Tables 3](#) and [4](#):  $H_j$  – null hypothesis ( $j = 0$ , difference between the distributions is not statistically significant,  $H_0$ ;  $j = 1$ , difference between the distributions is statistically significant,  $H_1$ );  $\chi^2_{emp}$  – empirical frequency,  $\chi^2_{0.05}$  – critical value of the theoretical frequency, significance level  $P = 0.05$ ;  $\chi^2_{0.01}$  – critical value of the theoretical frequency, significance level  $P = 0.01$ .

Since the samples were not large enough, statistical analysis was employed so as to ensure the veracity of the results. The significance level (p-value) was calculated for each correlation using Pearson's  $\chi^2$  test (Chi-square Goodness of Fit tests). As commonly known, the difference between two distributions can be regarded as significant if  $\chi^2_{emp}$  is equal to or greater than  $\chi^2_{0.05}$ , and it is all the more significant if  $\chi^2_{emp}$  is equal to or greater than  $\chi^2_{0.01}$  (the  $H_1$  hypothesis). The distribution of  $\chi^2$  statistics does not depend either on the expected value of the chance quantity  $X$  or the dispersion  $\sigma^2$  but depends just on the size of the sample  $N$ . The results from the authors' assessment of the null hypothesis based on Pearson's chi-squared test ([Table 3](#) and [Table 4](#)) are quite satisfactory and, thus, confirm the advisability of taking the approach adopted by them.

Currently, the best-known and most recognizable Russian educational platform among Russian students is Open Education, with Khan Academy and Coursera taking the cake among the foreign ones. Many Russian students are prepared right now to receive basic education via online technology. As evidenced by the survey's results, some do not rule out the possibility of going for a second education, including a Master's degree by way of blended or external study mode, with elements of online learning technology.

As evidenced by earlier research into the subject, one of the commonest forms of student mobility today is that of students who are actively engaged in sports, are keen on arts, take an active part in various contests and Olympiads for talented youth, and engage in volunteering activity ([Pestereva, 2015](#)). Students of this kind tend to be successful and rank high academically. The availability of online courses in educational institutions will help open new vistas of opportunity for students. Anywhere around the globe will they be able to make use of electronic learning aids, complete their assignments on time and in line with the curriculum, and, based on a set of assessment criteria, get an objective grade for their knowledge. If desired, a student can receive a special certificate.

Online courses will enable students to design on their own an individual learning path within colleges partnered with network universities and the Eurasian research-and-education ecosystem as a whole, which will make it possible for them to engage, without detriment to the core learning process, in cognitive, sports, cultural, and social mobility, as well as work activity.

#### **4. Discussion**

The active processes of internationalization and globalization of higher education witnessed over the last few decades and trends toward the creation of network universities, which bring together various nations and peoples, have resulted in the emergence of national and international research and education clusters. The implementation of one of the major global cross-border projects, China's Belt and Road Initiative, has resulted in the creation of the Eurasian research-and-education ecosystem, which brings together universities and educational institutions across a number of nations and entire continents – Asia, Europe, America, and Africa. Today, there is a unique opportunity to capitalize on pooling resources, knowledge, innovations, and technologies. Based on data from the UN, at present nearly 90 % of all educational institutions around the world are capable of offering online education in various forms. At the moment, in Russia education by way of electronic technology is provided by over 100 foreign companies, with their clientele numbering over 350,000 Russian citizens.

As our pilot case study showed, the Russian student community as a whole is ready to master modern digital education technologies.

#### **5. Conclusion**

The key trends in the development of the global and Eurasian market for online learning include mobile education and integration with social services. The rapid development of the market for smartphones, PDAs, and tablet PCs is helping generate new innovative ideas and technologies, which includes plans for the keen use of AR and VR technology within the educational environment. As evidenced by a set of sociological surveys of Russian students at colleges within



**the CIS, BRICS, and SCO Network Universities** (the Eurasian educational ecosystem), most students are interested in and prepared for receiving education, either in part or in full, in online form. A noteworthy fact is that many students who currently are being taught without the use of online course technology have displayed quite a high degree of knowledge about domestic and foreign educational platforms. Nearly 40 % of the respondents are, to one degree or another, knowledgeable about major Russian educational online platforms, while 11% are familiar with foreign ones. Over half of the students surveyed (52 %) consider the online learning system to be promising and are prepared to be educated this way.

Thus, the availability of a cross-border, multinational Eurasian research-and-education ecosystem, existing trends in education (including those based on Industry 4.0), as well as the willingness and preparedness of youth and students to employ in their individual educational process various models, forms, and types of online education, provide the basis for speeding up the process of designing a general concept and implementing a pilot project on the development of a new educational platform, one that will be known as ‘Eurasia’.

## **6. Acknowledgements**

The publication has been prepared with the support of the “RUDN University Program 5-100”. The research reported in this paper was produced with financial support from the Ministry of Education and Science of Russian Federation as part of a program designed to improve the competitiveness of People’s Friendship University of Russia among the world’s leading research-and-education centers in the period 2016–2020. Authors participation: concept, research design, text writing and editing: professor N.M. Pestereva and professor Sun Yuhua; collection and processing of materials – graduate student Feng Jing.

## **References**

- Altbach, 2018** – *Altbach, F.J.* (2018). *Global Prospects for Higher Education*. M.: HSE Publishing House, 2018. [Electronic resource]. URL: [https://link.springer.com/chapter/10.1007/978-3-319-77407-7\\_7](https://link.springer.com/chapter/10.1007/978-3-319-77407-7_7)
- Anosov, Bryzgalina, 2018** – *Anosov, A.A., Bryzgalina, E.V., Savina, N.E., Tumanov, S.V.* (2018). [Foreign Learning Platforms in Russian Education System: Potential Capacity Evaluation and Risks Forecasting]. *Vysshee obrazovanie v Rossii*, 27(8-9): 135-151. [Electronic resource]. URL: [https://vovr.elpub.ru/jour/article/view/1459?locale=en\\_US](https://vovr.elpub.ru/jour/article/view/1459?locale=en_US)
- Blinov et al., 2019** – *Blinov, V.I., Dulinov, M.V., Yesenina, E.Yu., Sergeev, V.S.* (2019). Draft didactic concept of digital vocational education and training. [Electronic resource]. URL: [https://firo.ranepa.ru/files/docs/proekt\\_didakticheskoy\\_koncepcii.pdf](https://firo.ranepa.ru/files/docs/proekt_didakticheskoy_koncepcii.pdf) (date of access: 21.09.2019). [in Russian]
- Collins et al., 2017** – *Collins, F., Ho, K., Ishikawa, M., Ma, A.* (2017). *International Student Mobility and After-Study Lives: the Portability and Prospects of Overseas Education in Asia*. [Electronic resource]. URL: <https://researchspace.auckland.ac.nz/handle/2292/33305> (date of access: 26.07.2019).
- Decree, 2017** – Decree of the President of the Russian Federation No. 13 On Ratifying the Foundations of State Policy on Regional Development in the Russian Federation for the Period through to 2025 of January 16, 2017. [Electronic resource]. URL: <https://ru.wikipedia.org/wiki/> (accessed: 09/26/2019). [in Russian]
- Decree, 2018** – Decree of the President of the Russian Federation No. 204 On National Goals and Strategic Objectives for Development in the Russian Federation of May 7, 2018. [Electronic resource]. URL: <http://www.kremlin.ru/events/president/news/57425> (date of access: 09.26.2019). [in Russian]
- Donetskaya, Zhan, 2019** – *Donetskaya, S.S., Zhan, Yan.* (2019). Internationalization of Higher Education in China: Modern Trends. *Higher Education in Russia*, 28: 63-74. [Electronic resource]. URL: [www.vovr.ru/nom62019.html](http://www.vovr.ru/nom62019.html)
- Dreval, 2018** – *Dreval, M.* (2018). Study of the Russian market of online education and educational technologies [Electronic resource]. URL: <https://estars.hse.ru/mirror/pubs/share/> (date of access: 08/09/2019). [in Russian]



**Federal Law, 2012** – Federal Law No. 273-FZ On Education in the Russian Federation of November 29, 2012 [Electronic resource]. URL: [http://www.consultant.ru/document/cons\\_doc\\_LAW\\_140174/](http://www.consultant.ru/document/cons_doc_LAW_140174/) (date of access: 26.07.2019). [in Russian]

**Filippov, Yuhua, 2015** – *Filippov, V.M., Sun, Yuhua* (2015). Rol' Universiteta Shankhayskoy organizatsii sotrudnichestva v sopryazhenii obrazovatel'nykh prostranstv Yevrazi [The role of the University of the Shanghai Cooperation Organization in the interface of educational spaces of Eurasia]. *Public Service*, 6 (98). [Electronic resource]. URL: <https://pajournal.igsu.ru/articles/r102/3560/> [in Russian]

**Guruleva, Bedareva, 2019** – *Guruleva, T.L., Bedareva, N.I.* (2019). Sotrudnichestvo Rossii i Kitaya v oblasti sozdaniya setevykh universitetov i sovmestnykh obrazovatel'nykh uchrezhdeniy [Cooperation of Russia and China in the field of creating network universities and joint educational institutions]. *Higher education in Russia*, 28(4): 108-123. DOI: <https://doi.org/10.31992/o869-3617-2019-28-4-108-123> [in Russian]

**International Students** – International Students from Countries Along the “Belt and Road” (一带一路”沿线国成留学生发力点). [Electronic resource]. URL: <http://www.chinaqw.com/hwjy/2017/04-24/138500.shtml> (accessed:26.09.2019). [in Chinese]

**Ivanov, Sokol-Nomokonov, 2018** – *Ivanov, S.A., Sokol-Nomokonov, E.N.* (2018). The Phenomenon of Flagship Universities in the Regional Economy in Present-Day Russia. *Higher education in Russia*, 1 (219):19-30. [Electronic resource]. URL: <https://vovr.elpub.ru/jour/article/view/1248>

**Joint Statement, 08.05.2015** – Joint Statement of the Russian Federation and the People's Republic of China on Cooperation in Conjugating the Building of the Eurasian Economic Union and the Silk Road Economic Belt, Moscow, May 8, 2015. [Electronic resource]. URL: <http://www.kremlin.ru/> (date of access: 26.09.2019). [in Russian]

**Pestereva et al., 2016** – *Pestereva, N. M., Krechetnikov, G. K., Rayovich, R.* (2016). Prospects for the development and internationalization of higher education in Asia. *European Journal of Contemporary Education*, 16 (2): 229-238.

**Kondakov, 2019** – *Kondakov, A.M.* (2019). Ecosystem of digital education. The digital economy is changing the nature of activities [Electronic resource]. URL: [https://firo.ranepa.ru/files/docs/cifr\\_didactika/plenar/kondakov\\_plenar.pdf](https://firo.ranepa.ru/files/docs/cifr_didactika/plenar/kondakov_plenar.pdf) (date of access: 10.10.2019). [in Russian]

**Korovkin, 2019** – *Korovkin, V.V.* (2019). Digital Industry 4.0 and New Personnel Requirements. [Electronic resource]. URL: [https://firo.ranepa.ru/files/docs/cifr\\_didactika/korovkin](https://firo.ranepa.ru/files/docs/cifr_didactika/korovkin) (accessed: 26.09.2019). [in Russian]

**Krechetnikov, Pestereva, 2017** – *Krechetnikov, K.G., Pestereva, N.M.* (2017). A Comparative Analysis of the Education Systems in Korea and Japan from the Perspective of Internationalization. *European Journal of Contemporary Education*, 6 (1): 77-88.

**Ma, Zhao, 2018** – *Ma, J., Zhao, K.* (2018). International student education in China: characteristics, problems and future trends. *Higher education*, 6 (4): 735-751. [Electronic resource]. URL: <https://link.springer.com/article/10.1007%2Fs10734-018-0235-4>

**MESRF** – Ministry of Education and Science of the Russian Federation [Electronic resource]. <https://minobrnauki.gov.ru/ru/activity/statan/stat/highed> (accessed: 26.07.2019).

**MEC** – Ministry of Education of China [Electronic resource]. URL: <http://www.crs.jsj.edu.cn/index> (date of access: 26.07.2019). [in Chinese]

**Moore, 1993** – *Moore, J.* (1993). Predators and Prey: A New Ecology of Competition. *Harvard Business Review*, 71: 76-86.

**Pestereva, 2015** – *Pestereva, N.M.* (2015). University network of volunteer training centers as a social project of the Sochi-2014 Olympic winter games heritage. *Procedia – social and behavioral sciences*, 214: 279-284. [Electronic resource]. URL: <https://www.researchgate.net/publication/287120258>

**Pestereva, Kholina, 2019** – *Pestereva, N.M., Kholina, V.N., Qi, J.,* (2019). The Russian Market for Exported Educational Services: The Shanghai Cooperation Organisation (SCO) Network University. *European Journal of Contemporary Education*, 8(3): 574-586.

**Pestereva et al., 2016** – *Pestereva, N.M., Krechetnikov, G.K., Rayovich, R.* (2016). Prospects for the development and internationalization of higher education in Asia. *European Journal of Contemporary Education*, 16 (2): 229-238.

**Project 5-100** – “Project to Increase the Competitiveness of Leading Russian Universities among the World's Leading Research and Educational Centers” [Proekt povysheniya konkurentosposobnosti vedushih rossiiskih universitetov sredi vedushih mirovyh nauchno-obrazovatel'nyh centrov]. [Electronic resource]. URL: <https://www.5top100.ru/universities/> (date of access: 01.09.2019). [in Russian]

**Research, 2019** – An Investigation into the Russian Market for Online Learning and Educational Technology. [Electronic resource]. URL: <https://estars.hse.ru/mirror/pubs/share/> (date of access: 08.09.2019) [in Russian]

**Resolution, 2019** – Resolution of the Government of the Russian Federation No. 234 On the System of Managing the Implementation of the ‘Digital Economy in the Russian Federation’ National Program of March 2, 2019. [Electronic resource]. URL: <http://ac.gov.ru/en/events/018558.html>

**Romanova, Gasanova, 2017** – Romanova, E.A., Hasanova, R.R. (2017). The system of open education and its risks in the context of globalization. *Bulletin of Moscow University. Teacher Education*, 3 (20):69–76. [Electronic resource]. URL: <https://cyberleninka.ru/article/n/sistema-otkrytogo-obrazovaniya-i-ego-riski-v-usloviyah-globalizatsii>

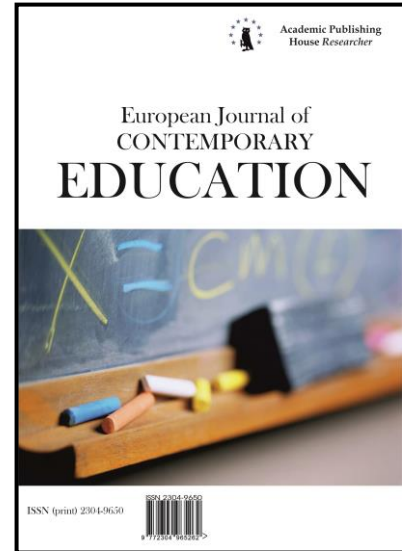
**Sun, 2017** – Sun, Y. (2017). Cultural Innovation: Localization and Internationalization of Higher Education in China [Kul'turnyye innovatsii: lokalizatsiya i internatsionalizatsiya vysshego obrazovaniya v Kitaye]. *Pedagogical Review*, 4 (18): 19-26. DOI: <https://doi.org/10.23951/2307-6127-2017-4-19-26> [in Russian]

**Wu, Zha, 2018** – Wu, H, Zha, Q. (2018). New Typology for Analyzing the Direction of Movement in Higher Education Internationalization. *Journal of Studies in International Education*, 22 (3): 259-277. [Electronic resource]. URL: <https://www.researchgate.net/publication/323763875>



Copyright © 2019 by Academic Publishing House Researcher s.r.o.  
All rights reserved.  
Published in the Slovak Republic  
European Journal of Contemporary Education  
E-ISSN 2305-6746  
2019, 8(4): 855-863  
DOI: 10.13187/ejced.2019.4.855  
[www.ejournal1.com](http://www.ejournal1.com)

**WARNING!** Article copyright. Copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of the violation of the author(s) rights will be pursued on the basis of international legislation. Using the hyperlinks to the article is not considered a violation of copyright.



## The Role of Family Education Strategies in the Development of Self-Regulation within Behavior of Students in 9–11 Grades

Yuri P. Povarenkov <sup>a</sup>, Natalya A. Baranova <sup>b</sup>, Nicholas W. Mitiukov <sup>c, d, e, f, g, \*</sup>

<sup>a</sup> Yaroslavl State Pedagogical University named after K.D. Ushinsky, Yaroslavl, Russian Federation

<sup>b</sup> Udmurt State University, Izhevsk, Russian Federation

<sup>c</sup> International Network Center for Fundamental and Applied Research, Washington, USA

<sup>d</sup> Udmurt Federal Research Center of the Ural Branch of the Russian Academy of Sciences, Izhevsk, Russian Federation

<sup>e</sup> Kalashnikov's Izhevsk State Technical University, Izhevsk, Russian Federation

<sup>f</sup> Moscow Institute of Psychoanalysis, Moscow, Russian Federation

<sup>g</sup> Volgograd State University, Volgograd, Russian Federation

### Abstract

This article examines how various family education strategies influence development of self-regulation behavior among students. It looks at grade levels 9-11 and compares sex differences as well as residential patterns (rural areas, district centers, and regional centers). It has been established that not all strategies are the same: some affect the development of the self-regulation system and some do not have an impact. The article identifies those strategies that have a positive effect on the system of self-regulation and that have a negative effect. According to our hypothesis, girls are more susceptible to the influence of family education strategies on self-regulation behavior than boys. It was revealed that both girls and boys are more susceptible to the positive influence of family education strategies and the less sensitive to their negative impact. The article also shows that students from 9–11 grades in regional centers experience sustainable changes and are strongly influenced by family education strategies while schoolchildren who reside in rural areas and district centers are not particularly sensitive to such influence.

**Keywords:** self-regulation system of behavior, components of self-regulation system, family education (family upbringing), family education strategies.

---

\* Corresponding author

E-mail addresses: [nico02@mail.ru](mailto:nico02@mail.ru) (N.W. Mitiukov)

## **1. Introduction**

It is obvious for most psychologists and educators that family together with family education greatly influence mental development of every individual and formation of one's character. At the same time questions about the psychological mechanisms through which family affects an individual remain open: specifically how personal traits and activities are being affected by family and to what degree a person is sensitive to such influence. Discussion about how profoundly and for how long family environment influence a person at different life stages remains open.

Due to high theoretical and practical relevance, the problem of the role of family education in human development is actively discussed and investigated in domestic and foreign psychology. A detailed review and characterization of these studies is presented in many works of domestic and foreign authors (Adler, 1998; Azarov, 2002; Petrovsky, 2005; Povarenkov, 2017 and others).

This article attempts to analyze the role of family education on the development of self-regulation behavior among students in 9-11 grades. Considering how important the function of self-regulation behavior is in a person's life, the power of influence from family on this process is considered to be significant and relevant. In this regard, both psychologists and educators give closest attention to the study of this. However, in most works devoted to this problem, the influence and role of family education on the development of self-regulation behavior and the arbitrariness of a child is studied (Verbianova, 2015; Karpov, 2007; Shadrikov, 2010). Furthermore, this influence has not been practically studied at later stages of human development.

Given the foregoing information, the purpose of this study is to determine the role of specific strategies of family education in the development of individual traits and self-regulation behavior among students (grades 9, 10, 11) on the whole. The main hypothesis is the following: there are family education strategies that affect the development of self-regulation behavior and there are family education strategies that have no effect. And the influence of family education strategies can be either positive or negative.

The implementation of the stated objectives of the study involves the following tasks:

- To determine the role of family education in the development of self-regulation behavior of students on the whole;
- To identify specific strategies of family education in the development of self-regulation of behavior among students living in rural areas, district cities and regional cities;
- To compare strategies of family education in the development of self-regulation behavior of high school students of different sexes.

But before proceeding with the solution of these tasks, we define the content of basic concepts.

The first concept is family education strategies. Its synonyms are the style of family education, the positions of family education and several others. Based on the works of A. Adler (Adler, 1998), N.E. Veraksa (Veraksa, 1996), G. Craig (Craig, 2000), strategy of family education refers to a typical state of parents' attitude to their child. They relied on using certain means and methods of pedagogical influence which are expressed in a specific manner of communication and interaction with the child. Various strategies (styles, positions) of family education are distinguished in literature. We will investigate 4 types of strategies described in methodology of S.A. Stepanov in the modification of I.I. Makhonin (Ulenkova, Kisova, 2005) (see the research procedure).

The second concept that we will focus on is self-regulation of behavior activity. This phenomenon is actively studied in foreign psychology (Baumeister, Vohs, 2004; Butler, Winne, 1995; Schunk, Zimmerman, 2003). O.A. Konopkin and his students are the first in Russian psychology who began to develop the problem of self-regulation activity. O.A. Konopkin understood conscious self-regulation as systemically organized process of a person's mental attempt to initiate, build, implement, maintain and manage all types of activities that are aimed at achieving goals chosen by the subject (Konopkin, 2005).

O.A. Konopkin notes that self-regulation exists as a general ability of a person (who is the subject of his activity) and as a process of realizing this ability in specific individual actions of larger activity, behavior, communication (Konopkin, 2007).

It must be considered that activity and self-regulation as a specific form of activity have different objects: the subject of self-regulation is the psychological structure of activity and its components. In other words, self-regulation in relation to activity appears as meta-activity, in the



terminology of A.V. Karpov (Karpov, 2007). The specifics of self-regulation as a metaprofessional form of human activity is disclosed in our works (Smirnova, 1998).

V.D. Shadrikov considers self-regulation as a mechanism for the formation of the subject of activity, based on the organization, structuring and restructuring of its psychological system. From a system-genetic approach and the standpoint of V.D. Shadrikov, in self-regulation is "the organization by a person of his activity in the direction of mobilizing his own resources in accordance with the motivation and purpose of the activity" (Shadrikov, 2010: 146).

V.I. Morosanova made an important contribution to the development of the psychological theory of self-regulation activity and behavior. She defined arbitrary conscious self-regulation as "a systemic multi-level process of a person's mental activity in advancing goals and managing their achievement" (Morosanova, Konoz, 2000: 37).

In the course of analysis of empirical research results, we will rely on the approaches discussed above to understand family education strategies and the system of self-regulation of activity.

## **2. Research procedure**

The aim of the study is to identify patterns of influence of various family education strategies on the development of self-regulation activities (behavior) among students in 9-11 grades compared by gender (boy or girl) and place of residence (rural area, district or regional center). The subjects of study (the students) are similar in their traits. The only slight difference in the number of students is determined by the number of students in the each group where the study was organized.

The study involved 464 students of grades 9-11, of whom girl number 239 and boys – 225, and those living in rural areas (150 people), district cities (165 people) and regional cities (149 peoples).

To diagnose family education strategies, the methodology of S. Stepanov was used in the modification of I.I. Makhonina (Ulenkova, Kisova, 2005). This methodology identifies the following types of strategies: authoritarian, autocratic, dominance (Auth); democratic, authoritative, cooperation (De); conniving, liberal, hypo custody (Con), indifferent, apathetic (Ind). A detailed description of each strategy is given in the work (Ulenkova, Kisova, 2005).

To diagnose a system of self-regulation behavior, the method of V. Morosanova was used (Morosanova, 2010). This method allows the used of following components: planning and goal-setting of activities (Pl), modeling of the conditions of activity (Mc), evaluation of the results of activities (Er), flexibility, the ability to readjust (Far), independence, autonomy in organizing activities (Ia), the general level of development of self-regulation system (Gld). A detailed description of each component of self-regulation system is disclosed (Miniyarov, 2005).

The abbreviated names of strategies are in parentheses and will be further used in the tables with results.

The processing of empirical data was carried out using the "Statistics" program. In the course of analysis, the following indicators were used: the correlation coefficient (Spearman) and the assessment of its significance (T-student), the paired and multiple regression coefficients and the assessment of their significance (F-Fisher). The correlation coefficient was used to analyze the relationships between the level of development of the components of self-regulation activity and the severity of specific strategies of family education. The multiple regression coefficient was used to assess the impact of family education on the system of self-regulation activity in general. The coefficient of pair regression showed the effect that individual family education strategies have on the components of self-regulation activity.

An integrability indicator was used to assess the intensity of interconnections between family education strategies and the level of development of self-regulation behavior. It was calculated in a following way. The correlation coefficient with a significance of  $p < 0.05$  was evaluated with a score of 1, with a significance of  $p < 0.01$  – a score of 2, with a significance of  $p < 0.001$  – a score of 3. Integrability index was calculated as the sum of the points. In fact, this indicator shows the "sensitivity" of the self-regulation system on the whole and its individual components to the positive and negative effects of various family education strategies.



### 3. Results

1. Initially, we analyze the relationship between the implemented strategies of family education and the level of development of self-regulation activity and its components for the entire choice of students.

Table 1 shows that the level of development of self-regulation components demonstrates a positive significant correlation with the democratic strategy of family education. This connection is as follows: the stronger the democratic strategy of family education is manifested, the higher the level of development is in the planning process is (at  $p < 0.001$ ), the modeling process (at  $p < 0.05$ ), the process of assessing results (at  $p < 0.01$ ), the qualities of flexibility (at  $p < 0.01$ ) and independence (at  $p < 0.001$ ).

Significant negative connections were recorded between the severity of the authoritarian strategy of family education and the level of change in the development process (at  $p < 0.05$ ); and negative connections were also recorded between the severity of the conniving strategy and the development of the planning process (at  $p < 0.05$ ). The revealed relationships indicate that the more authoritarian and conniving strategy of family education strategies is manifested, the less developed the planning and self-control processes are among students in 9–11 grades.

**Table 1.** The relationship between family education strategies and components of self-regulation activity among students in grades 9–11

Strategies	Indicators	Pl <sup>^^^</sup>	Mc	Pr	Er	Far	Ia	Gld
Auth <sup>^^^</sup>	r <sup>^</sup>	-,075	-,056	-,022	-,101*	-,075	-,047	-,076
	p <sup>^^</sup>	,107	,227	,637	,029	,109	,308	,103
De	r	,192***	,096*	,072	,136**	,124**	,191***	,176***
	p	,000	,038	,121	,003	,007	,000	,000
Con	r	-,106*	-,032	-,038	-,038	-,024	-,044	-,047
	p	,022	,498	,410	,410	,607	,342	,309
Ind	r	-,002	-,001	,049	-,001	-,022	-,059	-,040
	p	,974	,983	,296	,984	,631	,205	,387

Notes: ^ – correlation coefficient; ^^ – significance level;

^^^ – decoding of abbreviations in the text. The significance level of the correlation coefficients:

\* –  $p < 0.05$ ; \*\* –  $p < 0.01$ ; \*\*\* –  $p < 0.001$

The multiple regression coefficient is 0,19 (at  $p < 0.01$ ). This indicates in general the influence of family education on the development of self-regulation behavior among students in 9–11 grades, but this influence is weak and indirect.

The use of paired regression coefficients concretizes the data presented above as follows:

- the democratic strategy of family education is positive but indirectly, and it affects the development of self-regulation activity (at  $p < 0.001$ );
- the authoritarian strategy of family education negatively affects the development of self-regulation activity, but this influence is even weaker (at  $p < 0.05$ );
- the two remaining strategies of family education (conniving and indifferent) do not have any significant impact on the development of self-regulation system among students in 9–11 grades.

It should be noted that a positive integrativity coefficient is 11 points, and a negative coefficient is 2. This indicates that high school students are more sensitive (5.5 times) to the positive impact of family education strategies in the development of self-regulation activity than to a negative one.

2. Let us consider how the gender of students in 9-11 grades affects the relationship of family education strategies with the development of self-regulation behavior. The data of interest to us are presented in Tables 2a and 2b.

**Table 2a.** The interconnection of family education strategies and the components of self-regulation activity in boys in grades 9–11

Strategies	Indicators	Pl <sup>^^^</sup>	Mc	Pr	Er	Far	Ia	Gld
Auth <sup>^^^</sup>	r <sup>^</sup>	,013	-,117	,006	,032	-,011	-,050	,003
	p <sup>^^</sup>	,850	,079	,927	,634	,869	,456	,963
De	r	,139*	,093	,118	,106	,108	,199**	,187**
	p	,037	,166	,076	,112	,105	,003	,005
Con	r	-,069	,036	-,090	-,107	-,075	-,055	-,086
	p	,301	,591	,178	,109	,266	,408	,198
Ind	r	-,022	,044	,055	-,032	-,001	-,066	-,057
	p	,747	,512	,411	,631	,993	,324	,394

Notes: <sup>^</sup> – correlation coefficient; <sup>^^</sup> – significance level; <sup>^^^</sup> – decoding of abbreviations in the text. The significance level of the correlation coefficients: \* – p < 0.05; \*\* – p < 0.01; \*\*\* – p < 0.001

Table 2a shows that as far young men are concerned, only a democratic educational strategy is associated with the development of the planning process (at p < 0.05) and the development of the quality of independence (at p < 0.01). The remaining family education strategies do not reveal significant correlation with the components of the self-regulation system in youth activities.

**Table 2b.** Interconnection between family education strategies and components of self-regulation activity girls, grades 9–11

Strategies	Indicators	Pl <sup>^^^</sup>	Mc	Pr	Er	Far	Ia	Gld
Auth <sup>^^^</sup>	r <sup>^</sup>	-,160*	,001	-,056	-,220***	-,136*	-,039	-,145*
	p <sup>^^</sup>	,013	,989	,387	,001	,035	,547	,025
De	r	,240***	,099	,041	,162*	,139*	,172**	,166**
	p	,000	,126	,528	,012	,031	,007	,010
Con	r	-,141*	-,091	,006	,016	,026	-,033	-,014
	p	,029	,161	,925	,799	,687	,609	,834
Ind	r	,020	-,035	,047	,024	-,042	-,056	-,020
	p	,752	,586	,466	,711	,514	,386	,754

Notes: <sup>^</sup> – correlation coefficient; <sup>^^</sup> – significance level; <sup>^^^</sup> – decoding of abbreviations in the text. The significance level of the correlation coefficients: \* – p < 0.05; \*\* – p < 0.01; \*\*\* – p < 0.001.

Girls (see Table 2b) have a much higher number of connections and strength between them. They revealed a positive relationship between the democratic educational strategy and the development of planning processes (at p < 0.001), evaluation of results (at p < 0.01), the development of flexibility qualities (at p < 0.05) and independence (at p < 0.01). At the same time, girls revealed persistent negative relationships between the authoritarian strategy of family education and the level of development of planning processes (at p < 0.01), assessment of results (at p < 0.001) and quality of flexibility (at p < 0.05).

The multiple regression coefficient for girls is 0.23, and for boys it is 0.21 (with p < 0.05). This indicates presence of a weak positive but indirect influence of family education on the development of a system of self-regulation activities among boys and girls. Moreover, girls have significantly more positive and negative correlations between the components of self-regulation activity and family education strategies than boys.

The coefficient of positive integrativity of family education strategies and the level of development of the system of self-regulation of activity for boys is 3 and for girls is 8. That is, the system of self-regulation of girls' activity is 2.6 times more sensitive to the positive impact of family education strategies than for boys.

The coefficient of negative integrativity of family education strategies and the level of development of self-regulation system of young men is 0 and that of girls is 7. This suggests that girls, unlike boys, are sensitive to the negative impact, which individual family education strategies have on the development of self-regulation system of high school students.

**Table 3a.** Interconnection of family education strategies and components of the system of self-regulation in the activity of students attending grades 9–11 and living in rural areas

Strategies	Indicators	Pl <sup>^^^</sup>	Mc	Pr	Er	Far	Ia	Gld
Auth <sup>^^^</sup>	r <sup>^</sup>	-,090	-,029	,067	-,104	-,009	-,036	-,086
	p <sup>^^</sup>	,276	,721	,414	,206	,909	,665	,295
De	r	,164*	,092	-,104	,162*	,028	,066	,103
	p	,045	,264	,204	,048	,731	,421	,212
Con	r	-,125	-,049	-,014	-,032	-,036	,050	-,010
	p	,127	,550	,869	,701	,658	,547	,907
Ind	r	,050	-,010	,071	,047	,058	-,138	,078
	p	,544	,907	,386	,571	,484	,092	,342

Notes: ^ – correlation coefficient; ^^ – significance level; <sup>^^^</sup> – decoding of abbreviations in the text. The significance level of the correlation coefficients: \* – p < 0.05; \*\* – p < 0.01; \*\*\* – p < 0.001

**3.** Let's consider how the factor of residence affects the relationship of family education strategies with the level of development of self-regulation behavior. We investigated the influence that comes from three types of settlements: a rural settlement, a district city, and a regional city. The data of interest to us are presented in [Tables 3a, 3b](#) and [3c](#).

Students living in rural areas showed weak positive relationships (see [Table 3a](#)) of the democratic education strategy with the level of development of planning processes (at p < 0.05) and organization of control (at p < 0.05). Neither significant positive nor significant negative connections with other family education strategies were found in students of rural areas.

**Table 3b.** The interconnection of family education strategies and the components of the system of self-regulation activity among students in grades 9–11 living in district center

Strategies	Indicators	Pl <sup>^^^</sup>	Mc	Pr	Er	Far	Ia	Gld
Auth <sup>^^^</sup>	r <sup>^</sup>	-,119	,032	-,007	-,063	-,091	-,077	-,014
	p <sup>^^</sup>	,127	,679	,924	,421	,247	,325	,854
De	r	,156*	,005	,020	,106	,139	,241**	,127
	p	,045	,948	,799	,177	,076	,002	,103
Con	r	-,039	-,014	-,002	,014	-,013	-,077	-,046
	p	,617	,856	,981	,858	,867	,326	,555
Ind	r	,047	,026	,062	-,073	-,049	,001	-,019
	p	,551	,738	,427	,351	,529	,992	,806

Notes: ^ – correlation coefficient; ^^ – significance level; <sup>^^^</sup> – decoding of abbreviations in the text. The significance level of the correlation coefficients: \* – p < 0.05; \*\* – p < 0.01; \*\*\* – p < 0.001

Students of the district city (see [Table 3b](#)) also showed weak positive links to the democratic education strategy with the level of development of the planning process (at p < 0.05) and the development of the quality of independence (at p < 0.01). There were no positive and negative connections between the components of the system of self-regulation activity with other strategies of family education among senior students of the district city.

For senior students of the regional center (see [Table 3c](#)), the democratic strategy of family education is positively and significantly associated with all components of the system of self-

regulation activity, but the relationship with the level of development of planning and programming processes is especially high. This group of students also revealed negative relationships between the authoritarian educational strategy and the modeling process (at  $p < 0.05$ ) as well as between the conniving strategy and the planning process (at  $p < 0.05$ ).

It is important to note that a significant and relatively high multiple regression coefficient (at  $p < 0.001$ ) was recorded only among regional city students. This suggests that only regional city students are characterized by the influence that family education strategies have on the development of a system of self-regulation behavior.

**Table 3c.** The interconnection of family education strategies and the components of the system of self-regulation activity among high school students of grades 9–11 living in the regional city

Strategies	Indicators	Pl <sup>^^^</sup>	Mc	Pr	Er	Far	Ia	Gld
Auth <sup>^^^</sup>	r <sup>^</sup>	,004	-,179*	-,109	-,121	-,090	-,036	-,123
	p <sup>^^</sup>	,964	,029	,183	,142	,272	,662	,134
De	r	,272***	,202*	,293**	,148	,177*	,253**	,304***
	p	,001	,013	,000	,070	,031	,002	,000
Con	r	-,201*	-,052	-,094	-,110	-,012	-,100	-,129
	p	,014	,529	,250	,180	,889	,225	,116
Ind	r	-,078	,043	,040	,114	-,042	-,079	,001
	p	,340	,602	,630	,165	,614	,336	,986

Notes: <sup>^</sup> – correlation coefficient; <sup>^^</sup> – significance level;

<sup>^^^</sup> – decoding of abbreviations in the text. The significance level of the correlation coefficients:

\* –  $p < 0.05$ ; \*\* –  $p < 0.01$ ; \*\*\* –  $p < 0.001$

It confirms the obtained data and the assessment of positive integrativity coefficients. For schoolchildren in rural areas, this coefficient is 2, in district centers – 3, and in regional centers – 12. This indicates that schoolchildren in regional centers are several times more sensitive to the positive impact that individual family education strategies have on the development of the components of self-regulation activity than schoolchildren in countryside and in district centers are.

#### 4. Discussion

The results obtained, first of all, indicate that family education has a significant impact on the development of the system of self-regulation behavior among high school students on the whole and on its individual components. However, despite the statistical reliability, this effect is indirect and quite differentiated, which is confirmed by the results of similar studies (Karpov, 2007; Shadrikov, 2010).

Indirectness is manifested in the fact that the recorded effect is indirect and it is determined by the action of some intermediate factors. In the framework of this article, these factors have not been identified or studied, but it can be assumed that they are related to the general level of schoolchildren development, their life experience and the impact of specific social development situation.

The differentiation of family education influence on the development of self-regulation activity reveals itself in the fact that different strategies of family education do not equally affect the development of this system and its components. The strategies are identified as those that positively and negatively affect the development of self-regulation system and those strategies that do not have such an impact.

The democratic strategy of family education has a positive effect. This is manifested in the fact that this educational strategy activates the development of self-regulation system with its components and contributes to its formation and effective implementation. The authoritarian strategy of family education has a negative impact on the development of self-regulation system and its components. Its manifestation inhibits and blocks both the development and the implementation of self-regulation activities among schoolchildren.

The conniving and indifferent strategy of family education, as it was evidenced by the generalized data, most likely does not have an active influence on the process and the result of the

development of self-regulation activity by students. Although some indicators demonstrate weak negative connections between these strategies and the level of development of some the self-regulation components, it does not contradict the results of similar studies (Morosanova, 2010; Miniyarov, 2005).

The fact that the system of self-regulation in schoolchildren is more sensitive to their positive influence and less sensitive to negative influence also indicates the differentiated effects of family education strategies. In other words, the system of self-regulation of schoolchildren is more open to positive interventions and less open to negative ones. In relation to the data obtained, this means that the activating and stimulating effect of the democratic strategy is much stronger and more productive than the inhibitory and blocking effect of the authoritarian strategy in family education settings.

The obtained data indicate that both boys and girls experience an indirect influence of family education strategies on the development of self-regulation system on the whole and its individual components. However, this effect is much stronger for girls than for boys. The foregoing is concerned with the positive influence of a democratic strategy, and the negative influence – an authoritarian strategy, and the absence of such influence on the part of an acquiescent and indifferent family education strategy.

The development of self-regulation activities in girls (in contrast to young men) is sensitive to the positive influence of the democratic strategy of family education and to the negative influence of the authoritarian strategy. Young men, as the obtained data show, are generally not sensitive to the blocking effect that the authoritarian family education strategy has on the development of self-regulation system.

## **5. Conclusion**

In general, the results of the study confirm the hypothesis that young men experience greater autonomy and independence from the influence that family education has on their overall development as well as development of self-regulation activities in particular.

Students' place of residence as well as gender, have specific effect on particular influence that family education strategies have on the development of self-regulation behavior. Immediately, we note that the results obtained during the empirical study did not coincide with our assumptions. We expected that the social situation of a small town and rural settlement world favor increased student sensitivity to the influence of family education strategies. However, the obtained data indicate the opposite: a steady influence of family education strategies strangely influence the development of self-regulation system only among regional city students. For students living in rural areas and district cities, this effect was not revealed.

The reason for the autonomy in this category of teenagers, as we see, is that they do not strive to live as their parents do. Family values, traditions, ways of interaction are not perceived by senior students as significant landmarks that could and should be relied upon when building their own life prospects in rural and district center schools. For various reasons teen generation perceive the complex life of older residents in rural and district centers as either useless or negative model as best and therefore unworthy of imitation.

That is why the development of a system of self-regulation activities in this category of adolescents is not sensitive to the influence of both positive and negative family education strategies in contrast adolescents in the regional centers. Perceive the lifestyle of parents as more attractive in terms of imitation. They are ready to listen to what parents advise and to implement what parents recommend. A consequence of this openness is the high susceptibility of the system of self-regulation activities to the effects of various family education strategies in adolescents of the regional center.

## **6. Acknowledgments**

The article was prepared in the State Target of Russian Academy of Science, State Registration AAAA-A19-119092690104-4. Special thanks to Eugenia A. Shchekoteva for English translation.

## **References**

Adler, 1998 – Adler, A. (1998). *Vospitanie detej, vzaimodejstvie polov* [Parenting, gender interaction]. Rostov on Don, 256 p. [in Russian]

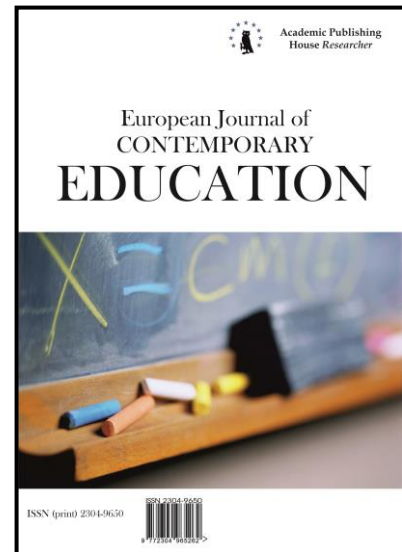


- [Azarov, 2002](#) – Azarov, Yu.P. (2002). Semejnaya pedagogika [Family pedagogy]. M.: Prosveshchenie, 685 p. [in Russian]
- [Baumeister, Vohs, 2004](#) – Baumeister, R.F., Vohs, K.D. (2004). (Eds). Handbook of self-regulation: Research, theory and applications. New York: Guilford Press.
- [Butler, Winne, 1995](#) – Butler, D.L., Winne, P.H. (1995). Feedback and self-regulated learning: a theoretical synthesis. *Review of Educational Research*, 65 (3): 245-281.
- [Craig, 2000](#) – Craig, G. (2000). Psihologiya razvitiya [Psychology of Development]. St. Petersburg: Piter, 992 p. [in Russian]
- [Karpov, 2007](#) – Karpov, A.V. (2007). Ponyatie metakognitivnyh i integralnyh processov kak koncepty psihologii samoregulyacii [The concept of metacognitive and integral processes as concepts of the psychology of self-regulation]. Subiekt i lichnost v psihologii samoregulyacii [Subject and personality in the psychology of self-regulation]. Stavropol: Izdatelstvo PI RAO, SevKavSTU, pp. 46-67. [in Russian]
- [Konopkin, 2005](#) – Konopkin, O.A. (2005). Strukturno-funkcionalnyj i sodержatelno-psihologicheskij aspekty osoznannoj samoregulyacii [Structural-functional and substantial-psychological aspects of conscious self-regulation]. *Psihologiya. Zhurnal Vysšej shkoly ekonomiki*, 2(1): 27-42. [in Russian]
- [Konopkin, 2007](#) – Konopkin, O.A. (2007). Mekhanizmy osoznannoj samoregulyacii proizvolnoj aktivnosti cheloveka [Mechanisms of conscious self-regulation of arbitrary human activity]. Subiekt i lichnost v psihologii samoregulyacii [Subject and personality in the psychology of self-regulation]. Stavropol: Izdatelstvo PI RAO, SevKavSTU, pp. 12-30. [in Russian]
- [Miniyarov, 2005](#) – Miniyarov, V.M. (2005). Psihologiya semejnogo vospitaniya (diagnostiko-korrekcionnyj aspekt) [Psychology of family education (diagnostic and correctional aspect)]. Voronezh: Izdatelstvo NGO "Modek", 550 p. [in Russian]
- [Morosanova, 2010](#) – Morosanova, V.I. (2010). Individual'nye osobennosti osoznannoj samoregulyacii proizvolnoj aktivnosti cheloveka [Individual characteristics of conscious self-regulation of arbitrary human activity]. *Vestnik Moskovskogo Universiteta. Ser. 14. Psychology*, 1: 36-45. [in Russian]
- [Morosanova, Konož, 2000](#) – Morosanova, V.I., Konož, E.M. (2000). Stilevaya samoregulyaciya povedeniya cheloveka [Style self-regulation of human behavior]. *Voprosy psikhologii*, 3: 118-127. [in Russian]
- [Petrovsky, 2005](#) – Petrovsky, A.V. (2005). Deti i taktika semejnogo vospitaniya [Children and the tactics of family education]. M.: Prosveshchenie, 76 p. [in Russian]
- [Povarenkov, 2017](#) – Povarenkov, Yu.P. (2017). Mnogoobrazie vidov i form deyatel'nosti (aktivnosti) professionala (Chast 1) [The variety of types and forms of activity (activity) of a professional (Part 1)]. *Yaroslavskij pedagogicheskij vestnik*, 2: 187-193. [in Russian]
- [Schunk, Zimmerman, 2003](#) – Schunk, D.H., Zimmerman, B.J. (2003). Self-regulation and learning. W.M. Reynolds, G.E. Miller (Eds) Handbook of psychology. *Educational psychology*. Hoboken (New Jersey): John Wiley & Sons, Vol. 7. Pp. 59-79.
- [Shadrikov, 2010](#) – Shadrikov, V.D. (2010). Professionalnye sposobnosti [Professional abilities]. Moscow: Universitetskaya kniga, 320 p. [in Russian]
- [Smirnova, 1998](#) – Smirnova, E.O. (1998). Razvitie voli i proizvol'nosti v rannem i doshkol'nom vozraste [The development of will and arbitrariness in early and preschool age]. M.: Izdatelstvo «Institut praktičeskoj psihologii»; Voronezh: NPO "Modek", 256 p. [in Russian]
- [Ulenkova, Kisova, 2005](#) – Ulenkova, U.V., Kisova, V.V. (2005). Eksperimentalnoe izučenie formirovaniya samoregulyacii v strukture obščej sposobnosti k obučeniyu u šestiletnih detej [An experimental study of the formation of self-regulation in the structure of the general ability to learn in six-year-old children]. *Defektologiya*, 2: 19-26. [in Russian]
- [Veraksa, 1996](#) – Veraksa, N.E. (1996). Sposoby regulyacii povedeniya u detej doshkol'nogo vozrasta [Methods of regulating behavior in preschool children]. *Voprosy psikhologii*, 3: 27-34. [in Russian]
- [Verbianova, 2015](#) – Verbianova, O.M. (2015). Razvitie sposobnosti detej doshkol'nogo vozrasta k samoregulyacii v social'nom prostranstve semi [Development of the ability of preschool children to self-regulation in the social space of the family]. *Vestnik KSPU im. V.P. Astafeva*, 2: 184-189. [in Russian]



Copyright © 2019 by Academic Publishing  
House Researcher s.r.o.  
All rights reserved.  
Published in the Slovak Republic  
European Journal of Contemporary Education  
E-ISSN 2305-6746  
2019, 8(4): 864-878  
DOI: 10.13187/ejced.2019.4.864  
[www.ejournal1.com](http://www.ejournal1.com)

**WARNING!** Article copyright. Copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of the violation of the author(s) rights will be pursued on the basis of international legislation. Using the hyperlinks to the article is not considered a violation of copyright.



## An Approximation of University Students' Learning Ability in the Area of Probability

Salvador Sandoval-Bravo <sup>a</sup>, Pedro Luis Celso-Arellano <sup>a</sup>, Victor Gualajara <sup>a</sup>, Semei Coronado <sup>b,\*</sup>

<sup>a</sup> Centro Universitario de Ciencias Económico Administrativas, Universidad de Guadalajara, Jalisco, México

<sup>b</sup> Independent researcher, San Diego, California, USA

### Abstract

The objective of this study is to analyze the ability of students of the University Center for the Economic Administrative Sciences which forms part of the University of Guadalajara from different economic-administrative undergraduate programs, to solve distinct problems in the area of probability, applying a multiple-choice instrument aligned to the learning objectives via a qualitative-descriptive methodology. The study comprised a sample of 251 students from 14 different undergraduate degree programs who were enrolled in the same statistics course. Multivariate tests were conducted in order to identify any differences in performance related to undergraduate degree program and sex, while a RASCH model was applied to provide validity evidence for the assessment. The results show that the students do not have a good level of ability for solving conditional probability problems, which they confused with the formulation of independent event problems although they did show a satisfactory level of ability for solving other types of problems.

**Keywords:** probability, assessment, homogeneity tests, RASCH.

### 1. Introduction

Probability has been studied from distinct approaches, from a conceptual level to university curricula and the manner in which it is taught, among others. Contemporaneously, these research topics have been subject to distinct and often controversial interpretations (Batenero et al., 2005; Borovenik, 2011; Carolyn, Kirk, 2001). These controversies could be due to the fact that probability requires an approach distinct to who we think about and apply reasoning to situations in real life (Batenero et al., 2016).

---

\* Corresponding author

E-mail addresses: [semei.coronado@gmail.com](mailto:semei.coronado@gmail.com) (S. Coronado),  
[victor.gualajara@academicos.udg.mx](mailto:victor.gualajara@academicos.udg.mx) (V. Gualajara), [pcelso@cucea.udg.mx](mailto:pcelso@cucea.udg.mx) (P. Luis Celso-Arellano),  
[salvsanb@cucea.udg.mx](mailto:salvsanb@cucea.udg.mx) (S. Sandoval-Bravo)

The *Centro Universitario de Ciencias Económico Administrativas* (CUCEA or University Center for the Economic Administrative Sciences), which forms part of the *Universidad de Guadalajara* (U de G or University of Guadalajara), offers 14 undergraduate degrees in the areas of economics and business. All CUCEA undergraduate students take the same statistics course, the content of which includes the topics of descriptive statistics and basic probability. Since 2005 (Del Toro, Ochoa, 2010), a Departmental Exam (DE) has been applied every semester. The DEs are designed by a commission of professors from the Academy of Statistics (AS) with the aim of measuring the level of knowledge acquired during the semester by students on the course (Del Toro, Ochoa, 2010). Through the *Departamento de Métodos Cuantitativos* (DMC Department of Quantitative Methods), since 2006, CUCEA, in coordination with the AS, has promoted significant and competitive learning in the area of statistics, organizing the annual Statistics Tournament (ST), in which all students taking the statistics course are free to participate.

Descriptive and inferential analyses were conducted with the proposed instrument, with the results corroborated by a RASCH model (RM) (Rasch, 1980) to ascertain the students' ability and, thus, support the findings obtained. Moreover, the RM provided validity and reliability evidence for the proposed instrument (Aziz et al., 2013; Raudzatul, 2016).

Average grades, both for the DE and the ST, were obtained from the SA (Academia de Estadística, 2018), revealing that the students obtained lower grades for probability topics than for descriptive statistics topics. Thus, for the year in question, the DE students' average score was 61.25 for descriptive statistics and 44.17 for probability questions, while, for the ST students, these were 58.26 and 37.81, respectively (results for previous tournaments have been very similar). With these results showing poorer student performance for probability items, it is necessary to study their learning in the area of probability via an instrument that not only measures what they have learned, but which is also aligned with the results for the statistics course, specifically the topics on probability.

Research has been conducted in the area of probability at distinct educational levels in Mexico. For example, Flores et al. (2014) studied the quality of secondary level students' answers in probability topics, both before and after undertaking technology-based learning activities. On this same research line, but with students in their sixth semester of high school, Landin and Sánchez (2010) analyzed students' probabilistic reasoning as related to the binomial distribution and based on symbolic software.

Sánchez and Inzunza (2006) organized different activities with university students to study their analysis of the meaning of different distributions, such as binomial, uniform, normal and irregular distributions, using a computer as a tool to carry out different simulations. However, a literature review did not identify any studies that determined the ability of university students in the economic-administrative area.

From this point on, the present study is divided into three sections, with Section 2 presenting the methodology and Section 3 the conclusions.

## **2. Methods**

The research was carried out at CUCEA, which, as noted earlier, offers 14 undergraduate degrees in the economic-administrative area. As a requirement for all CUCEA degree programs, the course Statistics I covers different topics, including probability, and is often taken by students in their second or third semester.

The proposed assessment was offered to 57 Statistics I course sections during the first semester of 2019. Due to various circumstances external to the research, only seven course sections took the assessment. With each group comprising between 30 and 40 students, the total sample was 251 students.

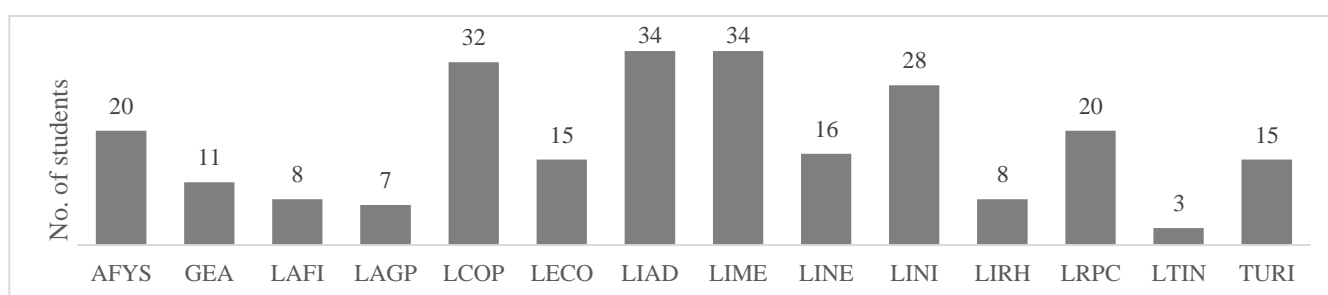
The exam was designed in various stage. First, a commission was established by the professors teaching the course in order to decide on the topics which would be on the exam, concluding on the following: combinations; permutations; simple probability; conditional probability; Bayes' theorem; and, binomial and Poisson distributions. It was then decided during the second stage that the number and type of questions to be applied would correspond to 10 multiple choice questions. Moreover, both the correct answer option and the distractors had to be justified in order that they reflected the students' most common difficulties and errors. It was also

stipulated that the questions corresponded to problems from the area of business and economics, in order to guarantee that the knowledge acquired was significant for the students.

The third stage consisted in the preparation of a test by each member of the commission, in accordance with the initial guidelines, while the fourth stage reviewed the individual questions and chose the best per topic, on the basis of which, the first version of the test was devised. An independent commission of experts evaluated the test in the fifth stage, making some important suggestions for the modification of the test, which were then implemented. Finally, the group of experts validated and approved the modified version, which was then applied. The exam is available upon request from the authors.

### 3. Results

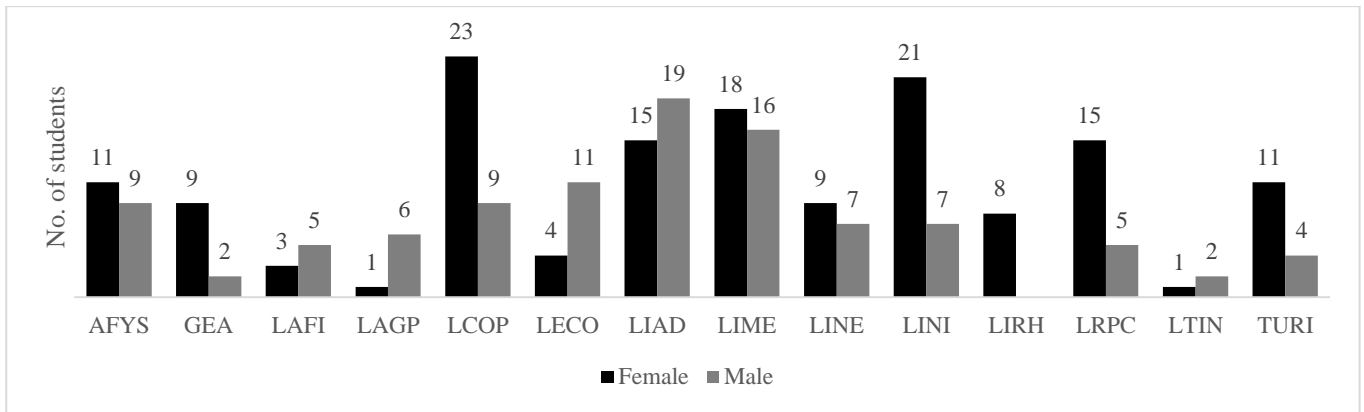
Figure 1 presents the number of students participating in the study per undergraduate degree program, of which 40 % were enrolled in public accounting, business administration and marketing undergraduate degree programs, while only 1.2 % were enrolled in information technology undergraduate degree programs. A total of 149 women and 102 men participated, with Figure 2 presenting the distribution by degree and sex.



**Fig. 1.** Number of students per undergraduate degree program

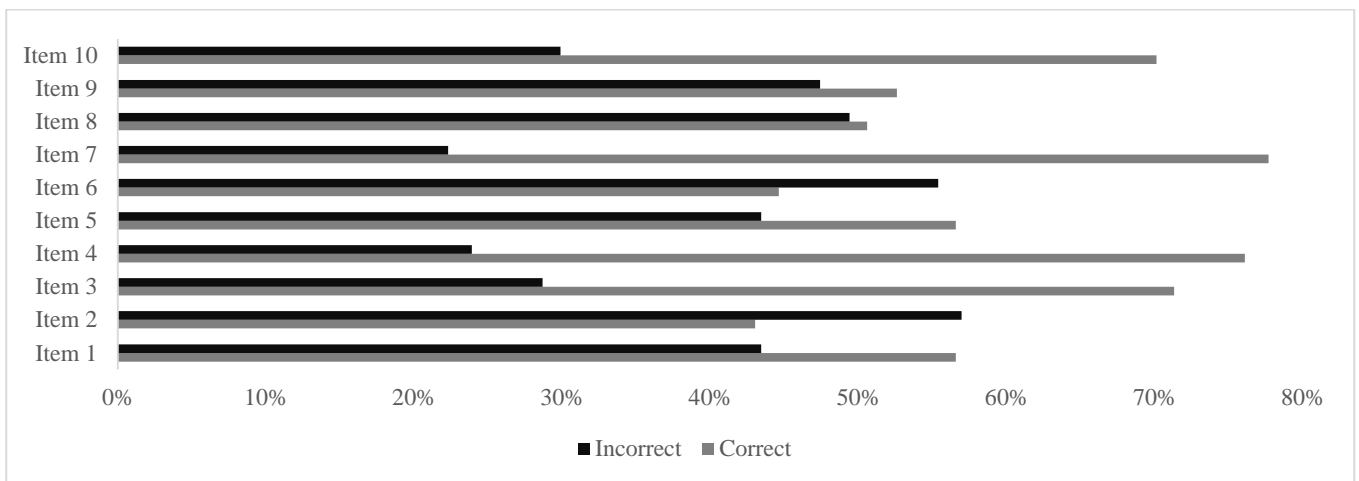
Note: Nomenclature of the different economic-administrative undergraduate degrees offered at CUCEA:

*Administración Financiera y Sistemas* (AFYS or Financial Administration and Systems), *Licenciatura en Gestión y Economía Ambiental* (GEA or Undergraduate Degree in Environmental Management and Economics), *Licenciatura en Administración Financiera* (LAFI or Undergraduate Degree in Financial Administration), *Licenciado en Administración Gubernamental y Políticas Públicas* (LAGP or Undergraduate Degree in Government Administration and Public Policy), *Licenciado en Contaduría Pública* (LCOP or Undergraduate Degree in Public Accounting), *Licenciado en Economía* (LECO or Undergraduate Degree in Economics), *Licenciado en Administración* (LIAD or Undergraduate Degree in Administration), *Licenciado en Mercadotecnia* (LIME or Undergraduate Degree in Marketing), *Licenciado en Negocios* (LINE or Undergraduate Degree in Business), *Licenciado en Negocios Internacionales* (LINI or Undergraduate Degree in International Business), *Licenciado en Recursos Humanos* (LIRH or Undergraduate Degree in Human Resources), *Licenciado en Relaciones Públicas y Comunicación* (LRPC or Undergraduate Degree in Public Relations and Communication), *Licenciado en Tecnologías de la Información* (LTIN or Undergraduate Degree in Information Technology), *Licenciado en Turismo* (TUR or Undergraduate Degree in Tourism).



**Fig. 2.** Number of students by sex and undergraduate degree  
Source: Prepared by the author based on the sample

The exam lasted an hour. Binary (one and zero) scoring was applied to the results, in which a correct response was scored 1 and an incorrect response scored 0. Figure 3 presents the percentage of correct and incorrect responses per item, from which it was observed that there were less than 50 % correct responses for items 2 and 6. Items 8 and 9 had 51 % and 53 % correct responses, respectively, with between 57 % and 78 % correct for the remaining items. We applied a one proportion z test for each item to support the result. Where the null hypothesis is the proportion of questions correct less or equal than the proportion of questions incorrect at a significance level of 5 %. The result presented is in Table 1. According to the p-value in Table 1, we found four items that were not significant. We could infer the student had difficulty solving the problem or that the questions did not clearly establish the problem.



**Fig. 3.** Percentage of correct and incorrect responses per item  
Source: Prepared by the author based on the sample

**Table 1.** One portion z test to compare the correct and incorrect answers

Item	portion correct	portion incorrect	z	p-value
1	0.57	0.43	2.22	0.0186
2	0.43	0.57	-2.22	0.9864
3	0.71	0.29	6.65	0.0000
4	0.76	0.24	8.24	0.0000
5	0.57	0.43	2.22	0.0186



6	0.44	0.56	-1.90	0.9558
7	0.78	0.22	8.87	0.0000
8	0.51	0.49	0.32	0.4249
9	0.53	0.47	0.95	0.2060
10	0.70	0.30	6.34	0.0000

Source: Prepared by the author based on the sample

Table 2 presents the percentage of correct and incorrect responses per undergraduate degree. For some undergraduate degree programs, such as LRPC and LECO, there were more than 50 % correct answers for all of the items, while, for other programs, there were more than 50 % correct answers for all but one of the items, such as LINI and LAGP. For GEA and LINE, there were only two items with more than 50 % correct answers. This difference is due to the fact that, per degree program, the course sections do not seem to be homogeneous with respect to mean performance on the assessment.

Thus, assuming homogeneous covariance across these sub-course sections and using a confidence level of 95 %, the following four tests were applied to test the hypothesis that the mean performance on the assessment is the same across all the sub-course sections: Wilks’ lambda (Wilks, 1932); Pillai’s trace (Pillai, 1955); Lawley-Hotelling trace (Lawley, 1938); and, Roy’s largest root (Roy, 1957). The four tests reject the hypothesis of identical means across the degree programs, according to the *p*-value; therefore, it is unlikely that they have equal means. Thus, they are independent. The results are presented in Table 3.

**Table 2.** Percentage of correct and incorrect responses by item and degree program

AFYS											LIME										
Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10		Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10	
Correct	60%	30%	85%	70%	65%	40%	85%	45%	55%	85%	Correct	29%	29%	79%	76%	50%	41%	62%	41%	47%	59%
Incorrect	40%	70%	15%	30%	35%	60%	15%	55%	45%	15%	Incorrect	71%	71%	21%	24%	50%	59%	38%	59%	53%	41%
GEA											LINE										
Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10		Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10	
Correct	73%	45%	36%	73%	27%	36%	64%	27%	27%	45%	Correct	38%	25%	50%	63%	50%	31%	69%	13%	38%	81%
Incorrect	27%	55%	64%	27%	73%	64%	36%	73%	73%	55%	Incorrect	63%	75%	50%	38%	50%	69%	31%	88%	63%	19%
LAFI											LINI										
Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10		Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10	
Correct	38%	38%	75%	88%	50%	38%	50%	75%	50%	100%	Correct	71%	68%	93%	75%	64%	43%	93%	68%	68%	82%
Incorrect	63%	63%	25%	13%	50%	63%	50%	25%	50%	0%	Incorrect	29%	32%	7%	25%	36%	57%	7%	32%	32%	18%
LAGP											LIRH										
Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10		Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10	
Correct	86%	71%	71%	71%	71%	43%	71%	57%	71%	71%	Correct	25%	0%	63%	63%	50%	63%	63%	50%	38%	75%
Incorrect	14%	29%	29%	29%	29%	57%	29%	43%	29%	29%	Incorrect	75%	100%	38%	38%	50%	38%	38%	50%	63%	25%

LCOP											LRPC										
Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10		Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10	
Correct	<b>56%</b>	34%	<b>53%</b>	<b>69%</b>	<b>53%</b>	41%	<b>78%</b>	38%	<b>63%</b>	<b>66%</b>	Correct	<b>70%</b>	<b>55%</b>	<b>85%</b>	<b>75%</b>	<b>65%</b>	<b>60%</b>	<b>85%</b>	<b>65%</b>	<b>75%</b>	<b>75%</b>
Incorrect	44%	66%	47%	31%	47%	59%	22%	63%	38%	34%	Incorrect	30%	45%	15%	25%	35%	40%	15%	35%	25%	25%
LECO											LTIN										
Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10		Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10	
Correct	<b>67%</b>	<b>67%</b>	<b>73%</b>	<b>73%</b>	<b>67%</b>	<b>53%</b>	<b>100%</b>	<b>60%</b>	<b>73%</b>	<b>73%</b>	Correct	<b>100%</b>	<b>100%</b>	<b>67%</b>	<b>100%</b>	0%	33%	<b>100%</b>	33%	0%	33%
Incorrect	33%	33%	27%	27%	33%	47%	0%	40%	27%	27%	Incorrect	0%	0%	33%	0%	100%	67%	0%	67%	100%	67%
LIAD											TURI										
Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10		Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10	
Correct	<b>65%</b>	44%	<b>74%</b>	<b>97%</b>	<b>59%</b>	<b>62%</b>	<b>76%</b>	<b>71%</b>	32%	<b>74%</b>	Correct	<b>53%</b>	40%	<b>60%</b>	<b>73%</b>	<b>67%</b>	20%	<b>87%</b>	47%	<b>53%</b>	40%
Incorrect	35%	56%	26%	3%	41%	38%	24%	29%	68%	26%	Incorrect	47%	60%	40%	27%	33%	80%	13%	53%	47%	60%

Note: The percentages in bold correspond to those items that received 50% or more correct answers.

Source: Prepared by the authors based on the sample

**Table 3.** Homogeneity tests for the means for the degree programs

Wilks' lambda	0.8442	13.0	237.0	3.37	0.001
Pillai's trace	0.1558	13.0	237.0	3.37	0.001
Lawley-Hotelling trace	0.1846	13.0	237.0	3.37	0.001
Roy's largest root	0.1846	13.0	237.0	3.37	0.001

Source: Prepared by the authors based on the sample in Stata.

This finding may influence the analysis of the items that comprise the test, due to the presence of heterogeneous course sections, which could be a result of the different numbers of students in the sample per degree program and may influence the efficiency of the item. Sex is another variable that could support this hypothesis. The same tests were applied, with the results indicating that the variable of sex is homogeneous, while, according to the *p*-values obtained for the four tests, the hypothesis with identical means cannot be rejected (see [Table 4](#)).

**Table 4.** Homogeneity tests conducted on the means by sex

	Statistic	F(df1, df2)	F	<i>p</i> -value
Wilks' lambda	0.9983	1 249	0.44	0.5096
Pillai's trace	0.0017	1 249	0.44	0.5096
Lawley-Hotelling trace	0.0018	1 249	0.44	0.5096
Roy's largest root	0.0018	1 249	0.44	0.5096

Source: Prepared by the authors based on the sample in Stata.

An analysis conducted per item from the test is presented in Table 5, with the aim of determining both how the students interpret each of the items and, in descriptive terms, their deficiencies. Table 5 presents a description of the objective of the item and each of the distractors. The first column is the item number, while the second is the learning objective the test is seeking to identify in the student, and columns three to six describe the purpose of each of the distractors, as well as the correct response. Each response option was identified by capital letters, from A to D.

**Table 5.** Objective of the items and distractors

No.	Objective	A	B	C	D
1	Ability to identify a combination-type arrangement	Confuse the arrangement with a permutation	Confuse the arrangement with a factorial	<b>Correct Response</b>	Apply the multiplier effect
2	Identification and resolution of a permutation problem	<b>Correct Response</b>	Carry out the calculation of multiplication rules	Apply the multiplier effect	Apply combinations instead of a permutation
3	Identify classical probability from the events of interest and the total events from the sample space	<b>Correct Response</b>	Confusion between events of interest and sample space	Is not aware of events of interest and sample space	Confuses the number of events of interest
4	Ability to determine the calculation of a simple probability	Calculate the probability that the suit of the card is clubs	Calculate the probability that the card is an ace	Add the club cards to the aces, repeating the ace of clubs	<b>Correct Response</b>
5	Ability to determine the complementary probability calculation and additive principle	Calculate the probability that the sum is two or twelve	Count the number of cases where the sum is two or twelve	Count the number of cases where the sum is neither two nor twelve	<b>Correct Response</b>
6	Identify and resolve a conditional probability problem	Approach the problem backwards	Confuse the formula for independent events	Does not understand the context (multiplying instead of dividing)	<b>Correct Response</b>
7	Identify and resolver an independent events problem	<b>Correct Response</b>	Marginal probability for Event A	Joint probability for events A and B	Cannot identify independent events
8	Identify the use of conditional probabilities in statements in which Bayes' theorem can be applied	Confuse it with the other event	<b>Correct Response</b>	Error in the calculation of the event	Error in both the calculation of the event and the correct event
9	Identify the data and know how to resolve a problem for a binomial distribution	Is confused, only setting for $x=2$	<b>Correct Response</b>	Is confused and makes the calculation for $x>=2$	Incorrectly makes the calculation when configuring and executes $x<2$
10	Identify the data and know how to resolve a problem for a Poisson distribution	Confuses the median of events with the random variable	<b>Correct Response</b>	Does not understand the context	On executing the calculation, makes an error and confuses the placing of the digits

Source: Prepared by the author.

As shown above, the means for the different undergraduate degrees are distinct, or, in other words, heterogeneous. The opposite is the case with regard to the variable of sex, where the means are equal, or, in other words, homogeneous. The correlations among the items were determined for the entire sample, with Figure 4 presenting the correlation matrix, using a 5 % significance level.

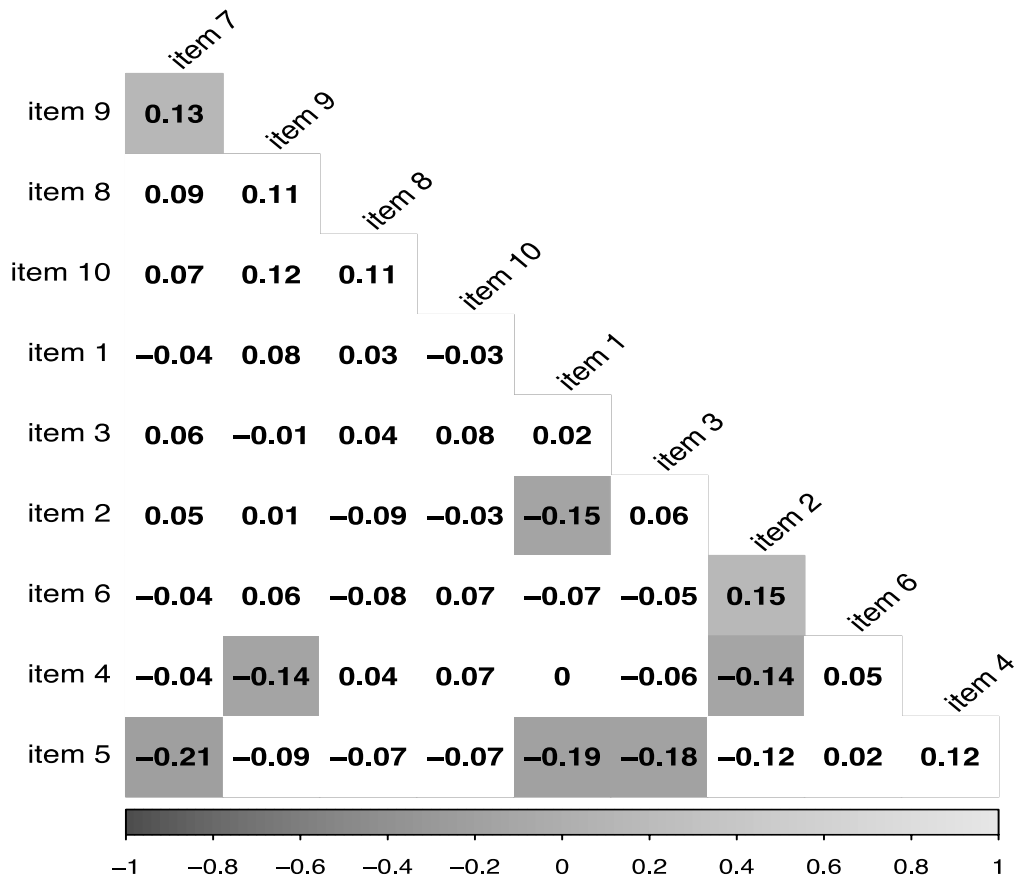


Fig. 4. Correlation Matrix

Note: The shaded part indicates that the correlation is statistically significant at 5 %

Source: Prepared by the author in R

The results presented in Figure 4 are observed to show a significant positive correlation in two pairs of items, the item pairs 6-2 and 7-9, with a correlation of 0.15 and 0.13, respectively. However, the two pairs of items correspond to distinct topics. According to Table 5, Item 2 is a permutation exercise and Item 6 is a conditional probability exercise, while Item 7 corresponds to independent events and Item 9 to binomial distribution. On the other hand, seven pairs of items are found with a significant negative correlation: 1-2; 1-5; 2-4; 3-5; 4-9; and, 5-7. Item pair 1-2 has a topic in common, namely combinations and permutations, which may not adequately identify the type of calculation that should be applied in both items. Although they are significantly correlated, pairs 1-5, 2-4, 3-5, 4-9 and 5-7 are not very clear in conceptual terms. The students, therefore, had problems identifying simple probability, combinations, permutations, conditional probability and binomial distribution calculations. The remaining pairs are not significantly correlated. It is necessary to analyze these results item by item in order to better establish the students' behavior.

Figure 5 presents the percentage of responses per option in each item, with dark grey indicating the correct option. Eight of the ten items had more than 50 % correct responses, with items 2 and 6 below the average. Item 7 obtained the highest percentage of correct responses in the sample, almost 80 %, which shows that the students had a good understanding of the concept of independent events. Moreover, it was found that, for seven items, between 1 % and 4 % the students did not answer the question.

With regard to Item 1, 57 % of the students had the ability to identify a combination problem, which 19 % incorrectly recognized as a problem to be resolved by means of the multiplier effect and

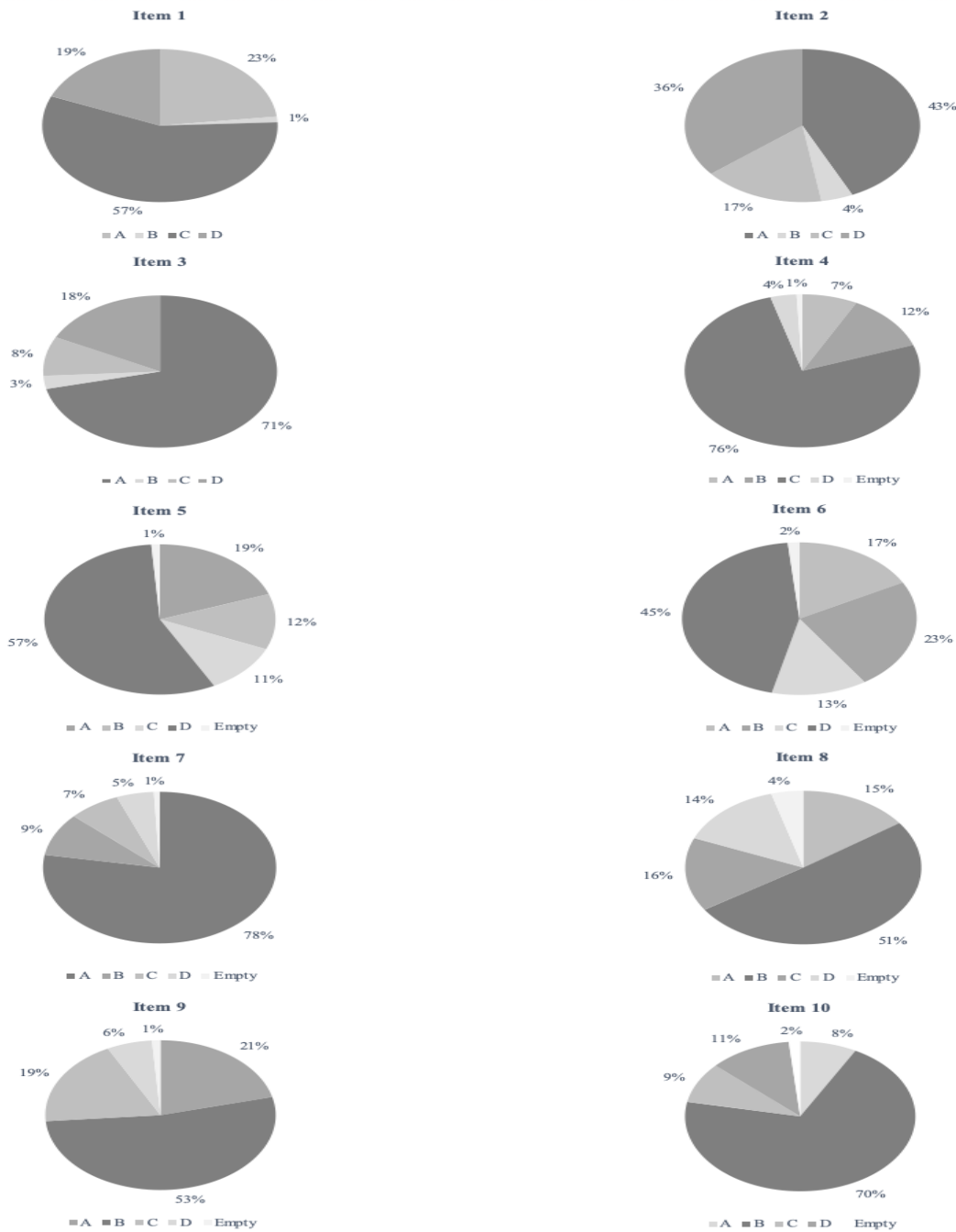
which the remaining students confused with a factorial arrangement or permutation. Item 2 obtained 43 % correct responses, which shows that less than half the students had the ability to identify a permutation problem, while 36 % confused it with a combination problem. The incorrect global percentages for these two pairs of items are close to the correct percentages, which corroborates the negative correlation presented in [Figure 4](#). However, according to the results for Item 3, 71 % of the students understood the concept of probability and identified the concept of sample space, which is corroborated by the 76 % correct responses for Item 4, which is an item related to classical, or simple, probability.

With regard to Item 5, 19 % of the students had problems representing both the additive principle and complementary probability, while 57 % knew how to respond correctly. However, 1 % did not answer the problem and, in fact, 12 % of the total number of students left at least one item unanswered from Item 4 onwards. Item 6, which is related to conditional probability, is one of the items with less than 50 % correct answers. Distractor B in this item was configured in such a way that the result arrived at by the student confuses the formula for independent events, and which 23 % of the students configured in this way.

However, for Item 7, which corresponds to independent events, nearly 80 % responded correctly, with only 5 % unable to identify the type of problem established. In addition, Item 8 established a problem to be resolved by means of Bayes' theorem, with the percentage of correct responses falling to 51 %, which was contrary to what was expected, due to the fact that, were Item 7 answered correctly, the student would have had to correlate the result to that obtained for Item 8, which did not happen. From these results, it is possible to infer that the students had different abilities in relating these concepts of probability to each other.

A binomial distribution problem was set in Item 9, which 53 % of the students answered correctly, while 21 % responded to the problem by attempting to find the correct value via probability mass function (PMF) and 19 % via accumulative probability. Therefore, 40 % had difficulty with binomial distribution problems. Strictly speaking, the basis of binomial distribution is the combinations. A very similar percentage is obtained to that for Item 1, which set a combination problem; however, a correlation was not found for this pair of items. However, for Item 10, which is a Poisson distribution problem that, like, Item 9, corresponds to discrete distribution, 70 % of the students responded correctly. One possible explanation for the variation of correct responses between questions 9 and 10 is that the students had greater difficulties calculating accumulated probabilities than PMF, as the former involve more operations.





**Figure 5.** Percentage of responses per item and option  
Resources: Prepared by the author

The above results show that, on average, 60 % of the students answered the items on the exam correctly. To corroborate these results, an RM was applied (Rasch, 1980), with binary (one and zero) coding applied, wherein a correct response is the equivalent to 1 and an incorrect response is the equivalent to 0. Applied to  $J$  students for a test consisting of  $I$  items,  $x_{ij}$  can be defined as the score obtained by the  $j$ th student on the  $i$ th item, which can be established as a logistic model with one parameter (1PLM) (Rasch, 1980; Sinharay, 2003; Thissen, Wainer, 2001):

$$P(x_{ij} = 1 | \theta_j, a_i, b_i) = \frac{e^{a_i(\theta_j - b_i)}}{1 + e^{a_i(\theta_j - b_i)}}, \quad 1)$$

where  $P(x_{ij} = 1 | \theta_j, a_i, b_i)$  is the probability of student  $j$  with a score of 1 versus 0 in item  $i$ ,  $a_i$  is the slope of the curve of the model,  $b_i$  is the difficulty of the item, and  $\theta_j$  is the parameter of ability for student  $j$ . The calculation was carried out via Marginal Maximum Likelihood (MML) under the supposition of normal standard distribution, using the eRm package (Mair et al., 2019) included in the R software.

Prior to modeling the data, the RM was compared to the two and three-parameter logistic models, although the latter parameter model was not ultimately considered due to the fact that its Hessian matrix did not converge on a stable solution. Thus, the RM was compared to the two-parameter logistic model (LM2P) via the Bayesian criteria (BIC), obtaining results of 3129.79 and 3157.48, respectively. As the two values are very similar, the correlation between the models was calculated in order to ascertain whether some difference existed. The correlation of 0.97 indicates no difference between the models; therefore, the better model was chosen according to the BIC. Once the best model – an RM – had been chosen, the statistics of fit were determined and then used to ascertain whether the data covered the RM requirements.

There are two statistics, known in the literature as outfit and infit (Boone, Noltemeyer, 2017; Luo et al., 2009), both of which compare observed and expected values (Wright, Masters, 1982). Outfit is based on the unexpected responses positioned some distance from the measure of difficulty for the item; however, this statistic has the power to eliminate an item solely due to some unexpected responses from subjects for whom the item may be very difficult or vice versa (Bond, Fox, 2015). Infit corresponds to those subjects who did not respond in the expected manner to those items whose difficulty level corresponds to their ability levels (Susac et al., 2018). Therefore, the results will be based on the infit statistics from our analysis.

These statistics should be standardized via the standard distribution Z or the Student’s t-test, for which the residuals should be obtained and used to calculate the mean squared error. See (Bond, Fox, 2015) for more information on this calculation. Table 6 presents the results for the parameter  $b_i$ , the standardized outfit and infit statistics, as well as their respective statistics and  $p$  values.

**Table 6.** Difficulty parameters and outfit and infit statistics

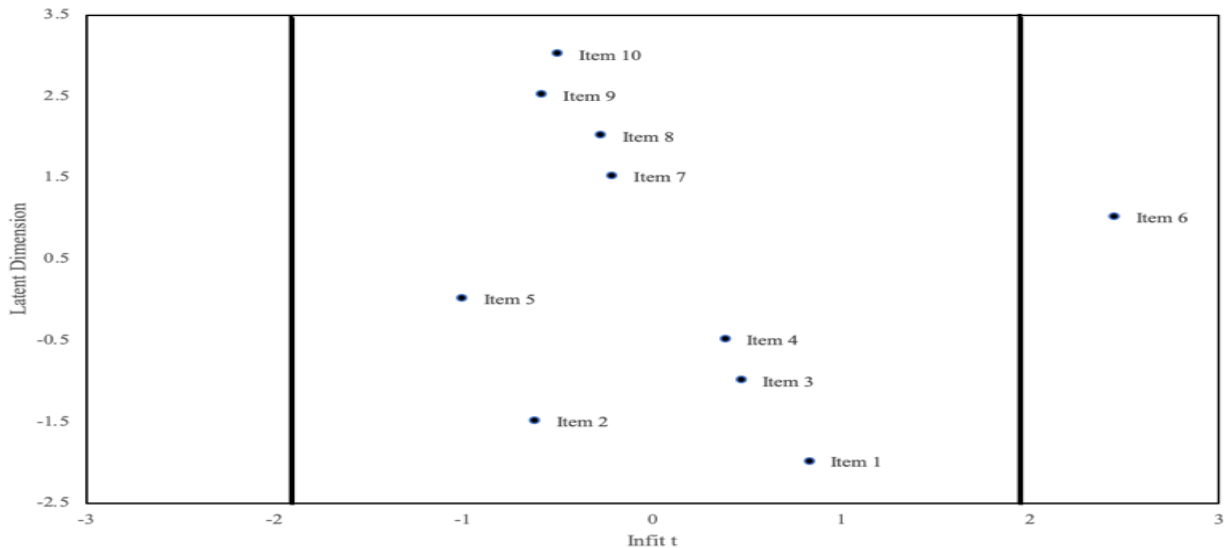
Item	$b_i$	Outfit	Outfit_t	Outfit_p	Infit	Infit_t	Infit_p
7	-1.479	0.884	-1.408	0.159	0.981	-0.204	0.838
4	-1.376	1.042	0.517	0.605	1.031	0.395	0.693
3	-1.089	1.020	0.283	0.778	1.032	0.480	0.631
10	-1.022	0.903	-1.517	0.129	0.967	-0.495	0.621
1	-0.345	1.025	0.488	0.626	1.043	0.839	0.401
5	-0.325	0.910	-0.183	0.608	0.950	-0.997	0.319
9	-0.133	0.946	-1.116	0.264	0.972	-0.579	0.562
8	-0.037	0.961	-0.815	0.415	0.987	-0.262	0.794
6	0.251	1.173	3.208	0.001	1.113	2.461	0.014
2	0.328	0.963	-0.726	0.486	0.968	-0.611	0.541

Source: Prepared by the authors own elaboration based on R results

Note: The calculations were undertaken considering a 5 % significance level.

The  $b_i$  results were ordered from the easiest item (Item 7) to the most difficult (Item 2) and can be found in Column 2 in Table 6. This index may take either positive or negative values, with values close to zero expressing average difficulty, negative values expressing below average difficulty (low difficulty), and positive values expressing above average difficulty (high difficulty). Thus, there are two items close to zero, items 6 and 2, which are of medium difficulty, coinciding with the percentage of questions answered correctly but below the average, as shown in Figure 5. Finally, Item 7 is the easiest, which coincides with the highest percentage of correct answers of all the items in Figure 5.

Item 6 in Table 6 does not seem to offer a good fit, due to the fact that the interval for standardized outfit and infit must be between -1.96 and 1.96 in terms of the  $t$  value, to a 95 % confidence level. However, rather than analyzing the probability exam itself, the present study sought to analyze the students' ability to understand different topics relating to probability, for which reason, Item 6 was not eliminated from the RM in order to then adjust the model. Figure 6 represents the behavior of the items according to  $\text{infit}_t$ .

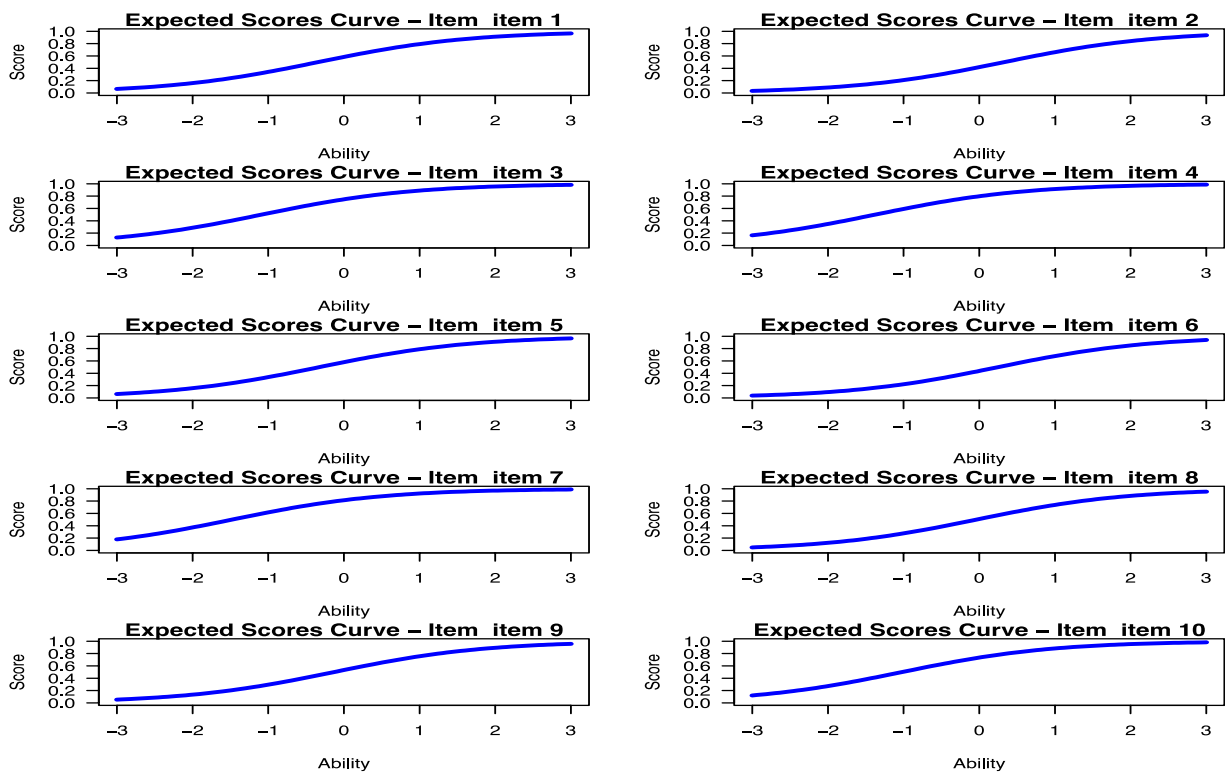


**Fig. 6.** Confidence interval for standardized infit statistics

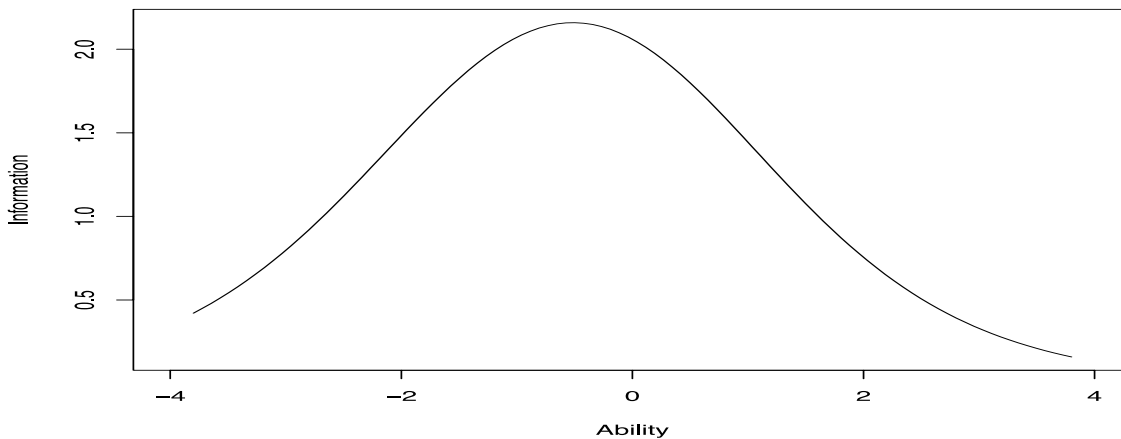
Source: Prepared by the authors based on R results

Finally, Figure 7 presents an illustration of the characteristic curves for each of the items (ICC). Axis  $x$  represents the students' ability, which is found to be between -3 and 3, while Axis  $y$  represents the probability of the student answering the item correctly (score). For example, Item 7 was considered the easiest, where a medium level-ability student has an approximately 80 % probability of correctly answering the item, while a student with a very low level of ability, for example -3, would have a 20 % probability of answering correctly. Analyzing Item 2, which was the most difficult according to parameter  $b$ , a medium level-ability student has an approximate probability of 40 % of answering correctly. On characteristic curves, these behaviors are similar to the percentage graphs shown in Figure 5.

Finally, the total information curve is calculated, as presented in Figure 8. The test used in the present research is calculated at an interval of (-10, 10) (Rizopoulos, 2017), while applying the test at an interval of (-4,0.5) obtained a total information result of 67.63 %, which indicates that there was more information for students with low ability levels than for students with a high ability. From this result, it can be concluded that the test applied is a test for students with a low level of ability; therefore, there are various factors that should be analyzed in the future, such as the students' performance on the degree program and the type of teaching they have been receiving.



**Fig. 7.** ICCs for each of the items  
 Source: Prepared by the authors based on R results



**Fig. 8.** Test Information Function  
 Source: Prepared by the authors based on R results

**4. Conclusion**

This article presents the design of a 10-question exam for measuring students’ ability in topics of probability and which was aligned to CUCEA’s learning objectives. The evidence obtained shows that CUCEA students have more difficulty – low grades – in the area of probability than in the area of descriptive statistics, both in the DEs and the annual statistics tournaments.

The results indicate, descriptively, that an average of more than 60 % of the students answered the items on the test correctly. Two questions were answered incorrectly by seven and five percentage points below the average, while another two questions were answered correctly, above the average by close to one and three percentage points, respectively. Homogeneity tests were undertaken between the means, showing that they were homogeneous by sex, but heterogeneous by undergraduate degree program.

Subsequently, the objectives of the items were analyzed along with their respective correct responses and distractors. While both negative and positive correlations between items were obtained, those pairs that were positively correlated did not have any qualitative relationship, as they corresponded to distinct topics. A correlation was found between items 6 and 2, which are item pairs and, for which, 50 % correct answers or above were obtained.

These results enable the application of an RM to determine the students' ability, revealing two difficult items, items 2 and 6. The results for Item 6 are not statistically significant, while Item 2 presented a percentage of correct answers below the average, which is statistically significant.

Therefore, the descriptive results prove that the students did have the ability to correctly answer probability questions in the economic-administrative sciences, although they did face certain difficulties with conditional probability and permutation exercises. At the same time, the RM results confirm that the students faced difficulties in solving conditional probability problems, meaning that this test could be used as a base by the SA for the construction of a reliable bank of questions for the topic of probability that would help to improve both the DEs and the STs.

Moreover, analysis of the items on the probability exam enabled the detection of the students' difficulties and their most frequent errors, which can be used to assist professors in reinforcing learning in these topics. Moreover, it was noted that the items on the probability exam coincided with the study programs currently in force and were aligned with the results obtained for institutional learning.

## **5. Acknowledgments**

We would like to thank Professor Robert delMas of The University of Minnesota for his comments on the paper.

## **References**

- [Academia de Estadística, 2018](#) – Academia de Estadística (2018). Actas de academia del departamento de métodos cuantitativos del CUCEA de la Universidad de Guadalajara.
- [Aziz et al., 2013](#) – Aziz, A., Salleh, T.S.A., Khatimin, N., Zaharim, A. (2013). Evaluating multiple choice items in determining quality of test. TALE2013 – IEEE International Conference on Teaching, Assessment and Learning for Engineering: 565–569. DOI: <https://doi.org/10.1109/TALE.2013.6654501>
- [Batanero et al., 2016](#) – Batanero, C., Chernoff, E. J., Engel, J., Lee, H. S., Sánchez, E. (2016). Research on teaching and learning probability (G. Kaiser, Ed.). DOI: [https://doi.org/10.1007/978-3-319-31625-3\\_1](https://doi.org/10.1007/978-3-319-31625-3_1)
- [Batanero et al., 2005](#) – Batanero, C., Henry, M., Parzys, B. (2005). The nature of chance and probability. In G. A. Jones (Ed.), *Exploring Probability in School: Challenges for Teaching and Learning*: 15-37. DOI: [https://doi.org/10.1007/0-387-24530-8\\_2](https://doi.org/10.1007/0-387-24530-8_2)
- [Bond, Fox, 2015](#) – Bond, T.G., Fox, C.M.B. (2015). *Applying the Rasch: fundamental measurement in the human sciences* (3rd ed.). New York: Routledge.
- [Boone, Noltemeyer, 2017](#) – Boone, W.J., Noltemeyer, A. (2017). Rasch analysis: a primer for school psychology researchers and practitioners. *Cogent Education*, 4(1): 1-13. DOI: <https://doi.org/10.1080/2331186X.2017.1416898>
- [Borovcnik, 2011](#) – Borovcnik, M. (2011). Strengthening the role of probability within statistics curricula. In C. Batanero, G. Burrill, & C. Reading (Eds.), *Teaching Statistics in School Mathematics-Challenges for Teaching and Teacher Education: A Joint ICMI/IASE Study*, Vol. 14: 71-83. DOI: <https://doi.org/10.1007/978-94-007-1131-0>
- [Carolyn, Kirk, 2001](#) – Carolyn, K., Kirk, S. (2001). A new approach to learning probability in the first statistics course. *Journal of Statistics Education*, 9(3): 1-25. DOI: <https://doi.org/10.1080/10691898.2001.11910539>



**Del Toro, Ochoa, 2010** – Del Toro, H.L., Ochoa, M.B. (2010). Exámenes departamentales en el CUCEA: el caso del departamento de métodos cuantitativos. XIV Congreso Internacional de Investigación en Ciencias Administrativas [Electronic resource]. URL: [http://acacia.org.mx/busqueda/pdf/EXAMENES\\_DEPARTAMENTALES.pdf](http://acacia.org.mx/busqueda/pdf/EXAMENES_DEPARTAMENTALES.pdf)

**Flores et al., 2014** – Flores, B., García, J.I., Sánchez, E. (2014). Avances en la calidad de las respuestas a preguntas de probabilidad después de una actividad de aprendizaje con tecnología. In M.T. González, M. Codes, D. Arnau, T. Ortega (Eds.), *Investigación en Educación Matemática XVIII*: 307-316. Salamanca: SEIEM.

**Landin, Sánchez, 2010** – Landin, P., Sánchez, E. (2010). Niveles de razonamiento probabilístico de estudiantes de bachillerato frente a tareas de distribución binomial. *Educação Matematica Pesquisa*, 12(3): 598-618.

**Lawley, 1938** – Lawley, D.N. (1938). A generalization of Fisher's z test. *Biometrika*, 30(1/2): 180-187. DOI: <https://doi.org/10.2307/2332659>

**Luo et al., 2009** – Luo, X., Cappelleri, J.C., Cella, D., Li, J.Z., Charbonneau, C., Kim, S.T., Motzer, R.J. (2009). Using the rasch model to validate and enhance the interpretation of the functional assessment of cancer therapy-kidney symptom index - disease-related symptoms scale. *Value in Health*, 12(4): 580-586. DOI: <https://doi.org/10.1111/j.1524-4733.2008.00473.x>

**Mair et al., 2019** – Mair, P., Hatzinger, R., Maier, M. J., Rusch, T., Debelak, R. (2019). Package 'eRm' [Electronic resource]. URL: <https://cran.r-project.org/web/packages/eRm/eRm.pdf>

**Pillai, 1955** – Pillai, K.C.S. (1955). Some new test criteria in multivariate analysis. *The Annals of Mathematical Statistics*, 26(1): 117-121. DOI: <https://doi.org/10.1214/aoms/1177728599>

**Rasch, 1980** – Rasch, G. (1980). Probabilistic models for some intelligence and attainment tests. Chicago, US: The University of Chicago Press.

**Raudzatul, 2016** – Raudzatul, M.S. (2016). Application of Rasch measurement model in evaluating student performance for foundation of computing II. In C.Y. Fook, S. Narasuman, S.B. Abdul Rahman, G. K. Sidhu, & L. L. Fong (Eds.), 7th International Conference on University Learning and Teaching (InCULT 2014) Proceedings. DOI: <https://doi.org/10.1007/978-981-287-664-5>

**Rizopoulos, 2017** – Rizopoulos, D. (2017). Package 'ltm' [Electronic resource]. URL: <https://github.com/drizopoulos/ltm>

**Roy, 1957** – Roy, S. (1957). Some aspects of multivariate analysis. New York: Wiley.

**Sánchez, Inzunza, 2006** – Sánchez, E., Inzunza, S. (2006). Meanings' construction about sampling distributions in a dynamic statistics environment. Proceedings of the Seventh International Conference on Teaching Statistics: 1-6. Salvador (Bahia), Brazil.

**Sinharay, 2003** – Sinharay, S. (2003). Bayesian item fit analysis for dichotomous item response theory models [Electronic resource]. URL: <http://www.ets.org/Media/Research/pdf/RR-03-34.pdf>

**Susac et al., 2018** – Susac, A., Planinic, M., Klemencic, D., Milin Sipus, Z. (2018). Using the Rasch model to analyze the test of understanding of vectors. *Physical Review Physics Education Research*, 14(2): 1-6. DOI: <https://doi.org/10.1103/PhysRevPhysEducRes.14.023101>

**Thissen, Wainer, 2001** – Thissen, D., Wainer, H. (2001). Test scoring. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

**Wilks, 1932** – Wilks, S.S. (1932). Certain generalizations in the analysis of variance. *Biometrika*, 24(3/4): 471-494. DOI: <https://doi.org/10.2307/2331979>

**Wright, Masters, 1982** – Wright, B., Masters, G. (1982). Rating scale analysis: Rasch measurement. (1st ed.). Chicago: Mesa Press.



Copyright © 2019 by Academic Publishing  
House Researcher s.r.o.

All rights reserved.

Published in the Slovak Republic

European Journal of Contemporary Education

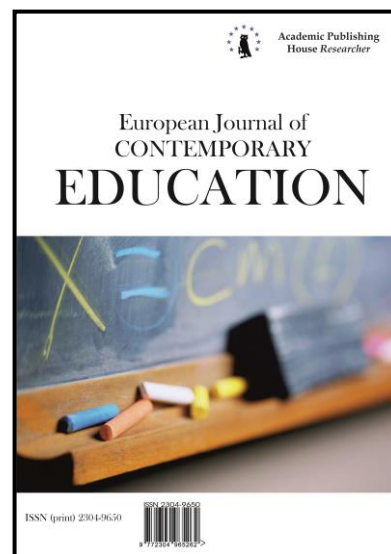
E-ISSN 2305-6746

2019, 8(4): 879-888

DOI: 10.13187/ejced.2019.4.879

[www.ejournal1.com](http://www.ejournal1.com)

**WARNING!** Article copyright. Copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of the violation of the author(s) rights will be pursued on the basis of international legislation. Using the hyperlinks to the article is not considered a violation of copyright.



## Students' Experiences of Philosophy Classes in Higher Education: A Case Study

Tomas Saulius <sup>a</sup>, Romualdas K. Malinauskas <sup>a, \*</sup>

<sup>a</sup>Lithuanian Sports University, Lithuania

### Abstract

The current paper addresses research question of how do students of one university (in our case study – Lithuanian Sports University, LSU) experience the educational effect of introductory philosophy course. To answer this question, method of interpretative phenomenological analysis (IPA) was employed. In accordance with this qualitative approach, we used method of purposive sampling. Sample of current study consist of 8 participants (3 females and 5 males). All participants are first year undergraduate students form study program “Physical education and sport” (continuing studies) in LSU. As a data collection method, semi-structured interview was applied. In our research it was found that students more tend to share their cognitive experience of philosophy classes than their emotional experience. Among nine qualitative categories (codes) which are the most prominent in our interview records, two of them were found to be especially frequent – “Philosophical technical language poses a great challenge for a common reader” and “In philosophy everything has a deeper meaning”.

**Keywords:** higher education, philosophy classes, physical education, critical thinking.

### 1. Introduction

In 20<sup>th</sup> century philosophy completely lost its previous privileged status as “the Mistress Science”. The very idea of hierarchy of sciences looks suspicious to contemporary educational theoreticians and practitioners. With the exception of those who dedicated themselves to the academic philosophy as their career, students make acquaintance with philosophy mostly during introductory philosophical classes (such standard courses as “Introduction to philosophy”, “Central themes in philosophy”, “Introduction to philosophy of science” etc.). They belong to the “General University Studies” (GUS) component of the higher education. Keeping in mind diversity of the notions and models of university (*artes liberales* university, corporate university, specialized university, research university), the relevance of introductory courses of philosophy begs a question (needs a further legitimation). There are important indications that philosophy classes, both in

---

\* Corresponding author

E-mail addresses: [tomas.saulius@lsu.lt](mailto:tomas.saulius@lsu.lt) (T. Saulius), [romas.malinauskas@lsu.lt](mailto:romas.malinauskas@lsu.lt) (R.K. Malinauskas)

school and in university, promote critical thinking skills (Tallent, Barnes, 2015; Zare, Mukundan, 2015; Tsevreni, 2016). Recent researches suggest that philosophy classes are important for moral development of students (Torabizadeh et al., 2018). Finally, researchers point to the importance of philosophy courses for science education (Burgh, Nichols, 2011; Archila, 2015).

Not to diminish the scientific value of these conclusions, there are a few further points worth considering. First of all, we can safely assume that the effect of philosophical classes varies according to which model of university is being implemented in a particular institution and, in the case of specialized universities, what is specialization of a particular institution. To put it otherwise, philosophy, as an academic discipline, must conform to mission and strategy of a particular university. Thus, philosophy classes have different aims and outcomes in, say, technological and sports universities. Most importantly, there is an unavoidable gap between officially declared educational outcomes of philosophy courses and their effect from the subjective point of view of students. Personal experience of students is the alpha and omega of meaningful education (Ausubel, 2000).

Keeping in mind all these considerations, in the current case study we address the following **research question**: How do students of Lithuanian Sports University (LSU) experience the educational effect of introductory philosophy course?

To answer this research question, firstly, in our paper we will discuss the very concept of philosophical education. There are different conceptions of this kind of intellectual training, and one can rightfully suppose that these in one way or another influence educational presuppositions, methodic preferences etc. of philosophy teachers and, in turn, experiences of their students. Secondly, we are to focus on our empirical research, that is, describe its methodology, results, and discuss their scientific significance, as well as important limitations.

In the current study, qualitative approach was employed. In accordance with this approach, we used method of purposive sampling. Sample of current study consist of 8 participants (3 females and 5 males). All participants are first year undergraduate students from study program “Physical education and sport” (continuing studies) in Lithuanian Sports University (LSU). As a data collection method, semi-structured interview was applied. Participants were asked 7 open ended questions prepared in advance and a range of supplementary questions intended to reveal their personal experience of philosophy classes. Interview took place after completion of introductory course of philosophy.

## 2. Literature review

In what follows, will overview major trends in philosophical education. One should be careful not to confuse “philosophical education” with “philosophy of education”, however close these two notions are. “Philosophical education” is an actual involvement of students in the broad area of ideas and thinking techniques which belong to different western and eastern schools and traditions. “Philosophy of education” designates general ideas concerning matters of teaching and learning which were argued for in these different schools and traditions. These concepts are close, because one’s allegiance to a philosophical school and tradition shapes substantially one’s profile as a “teacher of philosophy”.

Broadly speaking, the main aim of education in any field of expertise is to share relevant professional experience and knowledge. What about philosophy? Curious enough, Socrates, ancient Athenian philosopher, remains an iconic example of philosopher and teacher (e.g. Gose, 2009), though, as textual evidence indicates, he is inclined to believe that he “knows nothing”, there is nothing he could teach about (Plato, 1997). He invites his fellow Athenians and honorable guests to discuss live ethical issues, and the mere participation in these conversations seems to be of educational value. It seems, there is no external value attached to them: almost always Socratic conversations, or “refutations” (Gr. *elenchoi*), as Plato and Aristotle calls them, end without any evident positive conclusion (Benson, 2000).

For present purposes, it will suffice to introduce two relevant attempts to revive Socratic education in the informational era. The first attempt is a class activity called “Socratic seminar” (or “Socratic circle”, “Socratic teaching”) and defined, surprisingly quite uniformly, as “exploratory intellectual conversation centered on a text” (Lambright, 1995: 30); “structured conversations about selected texts and the important ideas imbedded within them” (Mangrum, 2010: 41). The general structure of this activity is following (Moeller, Moeller, 2002; Copeland, 2010). Before

seminar, students are given a text which they must read at home. During seminar, a few students, that is, active disputants, composes an “inner circle” (so-called “fishbowl”). The rest of the class, that is, observers, make “outer circle”. Their function is to present an objective evaluation of the discussion in the “inner circle”. The main function of the teacher is to initiate and maintain lively discussion among student in the “inner circle”. He introduces different text comprehension questions, but he is strongly recommended to suspend his own knowledge and judgements concerning the text he is asking about. Thus, like historical Socrates, the teacher “knows nothing” and focuses on beliefs and ideas of his students.

Many educators are excited about this efficiency of this method as a discussion and competence promotion tool, for example, in the world history classes (Thomas, Goering, 2018) or even in teachers’ professional development sessions (Kayi-Aydara, Goering, 2019). Most importantly, students themselves do not identify Socratic seminars as an activity of teaching (at least, when they view these seminars on the tape, that is, approach them from the “third person perspective”) (Bar Tikva, 2010). However, important differences between historical Socratic education and contemporary Socratic seminars should be noticed. Socrates (at least, as depicted by Plato) is interested in individuals, not texts. The main motto of Socratic questioning is “know yourself” (Gr. *gnothi seauton*) (Plato, 1997: 510), that is, it aims at self-consciousness of interlocutors (students). Secondly, today Socratic seminars encourages expression of personal beliefs, propagate the idea that in democratic society every individual has a right to entertain and share his own beliefs on very different matters (e.g. Copeland, 2010: 107). However, Socrates tries to dismiss all false beliefs, to root them out of the belief system of his interlocutors, even if they persist in holding some of these true. Socrates makes no compromises, even at cost of “pedagogical tact”. Finally, Socrates lives and philosophizes in the atmosphere of the “shame culture”, thus, he tries not only reveal his interlocutors’ ignorance but also to make them feel ashamed of it in the eyes of an audience. Today such a “shock therapy” seems unacceptable. Thus, it is rather questionable to what extent contemporary “Socratic seminars” are “authentically Socratic”.

M. Lipman has made another important attempt to revive the spirit of Socratic *paideia*. The pivot of his whole enterprise, entitled “Philosophy for Children” (P4C), is the idea of “a community of inquiry” (Lipman, 2003: 101 ff.). As we saw, Socratic dialogical teaching, somehow resembling theatrical performance, involves not only Socrates himself and his interlocutors, but also different audiences (“spectators”) which export social influence on the both parts of dialogue. Lipman stresses the fact that that thinking in general and philosophical reasoning in particular is not confined to the subjective “inner” space, but proceeds in “external” world, in the intersubjective medium of shared language, values and knowledge. It is a “distributed thinking” or “shared cognition”. “<...> a classroom discussion can be a good example of distributed thinking, because the members of the class answer one another’s questions, emulate others’ questions, build on one another’s inferences, furnish each other with examples and counterexamples, help others construct definitions, and so on” (Lipman, 1998: 277).

Thus, Lipman’s educational desideratum is a creation of community (at least, at the scale of a classroom) in which rational and collaborative inquiry is the main form of social existence of individuals. Such a community has following attributes (Lipman, 2003: 95-100): “the quest for meaning” (students “try to squeeze the meaning out of every sentence, every object, every experience”); “reasonableness” (disposition to base one’s decisions and judgements on reliable facts); “questioning” (education centers on what students are perplexed and puzzled about); “impartiality” (eagerness to overcome limitations of one’s subjective perspective); “thinking for oneself” (avoidance of conformity and blind inertness of thought). In many of these aspects Lipton’s project resembles that of so-called “the critical thinking movement”, as represented by R. Ennis and others, though Lipman claims that “the critical thinking approach was, by itself, narrow and skimpy” (Lipman, 2003: 3). “Critical thinking” (which involves logical and evaluative powers) should be supplemented with “creative thinking” (dedicated to both inventing and discovering), as well as “caring thinking” (involving empathic, emotional, pro-active and normative dimensions) (Lipman, 1995). Lipman clearly prioritize ideal of philosophy over that of critical thinking: “Philosophy helps children become imaginative, creative and appreciative, caring thinkers, and not just critical, analytical thinkers” (Lipman, 2008: 150). He insists that philosophy is not a body of *theoretical* knowledge which needs a vertical transmission from teacher to student,



but an actual and collaborative *practice* of thinking, that is, horizontal interaction between teacher and student (Ibid.). Thus, Lipman's project exemplifies "learning by doing" *par excellence*.

Some scholars argue for intrinsic affinities between Lipman's P4C project and Socratic-Deweyan practical philosophy (Daniel, Auriac, 2011). Others explore the benefits of the "dialogical approach", as implemented by Lipman and others, in contemporary education (Barrow, 2010). Even if Lipman's project is deeply rooted in the soil of western (inherently "Greek") culture, it appears to be effective in different cultural settings: from example, Hong Kong secondary school students, who received P4C lessons, had better scores in *New Jersey Test of Reasoning Skills* (NJTRS) than their peer who were not exposed to educational intervention (Lam, 2012). Of course, in contemporary apology of "philosophical education", nor Lipman himself, nor his admirers, intend to revive ancient Greek notion of "philosophy for the sake of philosophy" or "philosophical way of living" (Gr. *bios theōretikos*). It would be an anachronism. As in the case of "Socrates circles", ancient origins of philosophy and philosophical education, still captivating examples of Socrates dialogues and of Socrates himself, do not preclude philosophical *paideia* from development and adaptation in the ever-changing social-cultural environment. "Philosophy for Children" implies philosophy serving children's needs which are nothing but the needs of inherently rational and social beings.

In sum, both "Socratic circles" and Lipman's project of "philosophical community of inquiry" draw inspiration from Socratic *paideia*. In accordance with the values and interests of modern democratic society, these educational initiatives aim at the formation of self-conscious, socially active and morally responsible individual. Philosophy classes are intended to habituate students in the inquiry for meaning and rational argument.

### 3. Materials and methods

In the current paper **qualitative approach** was adopted. Broadly speaking, in social science research this approach enables to focus on the lesser-scale phenomena in its immediate context (real word situations), gather a preliminary data for further empirical investigation and theory development (Creswell, 2016). Methodologists distinguish different designs of quantitative research serving different purposes. Our research was designed as **interpretative phenomenological analysis (IPA)**. As such, it focuses on lived personal experiences of participants and how participants themselves are making sense of their experiences (Smith, Osborn, 2003). As for terminology, here "phenomenological" means that a researcher intends to suspend his own point of view and let participants "speak for themselves"; "interpretative" means that researcher is not satisfied with particularities and tries to reveal basic structures immanent in participants' experiences; that is, he intends to make sense of participants' subjective perspectives in more general terms (Frost, 2011; Pietkiewicz, Smith, 2012; Creswell, 2016).

In our research, method of **purposive sampling** was applied, as it is recommended for IPA (Frost, 2011). The group of first year undergraduates from study program "Physical education and sport" (continuous studies) was purposively chosen for our research. Total size of this group is 15 students, however 7 of them refused to participate or were unavailable at time of research. Thus, actual sample of our research – 8 (3 females and 5 males). Average age of participants is 20 years. All participants had an introductory course of philosophy and were interviewed thereafter. In this research, as in other IPA, the basic motive which lies behind sampling procedure is to find "a more closely defined group for whom the research question will be significant" (Smith, Osborn, 2003: 56).

For a data collection, method of **semi-structured interview** was employed, again, in accordance with basic methodological recommendations for IPA (Frost, 2011). Participants were asked 7 basic questions (for example, *Wat was your conception of philosophy before your philosophy classes?*), prepared in advance, and a range of supplementary questions intended to reveal various specific aspects of participants' personal experience (for example, *What do you mean by "shocking claim"?*). Basic questions were prepared taking into account conclusions of the previous studies on the effects of philosophy classes (Marnburg, 2003; Rashtchi, 2011; Lam, 2012; Morais et al., 2017). Participants were interviewed face to face for 42 minutes in average. All interviews were audio recorded and then transcribed verbatim. In the research, each participant was given a code names to meet anonymity requirement.



#### 4. Results

Application of IPA in social sciences starts with acquirement of primary data, usually in a form of “first-person narrative”. “Within IPA, language is taken to be a conventionalised expression of experience <...>” (MacDonald, 2016: 24). Then, IPA proceeds as an interpretative attempt to reveal common patterns in idiosyncratic pieces of information through (a) distinguishing and (usually) coding explicit and implicit units of meaning (significant propositions), (b) examination of similarities and differences between all these units, discarding repetitive codes, (c) subsuming codes to broader categories (themes, “meta-codes”) (Charmazet al., 2011; Frost, 2011; Creswell, 2016).

In our research, three main themes were distinguished – “Philosophy as unique cultural phenomenon”, “Philosophy as an intense intellectual effort”, and “Philosophy as experience of bafflement and uncertainty” (see Table 1).

**Table 1.** Students’ experiential views on philosophy after introductory philosophy classes in the university

Themes	Codes	Distribution of codes among participants
Philosophy as unique cultural phenomenon	Philosophy deals with texts, not real things	A3, A7, A8
	Philosophical enquiries are imaginative and inconclusive	A2, A3, A5, A8
	The nature of philosophy is mysterious, undefined	A1, A5, A7
Philosophy as an intense intellectual effort	Philosophical technical language poses a great challenge for a common reader	A1, A3, A4, A6, A7, A8
	Philosophy requires to use a common language more cautiously	A1, A3, A5, A6
	“In philosophy everything has a deeper meaning”	A1, A2, A3, A5, A6
	Philosophizing demands (teaches) logical argumentation.	A2, A3, A4, A8
Philosophy as experience of bafflement and uncertainty	Philosophy questions the basic moral values	A1, A2, A4, A6
	Philosophy contradicts personal religious convictions	A1, A7, A8

Thus, the first theme “Philosophy as a unique cultural phenomenon” encompasses three codes (sub-themes). The most illustrative example of the first code is following:

“By ‘philosophizing’ I mean reading a lot. Really, a lot. If you want to be a good in philosophizing, you must run away from whole world else and read, read. <...> You must read, because you must know that one philosopher had said this and this, but another philosopher had written something contrary. If you just mention what the first philosopher has said, anyone can come to you and ask: ‘Why didn’t you mention what another philosopher had thought?’ <...> the one wins [an argument] who has read more than others.” (A8)

The second code is quite frequent among participants: as we can see, it is a notion common for half of participants. The best exemplification of the second code is the following fragment:

“I just imagine how these [contemporary] philosophers do their discoveries. They don’t need microscopes, telescopes, anything of the kind. They just can sit on the chair and imagine that the world is not real, that people and things are not real. Then they write articles, books, and student must read them.” (A5)

On further questioning, participants A2, A3, A5, and A8 agreed on the importance of imagination for scientific education and scientific discovery. For two of them (A5, A8) the major

role of “thought experiments” in philosophy remained a rather negative aspect of the later. Other two participants described this feature of philosophy more positively: as a “training of imagination” (A2) or as “something that helps scientists to discover new things” (A3).

To provide an example of the third code (“The nature of philosophy is mysterious, undefined”), we can make the following quotation:

“I thought that philosophers believe in the existence of God and mostly talk about these matters, that, in fact, everybody believes in something, and you can all it “God” or “Buddha” or “Jesus” or “Nature”. But during lectures we learned that many philosophers deny God. <...> Philosophy is nether religion nor a science. ‘Neither fish nor meat’, as saying goes. <...> or maybe it is both [religion and science].” (A7)

In two cases (A5, A7) of three, “mysterious” nature of philosophy, its undefined position among other social-cultural institutions was identified (after supplementary questioning) as its negative aspect. Only in one case (A1) it was given a positive evaluation noting that “unclear things are attractive to most people”.

As to the second major theme, it covers four codes. The first of them, that is, “Philosophical technical language poses a great challenge for a common reader”, marks the point which appeared to be the most significant for participants. Even six (A1, A3, A4, A6, A7, A8) out of nine interviewed students found it difficult to read philosophical texts because of technical terms and specific style employed in them. The following quote can be given as an illustration:

“I like reading. I read constantly. Books, internet, phone ... Now we must read a lot of scientific papers for psychology classes and for other teachers. I read something on my phone even taking a bath. <...>. But when tried to read something for philosophy seminar, I realized that I understood less than half of what I had read. <...> You need to translate it from Lithuanian into ‘normal Lithuanian’. And you must put an enormous effort in it. Reread many times almost every sentence.” (A1)

After being reminded that scientists also use difficult terminology, all six participants showed little inclination to change their opinion about philosophical language. One participant noted (A1) that “scientist cannot call <...> catalysis by another term, because otherwise confusion would occur”. Other two participants remarked that philosophers can change their mode of expression at will (A6, A8). Three others (A3, A4, A7) showed no inclination to discuss the point further.

Code “Philosophy requires to use a common language more cautiously” marks another quite frequent (A1, A3, A5, A6) notion in participants’ responses. In this case, the main idea appears to be that philosophy is occupied with “recognizing different senses of the same word” (A1). It tends to “make communication better by sorting out everything into different boxes” (A3). Philosophers are sensible to the fact “that one cannot know what another person has in mind when he says that something is ‘bad’, ‘fashionable’ <...>” (A6). In general, participants (A1, A3, A6) identified it as a positive aspect of philosophy. However, one participant (A5) insisted that philosophical concern about flexibility of language is “an extreme exaggeration”, because “we can communicate without any problems, even we haven’t read a dictionary or know nothing about teachings of philosophers”.

Code “In philosophy everything has a deeper meaning” refers to notion which is the second in frequency and importance (A1, A2, A3, A5, A6) after earlier mentioned emphasis on “unreadableness” of philosophical texts. The basic idea can be illustrated with following quote:

“In philosophy everything has a deeper meaning. <...> They [philosophers] always suspect that something lies beneath a surface. Say, I decided to post on Facebook that, for example, I have a depression today. Just feeling upset, staying at home and watching TV. <...> Some will necessary bombard me with questions about the cause of my depression. It can have a cause. Or it can just happen, without any cause. <...> Philosophers are doing the same thing, in my opinion. <...> We had to do the same thing.” (A5)

In this case, four students (A1, A2, A3, A6) agreed that it is a positive aspect of philosophy because “it is common to philosophers, scientist and <...> all reasonable persons” (A2), it “teaches to recognize what is foolish to believe” (A3), it encourages “to be like a detective <...> in various situations” (A1). On further questioning, one participant (A5) insisted that philosophy resembles “looking for black cat in black room” (A5). However, two participants explicitly reported negative personal experiences associated with their attempts “to think in philosophical way” (A4): it was “exhausting” (A4), “unthinkably difficult” (A6).

The final notion covered by the second theme can be given a following illustration:

“I never thought that it can be so difficult to argue for my opinion. Not just saying something on the topic, but finding proofs, very strong proofs. <...> It is a very good lesson that you must know in advance what do you want to say. You need strong logic. <...> Yea, philosophy can tech it.” (A 6).

Four participants (A2, A3, A4, A8) initially emphasized argumentation as an essential aspect of philosophical education. Three of them characterized it in overwhelmingly positive terms. It is argumentation skills that everybody must possess in order “not to get lost in discussion and in one’s own thoughts” (A2). Moreover, “many students will forget everything about teachings of Japers [i.e. Jaspers] <...>, but they will remember that if you want to find truth you should look for evidences” (A4). Only in one case philosophical occupation with arguments was seen as an important flaw: philosophical reasoning resembles “a puppy who tries to catch his tail”, philosophers argue not to find a truth, but “to rise their prestige” (A8).

Let’s discuss two codes included in the last theme, that is, “Philosophy as experience of bafflement and uncertainty”. The first of two, namely, “Philosophy questions the basic moral values”, can be illustrated with following quotation:

“For everybody the most important thing is his health and the next important thing is money. <...> Philosophers teaches that money is not important at all. <...> At first, it was ridiculous. Why are you working if not for making money? <...> I just lied down [at night] and tried to find at least one proof why it [money] is not important” (A6).

Two participants expressed puzzlement with the “fact” (as they saw it) that philosophers deny value of material goods (A4, A6). After reminding that, for many philosophers, material goods are only “second order goods”, both students insisted that philosophers’ value system is unthinkable. They are “UFO-nauts” (A4) in an offensive sense. Other two students (A1, A2) described their encounter with philosophical reflection of morality in positive terms. Philosophy encourages to reevaluate one’s moral priorities “at the face of illness and death” (A2) or “listening to one’s conscience” (A1).

Finally, as to the last notion included in the third theme, three participants (A1, A4, A7) stressed the point that their encounter with philosophy has more or less confronted with their religious convictions thus bringing about specific experience. This notion can be illustrated with following example:

“I believe in God and it helps me in life and in sport. <...> it is more philosophy than religion because you cannot believe blindly without any proof. <...> you must seek for evidences that what you believe is true. <...> it bothered me [during philosophy lecture] how they [philosophers] can speak about meaning of something, about having a morality <...> when they hold it possible to deny reality of God” (A7).

Two participants (A7, A8) described philosophical reflection of religious beliefs (during their classes) in negative terms. Philosophers fruitlessly try to find rational arguments for everything, but “there is something you cannot proof and can only believe”, for example, “you cannot proof that you will be alive tomorrow or a day after tomorrow” (A8). One participant (A1) pointed out that philosophical criticism is useful for one’s spiritual development. Some philosophical arguments make one face important questions about motivation one’s religious beliefs and practices: “Maybe you believe in something what Bible says only because it helps you to cope with psychological stress?”, “Look, I am going to church, I am a good person!” (A1).

In general, participants tended to talk more about their cognitive experience – that is, “meaning-experience, thought-experience, understanding experience” (Strawson, 2011: 286) – than their emotional experience, “sense/feeling experience”. Among all nine codes, two of them were given especially strong emphasis by participants – “Philosophical technical language poses a great challenge for a common reader” and “In philosophy everything has a deeper meaning”.

## **5. Discussion**

In what follows we briefly address a question how our findings square with results of other studies. The main point of interest here is a multidimensional view of the phenomenon one can get by connecting quantitative and qualitative perspectives.

In general, studies report positive effect of philosophical classes on the intellectual and moral development of students. Usually this effect is being described in terms of promotion of “critical thinking” or “argumentation skills”. For example, in quite recent study (Morais et al., 2017)

conducted in Portugal researches report that during their philosophy classes (as a complementary discipline), in which “the constructive controversy method” was being applied, secondary school students improved in argumentative essay writing. The effect was determined by measuring such parameters as an “Clarification of the issue”, “Construction of arguments with support the thesis”, “Consideration of objections” (suggested by Toulmin’s model). According to another study (Burke et al., 2014), psychology classes, designed to promote critical thinking skills, only reduce undergraduates’ beliefs in paranormal phenomena, whereas philosophy classes also increase general critical thinking skills (on *Watson–Glaser Critical Thinking Test*). Attempts to integrate philosophical approach into environmental education results in increased students’ abilities to “research, analyze and synthesize their own knowledge”, their “their critical thought and collaborative skills” (Tsevreni, 2016: 10). “Socratic dialogue” was recognized as efficient tool for promotion of critical thinking, as well as social and emotional skills in teacher education (Knezic et al., 2010). These findings square well with the important result of our current study, namely, that five (A1, A2, A3, A5, A6) out of eight participants emphasize the search for “deeper meaning” as an essential feature of philosophy. In this respect, one important point should be mentioned, namely, that “critical thinking” itself can be defined as “sense-making” activity (Maloney, 2015) or as “in-depth thinking” (“deep thinking”) (Mullins, 2002). These are modern reflections of the same ancient idea that “the unexamined life is not worth living for men” (Plato, 1997: 33). Philosopher is an exemplary critical thinker who is used to ask “What does it mean?”, who’s main concern is “to question and understand very common ideas that all of us use every day without thinking about them” (Nagel, 1987: 5). Participants themselves used “to philosophize” (or “to do philosophy”) interchangeably with “to think critically” (A1, A2, A6). As we saw they emphasized a close link between philosophizing and argumentation (A2, A3, A4, A8), with the last being the most important concern in the ideology of “critical thinking movement”.

As we saw earlier, two-thirds of participants (A1, A3, A4, A6, A7, A8) emphasized “unreadableness” of philosophical texts in the first contact with this kind of literature (all participants admitted that they hadn’t been familiar with philosophical texts before their philosophy classes). It is important although unexpected finding of our research. For example, authors of *The Philosophy Skills Book* (Finn et al., 2012) suppose that various reasons can render philosophical texts “impenetrable”: abstractness of philosophical terminology, flexibility of natural language, innovative usage of natural language, poor translations etc. In our study participants were not explicit about particular reasons and reflected problem in rather general terms: for example, “I just cannot understand what I read” (A1), “it is a mash of words” (A4), “a bird language” (A4, A7), “there is no chance to understand it” (A7). At this point, we can only speculate, because in our study no preliminary test was conducted to evaluate participants’ reading and text comprehension skills. It remains an open question to what extent philosophical texts poses more challenges for participants than other types of texts. In the absence of necessary data, we must leave this question for future research.

## **6. Conclusion**

It has been commonly recognized that philosophical classes at colleges and universities has something to do with “reasoning”, “critical thinking”, “deeper comprehension” etc. In rapidly developing informational world philosophy, despite its “ancient spirit”, remains competitive among other academic disciplines, as far as it can offer analytical tools to make one’s experience and one’s social-cultural habitat at least a little more sensible and meaningful. Even if long ago philosophy ceased to be “theory of everything” in terms of providing content, it appears to remain “theory of everything” in terms of supervising “logical form”. Thus, unsurprisingly, participants of our study emphasized that, in their experience, philosophy addresses various “deeper meaning” questions, although often leaves them unanswered. In general, for students, who had their first philosophy course, the very notion of “stepping out of the box”, “looking beneath the surface” appears to be attractive, as well as notion of “proof” (strong argument). However, coming into contact with philosophical text, they tend to characterize it as “unreadable”, even if they acknowledge that philosophical text is an exemplary case of argumentation and “digging for meaning”. This, dissonance is an interesting phenomenon which needs to be examined in further studies.

## References

- [Archila, 2015](#) – Archila, P.A. (2015). Using history and philosophy of science to promote students' argumentation: A teaching–learning sequence based on the discovery of oxygen. *Science & Education*, 24(9): 1201-1226.
- [Ausubel, 2000](#) – Ausubel, D.P. (2000). *The Acquisition and Retention of Knowledge: A Cognitive View*. Dordrecht: Springer-Science+Business Media, B.V.
- [Bar Tikva, 2010](#) – Bar Tikva, J. (2010). Socratic teaching is not teaching, but direct transmission is: Notes from 13 to 15-year olds' conceptions of teaching. *Teaching and Teacher Education*, 26: 656-664.
- [Barrow, 2010](#) – Barrow, W. (2010). Dialogic, participation and the potential for Philosophy for Children. *Thinking Skills and Creativity*, 5: 61-69.
- [Benson, 2000](#) – Benson, H.H. (2000). *Socratic Wisdom: The Model of Knowledge in Plato's Early Dialogues*. Oxford: Oxford University Press.
- [Burgh, Nichols, 2011](#) – Burgh, G., Nichols, K. (2011). The parallels between philosophical inquiry and scientific inquiry: Implications for science education. *Educational Philosophy and Theory*. DOI: 10.1111/j.1469-5812.2011.00751.x
- [Burke et al., 2014](#) – Burke, B.L., Sears, S.R., Kraus, S., Roberts-Cady, S. (2014). Critical analysis: a comparison of critical thinking changes in psychology and philosophy classes. *Teaching of Psychology*, 41 (1): 28-36.
- [Charmaz et al., 2011](#) – Charmaz, K., McMullen, L. M., Josselson, R., Anderson, R., McSpadden, E. (2011). *Five Ways of Doing Qualitative Analysis: Phenomenological Psychology, Grounded Theory, Discourse Analysis, Narrative Research, and Intuitive Inquiry*. New York, London: The Guilford Press.
- [Copeland, 2010](#) – Copeland, M. (2010). *Socratic Circles: Fostering Critical and Creative Thinking in Middle and High School*. Portland, MN: Stenhouse.
- [Creswell, 2016](#) – Creswell, J.W. (2016). *30 Essential Skills for the Qualitative Researcher*. Los Angeles: Sage Publications.
- [Daniel, Auriac, 2011](#) – Daniel, M. F., Auriac, E. (2011). Philosophy, critical thinking and Philosophy for Children. *Educational Philosophy and Theory*, 43 (5): 415-435.
- [Finn et al., 2012](#) – Finn, S.J., Case, C., Underwood, B., Zuck, J. (2012). *The Philosophy Skills Book: Exercises in Philosophical Thinking, Reading, and Writing*. New York: Continuum.
- [Frost, 2011](#) – Frost, N. (2011). *Qualitative Research Methods in Psychology. Combining Core Approaches*. Maidenhead (Berkshire, England): Open University Press.
- [Kayi-Aydar, Goering, 2019](#) – Kayi-Aydar, H., Goering, C.Z. (2019). Socratic circles in professional development sessions: negotiating peripheral participation and membership in building a community of practice. *Action in Teacher Education*. DOI: 10.1080/01626620.2018.1561547
- [Knezic et al., 2010](#) – Knezic, D., Wubbels, T., Elbers, E., Hajer, M. (2010). The Socratic Dialogue and teacher education. *Teaching and Teacher Education*, 26: 1104-1111.
- [Lambright, 1995](#) – Lambright, L.L. (1995). Creating dialogue: Socratic seminars and educational reform. *Community College Journal*, 65 (4): 30-34.
- [Lipman, 1998](#) – Lipman, M. (1998). Teaching students to think reasonably: Some findings of the philosophy for children program. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 71 (5): 277-280.
- [Lipman, 2003](#) – Lipman, M. (2003). *Thinking in Education*. Cambridge: Cambridge University Press.
- [Lipman, 2008](#) – Lipman, M. (2008). Philosophy for children's debt to Dewey. In M. Taylor, H. Schreier, & P. Ghiraldelli (Eds.). *Pragmatism, Education, and Children: International Philosophical Perspectives*. Amsterdam, New York: Rodopi, pp. 143-151.
- [Lipman, 1995](#) – Lipman, M. (1995). Moral Education Higher-Order Thinking and Philosophy for Children. *Early Child Development and Care*, 107 (1): 61-70.
- [MacDonald, 2016](#) – MacDonald, M. (2016). *Parenthood and Open Adoption: An Interpretative Phenomenological Analysis*. London: Palgrave Macmillan.
- [Maloney, 2015](#) – Maloney, D. (2015). Teaching critical thinking: sense-making, explanations, language, and habits. *The Physics Teacher*, 53: 409-411.

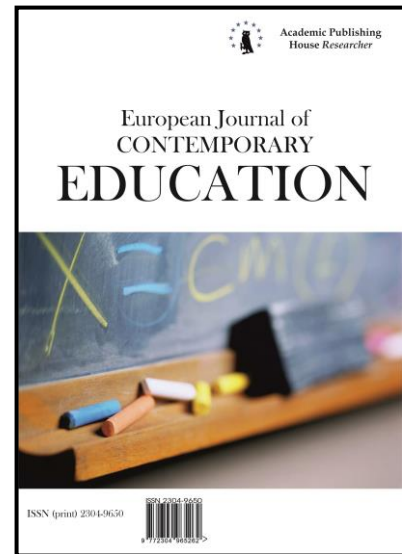


- Mangrum, 2010** – Mangrum, J.R. (2010). Sharing practice through Socratic seminars. *Phi Delta Kappan*, 91 (7): 40-43.
- Marnburg, 2003** – Marnburg, E. (2003). Educational impacts on academic business practitioner's moral reasoning and behaviour: effects of short courses in ethics or philosophy. *Business Ethics: A European Review*, 12 (4): 403-413.
- Moeller, Moeller, 2002** – Moeller, V.J., Moeller, M.V. (2002). Socratic Seminars and Literature Circles. New York, London: Routledge.
- Morais et al., 2017** – Morais, T., Silva, H., Lopes, J., Dominguez, C. (2017). Argumentative skills development in teaching philosophy to secondary school students through constructive controversy: an exploratory study case. *The Curriculum Journal*, 28 (2), 249-265.
- Mullins, 2002** – Mullins, P. (2002). CriticalThinking.com: A Guide to Deep Thinking in a Shallow Age. Myron Tuman Tuscaloosa, AL: University of Alabama Press.
- Nagel, 1987** – Nagel, T. (1987). What Does It All Mean? A Very Short Introduction to Philosophy. New York, Oxford: Oxford University Press.
- Pietkiewicz, Smith, 2012** – Pietkiewicz, I., Smith, J.A. (2012) Praktyczny przewodnik interpretacyjnej analizy fenomenologicznej w badaniach jakościowych w psychologii. *Czasopismo Psychologiczne*, 18 (2): 361-369.
- Plato, 1997** – Plato (1997). Complete Works. Indianapolis. Cambridge: Hackett Publishing Company.
- Rashtchi, 2011** – Rashtchi, M. (2011). Fiction literature for children and its role in intellectual development. *Journal of Children and Thinking*, 1 (2): 23-37.
- Smith, Osborn, 2003** – Smith, J.A., Osborn, M. (2003). Interpretative phenomenological analysis. In J.A. Smith (Ed.). *Qualitative psychology: A practical guide to research methods*. London: Sage, pp. 54-80.
- Strawson, 2011** – Strawson, G. (2011). Cognitive Phenomenology: Real life. In T. Bayne & M. Montague (Eds.). *Cognitive Phenomenology*. Oxford: Oxford University Press, pp. 285-325.
- Tallent, Barnes, 2015** – Tallent, R.J., Barnes, J.J. (2015). Think bubbles and Socrates: Teaching critical thinking to Millennials in public relations classes. *Universal Journal of Educational Research*, 3 (7): 435-441.
- Thomas, Goering, 2018** – Thomas, C., Goering, C.Z. (2018). Socratic circles in world history: reflections on a year in dialogue. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 91 (3): 103-110.
- Torabizadeh et al., 2018** – Torabizadeh, C., Homayuni, L., Moattari, M. (2018). Impacts of Socratic questioning on moral reasoning of nursing students. *Nursing Ethics*, 25 (2): 174-185.
- Tsevreni, 2016** – Tsevreni, I. (2016). The ignorant environmental education teacher: students get empowered and teach philosophy of nature inspired by ancient Greek philosophy. *Environmental Education Research*. DOI: 10.1080/13504622.2016.1249457
- Zare, Mukundan, 2015** – Zare, P., Mukundan, J. (2015). The use of Socratic method as a teaching /learning tool to develop students' critical thinking: A review of literature. *Language in India*, 15 (6): 256-264.



Copyright © 2019 by Academic Publishing House Researcher s.r.o.  
All rights reserved.  
Published in the Slovak Republic  
European Journal of Contemporary Education  
E-ISSN 2305-6746  
2019, 8(4): 889-919  
DOI: 10.13187/ejced.2019.4.889  
[www.ejournal1.com](http://www.ejournal1.com)

**WARNING!** Article copyright. Copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of the violation of the author(s) rights will be pursued on the basis of international legislation. Using the hyperlinks to the article is not considered a violation of copyright.



## **Cross-Disciplinary Higher Education between Medialogy and Bibliology: Book Science as Degree Programme in Universities Worldwide**

Milena Tsvetkova <sup>a,\*</sup>

<sup>a</sup> Sofia University, Faculty of Journalism and Mass Communication, Sofia, Bulgaria

### **Abstract**

Object of the study: The broad object of this study is the academic field of the book and the book as an area of interdisciplinary teaching. Purpose: to prove that the 21st-century cross-media and hybrid media ecosystem emancipates Book Science from the rest of the sciences in whose objects it can partake only as a constituent using one of its elements, properties or attributes. Tasks: to identify and summarise the theoretical and methodological differences between conventional Book Studies and the specific Book Science; to update and conceptualise the understanding of the book as a traditional means of communication in the light of the modern perspectives of digital transformation; to offer a framework of an innovative media science of the book. Hypothesis: Returning to the matter of the book as a medium, the hypothesis to be tested in this study is: “the book is set to be vindicated as a basic scientific category and be studied by a science of its own as an agent of communication, while the scientific book – as a communicator of “good” science. Methods: analytic and synthetic processing of primary and secondary resources, the selective monographic method, systematisation and summarisation of data from scientific-methodical and normative-legal documents on the issue examined. Results: Based on a working hypothesis, this study provides theoretical knowledge in Book Science and proposes points of support toward future fundamental and applied research in Book Science. Significance of the study: Overall, our findings suggest that 1) the research on the new theoretical views about the book will facilitate an increase in the academic interest in book-related professions, encourage the design and update of university curricula and programmes in Book Science, to support interdisciplinary research of book and digital media culture; 2) it is expected that the present text will provide the factors militating against the introduction of innovations in higher education and doctoral programmes in Book Science insofar as books as products of the publishing industry, and thus subject to market forces, drive back business interest in higher education toward book-related professions; appropriate measures to overcome the challenges outlined have been suggested.

---

\* Corresponding author  
E-mail addresses: [milenaic@uni-sofia.bg](mailto:milenaic@uni-sofia.bg) (M. Tsvetkova)

**Keywords:** higher education, interdisciplinary teaching, media education, book studies, book as communication, correlation between book theory and mass communication theory.

### 1. Introduction

At the heart of the present research lies the commitment to outline a clear scientific doctrine – comprising both theory and methodology – of the study, explanation and future development of the phenomenon “book”, which brings to the fore new knowledge about the book as the oldest existing medium or the oldest means of mass communication. This conceptual framework unites the accumulated archaeological and historical evidence on the book as the first medium shaping the pattern of mass communication, which has subsequently become a key agent in the social communication system and today represents the most unpredictable factor and object of the media industry.

The author’s proposition is that the book needs to be vindicated as a general scientific category by means of an innovative Book Science, thus allowing it to be studied by all sciences in its two fundamental aspects: form and content, as text and as a medium.

The present work comes as a result of the author’s long-standing and purposeful research which began with a dissertation entitled “Reading – anti-manipulation filter: Individuality and audiovisual manipulation” defended for a doctorate degree in 1999. It is chapter 3, paragraph 1 thereof, entitled “Book – medium for interindividual communication”, which first offers a definition of the research object from a communication perspective: the book as “a communication subject playing the part of an information source materialized in print, in mass or limited circulation, but serving the purpose of interindividual, ‘epistolary’ communication.” (Tsvetkova, 1999). The author’s interest in the scientific category of the book remains intact as part of her “Book as medium” lecture course at the Sofia University, which has been taught since 2001. The cross-disciplinary science of book, unparalleled in Bulgaria, is an academic discipline belonging to the professional field of “Public Communication and Information Sciences”. It was established in response to higher education’s imminent need for new scientific knowledge about the book so as to vindicate it as a foundation of the media pyramid. The integration of the “Book as medium” subject into the curricula of three university majors allowed the elaboration of a new theory about the book based on the dual system principle bridging the gap between theoretical and practical science.

Individual research results and statements have earned approval at national and international scientific congresses as well as in scientific publications and in front of an academic audience. A comprehensive concept of the book as a medium was first presented in public in 2003 in front of professionals at ULISO’s 13th national scientific conference “Library cooperation – present and future: Research ideas and projects in the field of written communication” (Sofia, 5-6 June 2003). The “Book as Medium” monograph published in 2012 is the first research work in Bulgaria dealing with the media nature and specifics of the book. It elaborates a theoretical concept on the book as a communication medium, built as a result of the interaction between Book Studies and Media Studies, Bibliology and Mediology (Tsvetkova, 2012). The scientific community and academia were offered an *essential analysis* of the book as a social-communication phenomenon – the oldest medium credited with programming the mass communication model. Regrettably, to date there has been no other published scientific monograph on the media essence of the book. No research work has been made public that is solely dedicated to the book as a means (technology, invention) of communication, i.e. explaining it in the unity of the genesis, process and result thereof.

### 2. Methods

A complex of interrelated research methods have been used which correspond to the object of the study and the tasks set: the qualitative systematic review, methods of the analytic and synthetic processing of primary and secondary resources, the selective monographic method, systematisation and summarisation of data from scientific-methodical and normative-legal documents on the issue examined. The “content assessment” method, which designates the process of “reading, selecting, evaluating, comparing and analysing the details when telling a story” (Marzolf, 1978: 15) has been applied to the documentary sources examined. This is a method

whereby the researcher relies on their own experience and scientific intuition to select evidence from the environment examined that is most reliable and best matches their hypothesis.

The present study employs the notion of “science” as a system of building fundamental knowledge regarding understanding the world and humans, as well as knowledge whose practical application has been postponed in time. The term “programme” refers to the provision of higher education in its broadest sense, “including provision that is not part of a programme leading to a formal degree” (ENQA, 2015: 7). In this study, the term “book” refers to the primary cultural medium. The work operates with the definition of “book as a medium”: *a formatted medium (concept of medium) for the exchange of ideas and lasting knowledge, transmitted through a virtual image of a reality (concept of text)* (Pettersson, 1985; Tsvetkova, 2012: 69). Examining the levels of connotation leads to deciphering not only the direct but also the indirect uses of the term “book” in the sense of communication or medium. Bibliology and Book Studies are considered synonymous in the present study<sup>1</sup>.

### 3. Theoretical review

Why is it necessary to resurrect the debate on the boundaries of Book Science? First comes the issue regarding the international scientific term. In Bulgaria, the term “Knigoznanie” has four different corresponding translations into English: “Book Studies”, “Study of Books”, “Book Science”, and “Bibliology”. For instance, leading Bulgarian researcher of books A. Gergova used the term “Book Science” in 1987 as equivalent to “Knigoznanie” (“Book Studies”) and “Bibliology”. In addition, she makes no distinction between the terms “science”, “scientific field”, “scientific area”, and “scientific discipline” (Gergova, 1987: 3-9).

Scientific intuition suggests that the research field of Book Science is not synonymous with Book Studies (Knigoznanie, as transliterated from Bulgarian). Book Studies is defined as “a book sciences complex”, which includes Bibliology and Bibliography. Furthermore, Book Studies has established itself as a term equivalent to Bibliology – complex book studies (Rats, 2012: 152), which, according to French bibliologist Robert Estivals, is not a science merely about the book, but a “science about written communication” (Fr. “la science de la communication écrite”) (Estivals, 2002). Therefore, Book Science is not another name for Book Studies but represents a core concept of the latter.

#### **Bibliology and the innovative Book Science**

“Bibliology” (Bibliologie, deriving from Greek *biblion* – book, and *logos*, λογία – teaching) in a narrow sense represents a scientific description of books from their earliest period to the present day, including all materials and processes related to book production (Roberts, Etherington, 1994). When understood in this narrow sense, Bibliology does not refer to the book’s text, hence it is frequently identified with Bibliography. The subject it deals with is the “bookness” of the book comprising the description, editing, printing, publishing, circulation, reprinting, and collecting (Oxford, 1989), as well as the history, technology and economics of book production. Sometimes Bibliology is mixed up with Bibliometrics. Rather than being a science, though, Bibliometrics is merely a quantitative method belonging to the toolbox of science metrics. Bibliology is occasionally confused with Bibliologie, which is the study of the Bible (also referred to as Biblical studies). The reason is that the second meaning of the term Bibliology in English is a synonym of Theology – a study of biblical doctrines, Biblical Theology (Webster, 1913).

Another narrow meaning of Bibliology explains its unusual position in the Common European Research Classification Scheme (CERCS) created by the European Commission. There, Bibliology is reduced to a descriptive discipline belonging to the Humanities (Eston. Humanitaarteadused), differentiated from Bibliography (H105) and placed in a common research area together with Paleography, Epigraphy and Papyrology (Class H110) (ETIS, 2018).

The scope of Bibliology covers neither just the history of the book, nor just bibliography (description of the book). Bibliology can be defined most concisely as *academic knowledge about the book as a physical and cultural artefact*.

The science of Bibliology is already 210 years old. Polish bibliologist Krzysztof Migoń has traced its research paradigms and thus identified its problem zones (Migoń, 2010: 44-53). The onset of Bibliology as science of the book is marked by Gabriel Peignot’s encyclopedia “Dictionnaire raisonné de bibliologie” from 1802–1804 (Peignot, 2006: 85-97; Janssen, 2006). What follows is the development of the four paradigms of the science: historical, philological, the



paradigm of the sociological, psychological and pedagogical areas, and, finally, the information-communication paradigm in Book Science, which does not appear until the end of the 20<sup>th</sup> century. The focus is only on the textuality of the book, its written content and language. The significance of the philological area stems from the obvious fact that it is books that frame language and words, and the respective bibliological processes (book creation, circulation, and reception) exist parallel to language and literature. However, as established by Krzysztof Migoń, the philological approach to the book reduces scientific interest only to those properties of the book that are of importance to philological disciplines; to studies dedicated to the birth of literary works only as books and to their fate and reception among readers. Unfortunately, even today numerous researchers of the book and literature in their interdisciplinary aspects consider Book Science to be a somewhat secondary literary discipline whose primary task is compiling bibliographies and studying books as literary monuments.

The contemporary functional concept of Book Science has been devised thanks to the development of the information and communication sciences. The newly created information and communication models have raised the book paradigm to a qualitatively new level. The theoretical concepts of two European scientists – Paul Otlet (1934) and Robert Estivals (1978) – have played a pioneering role in this process.

To Paul Otlet, Bibliology is identical with science to documentation (Otlet, 1909) and thus he proclaims it as a universal science whose object are all documents and their functioning. In 1934, adopting the large-scale thinking typical of encyclopedists, Paul Otlet defines the so-called documented being (Fr. *l'être documenté*) as a subject of Bibliology, while also laying the structural foundations of all other sciences whose summaries can be characterised as “documents” (books, journals, various “scripta”) (Otlet, 1934; Migoń, 2004). Paul Otlet’s documented being also covers several novel book formats which his colleagues doing research into the academic field of Book Studies later forget: the photographic book (Fr. *livre photographique*), the microphotographic book (Fr. *livre microphotographique*), the photomicrographic book, (Fr. *livre photomicrographique*), the microphoto book (Fr. *livre microphotique*). In 1909 he already refers to the new media as “substitutes for the book” (Fr. *substituts du livre*): sensory/tactile book (Fr. *livre tangible, livre taille*), visual book (Fr. *livre visible*), auditory book (Fr. *livre sonore*), audiobook (Fr. *livre audible*), “projected book” (Fr. *livre à projection* or *bibliophôte*) and “telephoto book” (Fr. *livre téléphoté*) (Otlet, 1906: 87; Otlet, 1934: 216-247, 431).

Forty-five years later Robert Estivals resurrected the interest in Bibliology with his comprehensive concept of a science on the written content and communication [in original: “la science de l’écrit et de la communication écrite”] (Estivals-1978, 1987, 2002). Two hundred years after Gabriel Peignot, Estivals’ works reiterate the former’s understanding of the newest paradigm of Book Science, which is that “Bibliology covers the universal collectivity of human knowledge”, [in original: “la Bibliologie, embrassant l’universalité des connaissances humaines...”] (Peignot, 1802).

One of the reasons for the advantages of Bibliology as a basis for a new media science of the book is its interdisciplinarity. A useful research perspective can be gained by relating Bibliology to Bibliognosy (Gr. *biblos* – book, and *gnosis* – knowledge), i.e. knowledge about the book. The term “bibliognosy” (Fr. *bibliognosie*) was suggested by abbot Jean Joseph Rive as early as 1789, but it fell into disuse during the 20<sup>th</sup>-21<sup>st</sup> century. It has also been used to designate the (comprehensive) study of the book in its entirety. If we compare the terms “bibliognosy” and “book studies” etymologically, we will find out that they are synonymous while contemporary Bibliology should supposedly reach beyond them in terms of scale. The history of the science demonstrates that due to the complex nature and universality of the object of the book, Bibliology must interact actively with all other sciences. The other reason that necessitates prioritising the science of Bibliology as a foundation for a new Book Science is that its leading contemporary theoretician – Frenchman Robert Estivals, who is one of the most dedicated book researchers in the world, brings the book closer to its immanent media nature – as a variety of the physical and electronic-virtual carriers of written information.

### **Medialogy and the innovative Book Science**

The most significant institution which makes intellectual and artistic activity possible is the book. It does not matter whether it would be used as a means of information exchange, spiritual interaction or psychological impact. As such, it has to be examined as part of the integral research



area of “Medialogy of the book and reading”, i.e. simultaneously as an “*artefact*” of the reading practice, as the first artificial means of recording based on writing, and the first and most important product of the communication sources spectrum (Tsvetkova, 1999). The book is a tool for the highest possible spiritual flight, competing with all similar technological devices as it preserves the information balance when its cognitive function is realised. And, last but not least, the book is a means of intellectual survival.

What will be understood by a *medialogical approach* to the research of the book? First, it is important to note that currently there are two versions of conceptual scientific approaches to media – Medialogy and Mediology. However, the object of both of these approaches is the *relationships* and *connections* in the media evolution.

Medialogy (Ger. *Medienwissenschaft*) refers to the “science, study and expression of media”. It aims at more than merely “study of the middle” – that is, it is dedicated to the “study of betweenness” and supplies specific knowledge about the media disciplines by studying their object – the mediator, and media technology (Fischer, 1996). The medialogical approach links technology to its function of a primary propelling tool or mediator in the perspective of communicative interaction with its predicted or unpredictable effects. The tool used to study this functional field is the strategy of *contextual synergy*, i.e. Medialogy is in search not only of the medial component of the communication environment with its activity and influence but attempts to establish the factors of cohesion between the co-subjects (sender and receiver, author and reader) and discover the formulas of the reinforcing effects as well as deduce and draw conclusions from amorphous and chaotic relations, messages and symbols.

The medialogical approach would be most appropriate to form the new paradigm of managing the book as a medium and supply it with scientific and applied knowledge – “management through contexts”. Essentially, it is about designing management systems at an overcybernetic level, which are based on the mechanism of information feedback. This task has been embraced by one of the new scientific disciplines called “informodynamics”<sup>2</sup>, which rejects the classical “signal paradigm” of management and looks for ways to design a “machine that produces conclusions”, controllable data and relations that change over time and in context. In other words, an overcybernetic management model will be based on making sense of the accumulated prestige (image) of a given book as a result of “optimised search” by means of progressively populating databases that are part of the mechanism, or forming some “knowledge structure” or “structure of relationships” changing over time. It is the medialogical approach in particular that could contribute its own abstract (not mathematical) model to perfecting a *concept for managing the book through feedback based on an “information resonance” algorithm*.

On the other hand, mediology (Fr. *médiologie*) is a scientific discipline which deals with the *relations* between man and his technological extensions (“second nature”) as well as the *links* and interaction between technology and culture (Hartmann, 2003). The initiative for creating Mediology came from French philosopher and journalist Régis Debray<sup>3</sup>. According to him, mediology needs to examine the relations between the higher social functions (religion, politics, ideology and spiritual attitudes) and the technological structures responsible for transmitting information and the information impact. Thus, it is interested not only in the carriers or the means of communication but most of all in the efficiency of the symbolics, i.e. of the topic of mediation (through words and images) and its transformation into material power. However, the inception of Mediology can be traced back to Victor Hugo’s extensive manifesto “Ceci tuera cela”, part of his novel “Notre-Dame de Paris” (1831), from where it continues with the contributions of Walter Benjamin (1892-1940)<sup>4</sup>, Marshall McLuhan (1911-1980)<sup>5</sup>, Abraham Moles (1920-1992)<sup>6</sup> and Umberto Eco (1932-2016) (Fedorov, Kolesnichenko, 2013).

Mediology is a scientific discipline which can help us to the greatest extent with modeling the book as the authentic medium in the communications evolution and as an ever-changing and self-verifying media prototype. It is not so much materialism that matters to Mediology but rather the ability of a medium to multiply and extend human potential by explaining how ideas transform into material power. The toolbox of Mediology helps prove that the book is *an environment for information communication, which is materialised in print, exists in mass or limited circulation, but serves the purpose of interindividual, ‘epistolary’ communication*. The same proposition can be found in the following aphorism by ancient Greek philosopher Epicurus: “I am writing this not to many, but to you: certainly we are a great enough audience for each other.”

In fact, Book Science (albeit under a different name) has long been dealing with the development of media, writing and verballity, and with analyses of the development of the various communication units and processes as well as of issues currently topical for media science and that have been deemed significant for the near and distant future.

Several theoretical motives can also be identified for putting Book Science forward as a core concept of conventional Book Studies. In the system of sciences (traditionally divided into natural versus unnatural sciences, or material versus spiritual ones), the book can be said to be a “centaur system” as it occupies middle ground – essentially, it combines features from both worlds of objects and symbol systems (Rats, 2012: 157). Furthermore, if the object of general Book Studies is the entire “domain of the book” or “book culture” as physical space and an activity, specific Book Science is interested in the object of the book in its functionality (Rats, 2012: 152). In 2010 when Krzysztof Migon traced the evolution of Book Studies, he claimed that a fundamental principle of a pure Book Science is book research not so much as a historical and social fact but rather as an act of communication. Specific Book Science employs the functional approach which is built on scientific interest in the actual and potential realisation of the various functions of the book as well as obtaining scientific knowledge on the book in a historical and contemporary aspect as an immanent process of intersubjective and social communication. Hence, when the discussion is focused only on Book Science, the researchers’ attention needs to address the properties of the book as a means of bringing together verbal and visual information as well as being a communication tool (Migon, 2010: 49). Which, in essence, represents the function of the medium.

The position of the book within the media spectrum has long been acknowledged by classical scholar of communication science Harold Innis. According to his theory, the system of the book is one of the oldest and most steadfast media systems developing parallel to society in technological, content, and social terms (Innis, 1923, 1986). History has established the book as a reliable mediator between different eras. What is more, according to mediologist Régis Debray, it is the historically proven technology of “mediation” (an intermedium) between humanity’s symbolic forms and material activity, and thus a medium in space and time. Its functional capacity is broadly extrapolated as the process of symbolisation, the social code of communication, as an archiving system, a recording device, a transformational technology and a distribution network (Debray, 1996: 13). According to sociologist Robert Escarpit, the true function of the book is unlimited information dissemination constantly maintained by people (Escarpit, 1966: 22). Polish bibliologist Krzysztof Migon supports an identical proposition: “Undoubtedly the primary function of the book is its communicative feature realized in culture and society insofar as it is far and foremost a tool for social communication.” (Migoń, 1976: 31).

It is only the functional communication approach that can reveal the information-communication function of the book as envisioned by researchers: as a means of holding together, storing and exchanging information. A book is not merely a device or an object but a materialised embodiment of particular historical manifestations of the social consciousness (Nemirovskiy, 1979). The civilising mission of the book is not *statics* but *dynamics* as it “works” toward moving, changing, modeling, and transforming reality. The functional essence of the book reveals the entire toolbox humans are equipped with to transform their inner and outer worlds as well as the impact of the book on societies, culture and civilisation as a whole. The media essence of the book and its position in the system of social communication provides the basis for examining it from an authentic sociological perspective as a means of influencing the individual and social consciousness.

The views of communication theorists and book scientists outlined hereby prove that *the expression “book as medium” is not a private aspect or metaphor of certain functions of the book but represents its immanent essence*. The book is a tool of the mind; it is a mediator between the human minds; it is the human invention for communication using recorded information and thus presumably the most important medium for the development of human civilisation.

#### 4. Results

The demand to formulate a specific Book Science has gained ground as a result of changes in the scientific paradigm on the knowledge about the book as well as conforming to the opinions of European scientists in the discussion active in the period 2009–2016 (Nauka o knige, 2009, 2010). This discussion focused strictly on the phenomenon “book” and proclaimed the need for

developing a specific science that has a clear object, i.e. Book Science. Some scientists who have supported this view since the 20th century are Polish professor Krzysztof Migon – one of the leading bibliologists in the world (Migon, 1976, 2010, 2012, 2013, 2016), Russian professor Mark Rats whose contributions cover the methodology of the science (Rats, 2009, 2012), book scientists and book researchers N. Sikorskiy (Sikorskiy, 1965; Bakun, 2008), B. Bodnarskiy (Bodnarskiy, 1983), N. Lelikova (Lelikova, 2007, 2010), L. Dovnar (Dovnar, 2011, 2012), S. Lyutov (Lyutov, 2012), B. Lenskiy and V. Vasilev (Lenskiy, 2007).

During this period the specific Book Science obtained its academic accreditation in a number of European universities: degree programmes “Book Science” at the Mainz University, Germany; University of Erlangen-Nuremberg, Germany; Ludwig Maximilians University Munich, München, Germany; Pedagogical University of Cracow, Poland; Doctoral Programmes in “Book Science” at the Sofia University, Bulgaria; Vilnius University, Lithuania; Mainz University, Germany; University of Erlangen-Nuremberg, Germany; Department of Book Studies, Institute of Communication and Media Research at the University of Leipzig, Germany; Institute of Book Science and Documentation at the Vilnius University, Lithuania; Institute of Information and Book Science Studies at the University of Warsaw, Poland (Sosińska-Kalata, 1997: 27-32), et al. (see also Table 1, Appendix).

A key principle of a new Book Science is that the book is the first medium invented in human history and as such it is an indispensable central factor in the past, present and future of every civilisation. The book is placed at the very bottom of the media pyramid which frames the mass communication model, so every later media format<sup>7</sup> is secondary in relation to it as it merely exploits, diversifies and perfects its immanent characteristics. Hence, the book as the oldest medium will always be a part of the new media spectrum. The message communicated by the European Commission on the changes in the tax regimes for e-books goes along the same lines: “Book publishing is the ‘oldest’ of the media and content industries, as it can be traced back to the 1st century AD when the modern book format was introduced. The codex, a book made of a number of sheets of paper, gradually replaced traditional scrolls, which could only be accessed linearly. This new format allowed random access and is therefore considered the most important technological development before Gutenberg invented printing in 1440.” (European Parliament, 2016).

### **Purpose and Tasks of Book Science**

The main purpose set by the innovative Book Science is to prove that the book is first and foremost a medium, which is achieved through verifying not only the traditional models of social and mass communication but also the mediological, genealogical, anatomical, bioinformatic, biosemiotic, datascientific and other user-driven approaches to the book.

The tasks which Book Science needs to address are connected with identifying sufficient grounds to relate its subject with a commitment to the survival, reproduction and exchange of ideas taking into consideration the largely unpredictable 21st century. Book researchers need to identify and raise awareness of the reasons for the viability and sustainability of the very notion of the book from the perspective of the 21st century, in which the success of science depends not on narrowly specialised and differentiated approaches to subjects but on readiness to integrate the knowledge about them. Nowadays there are abundant scientific facts, viewpoints and forecasts but the issue lies in how they are made sense of. The book as the most important form of storing and exchange of human knowledge, significant both historically and as an ongoing process of development, needs its own conceptual model that will allow it to be re-examined consciously in its entirety.

In response to the requirements for formulating a new theoretical paradigm, the innovative Book Science faces four **methodological tasks**:

- 1) To give proof of the need for innovative knowledge about the book with a view to its evolution and metamorphoses as a binomial, multimodal and multisensory medium;
- 2) To produce an autonomous, theoretical and terminologically unambiguous statement reconciling opposing positions on the separate aspects of the phenomenon “book” and, despite the lack of terminological coherence in communication theory as a whole, to fix and enrich the following key terms: “book”, “media”, “information”, “communication”, “feedback”, “text”, “body”;

3) The topic needs to become problem-saturated, which will provide the conditions necessary to reaffirm and develop an integrated and comprehensive contemporary concept of the media science of book;

4) To encourage a new culture of analysing and forecasting the behaviour of the book in the ever expanding and diversifying spectrum of communication means in globalised media space; to set the pattern of innovative and heuristic thinking in future researchers, authors and producers in the publishing industry and promote the enhancement of their culture of reading and interaction with their recipients.

The primary content task of Book Science is to legitimise scientifically the object “book” in terms of its topicality and functionality, i.e. not as a cultural-historical or industry-statistical fact but as a function. The algorithm to achieve this task has to cover the following structural-logical steps:

1. Determine the specifics and uniqueness of the communication process involving the book as well as its functional essence as a mediator between communicator and recipient, as a means of interpersonal communication, as a tool for knowledge, manipulation or therapy.

2. The book is typologised from a content, mediological, bibliological and bibliopsychological perspective as a means of information and a mediator in social communication.

3. A scheme is developed, and the relevant communication factors are detailed (source, channel, mediator, recipient, feedback).

4. A universal binary media format is designed which includes content and form (text and body); then its genericity and implicitness with regard to the book as a medium are proven.

5. Using the toolbox of comparative media studies, the relationships between the book and the other media in the common communication space are revealed, alongside the regulatory mechanisms in the “society – books” interrelationship.

6. Using the toolbox of forecasting and heuristics, the optimal and realistic hypotheses on the future of the book as a medium are drawn.

The thematic coverage of the research material draws the following **problematic circles**: etymology of the book as a medium, genealogy and mediaarcheology of the book, mediatorics of the book, the book as a message and tool for manipulation, pragmatics and aesthetics of the paper body, symbolics and semiotics of the paper body, and futurology of the book.

The innovative Book Science offers a unified theory combining the views on the book as a binomial medium with content and form (text and body), the constructive and manipulatory potential of the book as a medium, the media archaeology triad of Pre-Gutenberg, Gutenberg and Post-Gutenberg books, the metamorphoses of non-conventional books (audiobooks, visual books, e-books, multimedia books, cross-media books, hybrid books, augmented reality books, nanobooks, etc.), the revival of ancient practices in the art of book and reading, and the predictions on the future of the book made by science and fiction.

The aspect of the “book as body” has a strong heuristic potential as explained by anthropological, psychological and critical art theories of corporality. This will allow the past, present and future of the book to be re-examined in augmented reality from the perspective of the corporeal modality of the reading person.

### **Theoretical foundations of Book Science**

There is universal agreement that the book has a special place and role in the development of humanity and that it is something more than a mere means of transmitting and storing knowledge. Yet our scientific and practical behaviour with regard to the book does not go further than the trivial work for and with the book as one of the many means of mass communication. Even more disturbing, the book is being fetishized as a publishing and market product in our attempt to take it out of the media system of social communication and interiorise it as a commodity available in stock on the market or at home.

The conceptual model of Book Science is being built using resources from multiple sciences. The starting point of the need for such a model is the dual essence of the book as it is a human object and a human activity at the same time. Just like any Science of the Artificial World (of the cultured domain), Book Science has to be a system of object-oriented (physics, chemistry, etc.) and action-oriented (philosophy, sociology, political sciences, management, etc.) sciences. This fact emancipates Book Science from the other sciences whose object it can partake in only as a



constituent with one of its components, elements, properties or attributes (Belovitskaya, 2006: 249–250).

Science of artefacts – this is how prominent methodologist, engineering geologist, book collector and theoretician of bibliophily Mark Rats defines Complex Book Science. It is exactly his competence in the following three domains – science of science, natural science, and the art of book – that gave him an impetus to switch the focus to studying the book. (Israeli professor Mark Rats first announced his proposition on the need for overcoming the narrowly scientific views in traditional book studies in 2009) (Rats, 2009: 18). The sense of “complexity” of any of the “sciences of the artificial” or of the artefacts lies in the hybrid nature of their object of knowledge and the categorial distinctiveness of the research domain. All non-natural sciences (of the -logy type) focus on their own objects (artefacts), but also cover the related types and systems of activity ranging from the creation to the application of these artefacts. Embracing this argument, Mark Rats insists on studying the book within the universal nuclear ontological scheme of the “sciences of the artificial”:

creation (preparation) → object (artifact) → usage (application)

In order to cover the entire spectrum of its communicative, polyfunctional and universal aspects, the knowledge about the book must build upon the social sciences. Focusing the scientific interest towards the book as a social “actor” could be achieved in the following directions:

- × the book as an autocommunication tool;
- × the book as a “link” to the information field;
- × the book as a tool for expert scientific communication;
- × the book as a means of lifelong learning and competence building;
- × the book as a reference tool and a source of systematised and succinct knowledge;
- × the book as a source of secondary and meta information;
- × the book as a means of distribution of artistic models as well as moral and aesthetic values;
- × the book as a tool of economics, business, politics and diplomacy;
- × the book as a tool of medicine and psychiatry (bibliotherapy, communication therapy), etc. (Gergova, 1987: 7-8).

Although sociological disciplines would explain the predominant essence of the book as a tool, the scientific results of such research would contribute to highlighting the indispensable from the non-essential in the “use” of the book by the system of social communication.

Yet the book remains the key structural element of social memory in any civilisation, regardless of the way its media are called – documents, artefacts or appropriated nature in the form of objects. For a comprehensive picture of the essence of the book as an object and a system of signs (documents), it is mandatory to combine knowledge pertaining to the domains of the social sciences, arts and humanities, technical and natural sciences (knowledge on the raw materials of the book). Thus, only a *polymorphic or hybrid concept about the book* could reveal its purpose as a mediator between different worlds<sup>8</sup>.

On the basis of this position, each scientific domain has the right to demonstrate interest in the book. Aspects of its specificity have been already revealed by certain domain-specific sciences such as Bibliologie (Fr.), Bibliology (Eng.), Buchwissenschaft (Ger.), Bibliologijos (Esp.), Knygotyros (Pol.), Knigovedenie (Rus.), Knigoznanie (Bul.), as well as by the general and special sciences of philosophy, history, sociology, psychology, anthropology, cultural studies, literary studies, etc. All of them have and will have a particular contribution in the future complex research of the scientific category “book” in its *statics* (in terms of composition, structure and content), *dynamics* (in terms of functions, impact effect and reflections), *pragmatics* (object and symbol usages) and *innovatics* (see Table 2).

### Methodology of Book Science

If a given scientific discipline and university degree programme is to become an authentic tool for enhancing the quality of the learning process, it needs to be oriented toward innovations and, specifically, Innovative Management as an “emerging independent discipline in science and education” (Tyunnikov, 2017: 172). The innovative scientific concept of the book offers a synergy between theory and methodology to aid its study as a medium. Since the book as an object belongs



to one of the most large-scale interdisciplinary academic domains, it is only possible to study and explain it by means of a *cross-disciplinary approach*. The cross-disciplinary approach to be used here is fully justified because even communication science into whose domain traditional and new means of communication fall, has not yet identified its own research methods so it employs interdisciplinarity in its exploration and argumentation. Moreover, a contemporary Book Science will inevitably develop in the conditions of *polyparadigmality* which is generally characteristic of social sciences. The research approach toward the book will combine the genealogical, anthropological, archaeological, informational and receptive approaches. The research process will accommodate large-scale cross- and interdisciplinary (documentary, archeographic and bibliographic) integration of scientific knowledge from the following domains: history, theory and methodology of the written word and the book; history and theory of social information; history and theory of social communication; history and theory of media; history and methodology of publishing; psychology, sociology, culturology, anthropology and phenomenology of reading.

The quality methods are the primary ones utilised in studying the book as a medium. The methodological toolbox of the innovative Book Science needs to include:

- 1) Critical analytic-synthetic processing of the current terminological toolbox of the sciences studying books, science, literature, and written communication;
- 2) The “content assessment” method with regard to the arrays of studied documentary, historical, literary and mythological sources;
- 3) The method of negative assumption in the attempts to overcome regressive and dominant cultural stereotypes;
- 4) The modeling method;
- 5) A comparative dichotomy analysis of the relationships “physical book – audio book – screen book”, “print book – digital book”, “word book – wordless book”, etc.
- 6) SWOT analysis;
- 7) Deep interviews and surveys;
- 8) Empirical methods: documentary, bibliographic and publisher-editor analyses, bibliometrics analysis, media monitoring.

In order to strike a balance when encountering the “missing data” phenomenon in certain specific manifestations of the book as a medium, in which “information noise” would cause a research problem, in some cases it is advisable to resort to *predictive thinking* which is based on “*imputing values to missing data*” (imputation method) commonly used in empirical sociology. It has been applied in research situations of unspokenness or unexplainedness (e.g. mysterious, lost, undeciphered books), including scientific mystifications as well as cases of non-homogeneous verbal expressions and terminological dissonance (even chaos) in the oral and written discourse on the phenomenon “book”.

The scientific category “book” also needs to be subjected to a multi-directional critical analysis using the “*negation*” method, the negative assumption, the counterpoint technique (for instance, surveys of the type “Why do I hate books?”; when explaining “black statistics” of the hated and unwanted books; when assessing piracy, plagiarism and book theft, and when pointing out the disadvantages of the book as a medium and the negative effects of reading). Scientific thought requires contrastive viewpoints because dichotomies and contrasts serve the purpose of overcoming dominant cultural stereotypes. As we know, biases and prejudices hinder not only scientific but also business and daily reasoning. They underlie misjudgments and poor forecasting. The attempt to overcome dominant stereotypes has very little to do with fanaticising the “usefulness – harmfulness” extremes. The “negation” method outlines every true conclusion logically deduced from objective conditions and makes known the rest which is obvious from the perspective of common sense but contradicts mass opinion. Human thought has repeatedly criticised writing, reading, and books. There have also been diametrically opposed evaluations on the socially or morally disapproved of practices regarding books and reading. Facing the state of affairs inevitably causes discomfort, especially when such positions are supported in societies belonging to the “religions of the book” (the three monotheistic ones). However, the context of democracy allows for the equally successful and competent support of any view regardless of how unpopular it might be.

Since the prescriptive approach is becoming increasingly productive in theoretical research on social subjects, *the principle of prescription* and ideocracy rather than the diagnostics principle

characteristic of the descriptive approach will be more effective in Book Science. Therefore, primary importance should be given to the identification of new ideas and proposals on enhancing the book's visual communication and use as an object. The key element of radical ideas is that the only prerequisites they need are *resolution* and *creativity*.

Innovative Book Science needs to make use of *proactive applied scientific thinking*. This has been done so as to accumulate ideas for promising media and publishing projects. In turn, the latter require a new market strategy based on *the surprise effect*. Reader expectations and even dreams need to be exceeded<sup>9</sup>. What are the proactive techniques which underlie the present concept of the media science of book?

First, when the majority, willingly or not, agrees on the contemporary nature of the rule that in order to remain competitive in the digital era, publishers have to become exclusively virtual, all at once someone subdues virtual technologies to the classical print product.

Second, when the majority believes that it must adapt to the enticing offers of digital publishing, someone all of a sudden publishes a physical book which is indispensable for everyone's adaptation and reminds us that we are individuals consisting of atoms, not bytes.

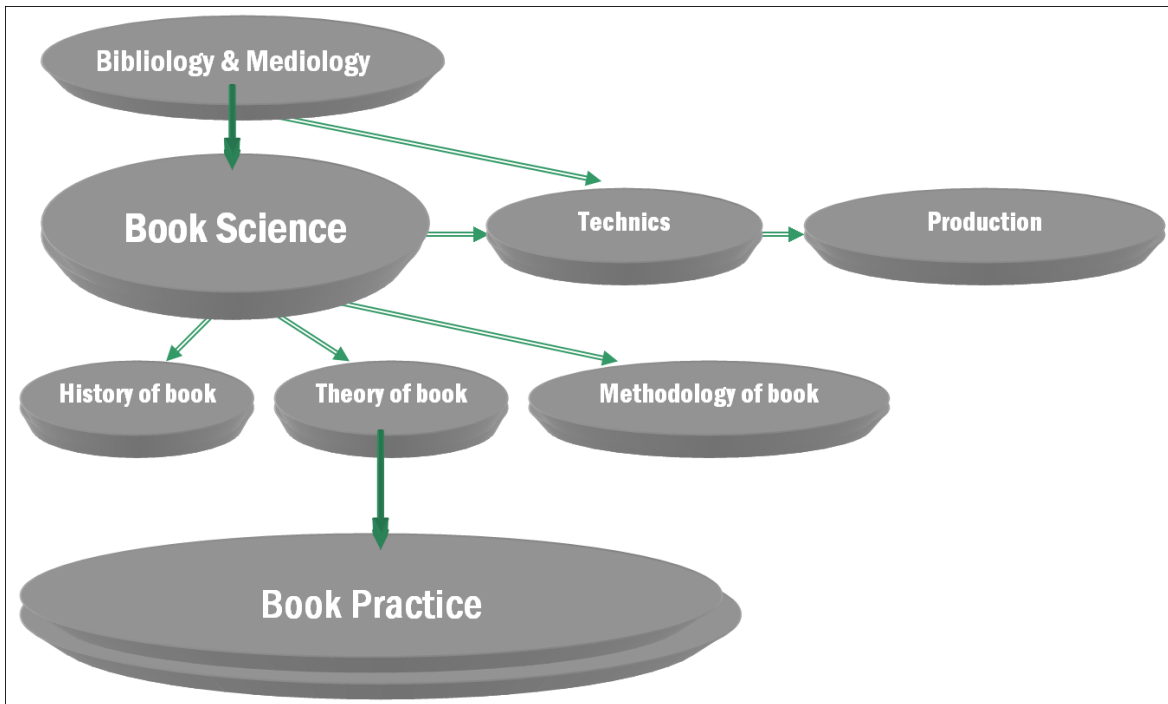
Third, while sensationalism in communication inventions is only sought in the direction of the virtual, someone creates a ground-breaking paper book in an old Gutenberg format.

Fourth, while optimistic technocrats are trying to convince the world that the 100-year-old technology of the print book is emasculate in the face of the virtual future of the Web, someone publishes a book of the future based on its 5000-year work experience in religious rites.

To sum up, an innovative Book Science has to be surprising and unexpected even for the readership instead of remaining confined to reflections or responses to surveys or market research. Just like the most widely cited piece of advice toward the young generation by IT industry genius Steve Jobs, who used it as the final statement of his 2005 Stanford University commencement address, reads – “Stay hungry. Stay foolish.” Actually, when does an invention emerge? When everyone says that something is impossible but there is someone who does not know this – and thus makes the impossible possible. This is how civilisation has kept moving forward ever since Biblical times. President Harry Truman used to say that if Moses had read surveys, he would stay in Egypt. Henry Ford adopted the same course of action – when criticised for his lack of interest in market trends, he would retort: If I had listened to the voice of the customer, I should create no car but just a cart with faster horses.

It is most frequently claimed that the book's odds in the technologically uneven fight against new media are impossible to calculate because every prediction (using these very same technological means) would not take into account the psychological implications that determine the outcome of the conflict, thus leading to a change in user preferences. In the past no one could predict the transformation of epistolary communication into telephone communication. The emerging tendency for harder realism in contemporary users of information as well as the increasing skepticism in the “fallacy” of the written word is a consequence of the “effect of the virtual world”, of the “omnipresence” and “obviousness” caused by the impact of online daily life on the internet.

In fact, the future of the book can be predicted. This is possible if the latter is vindicated as a medium by placing it in the cross section between Bibliology and Mediology – that is, in the polymorphic area of the innovative educational conception of “Book Science”. Taking into account the remark by pedagogy scientist Y. Tyunnikov that the term “conception” should not be used indiscriminately only because it is “fashionable”, and that every educational conception should be designed according to the three-component system “theory – methodology/designing – practice” (Tyunnikov, 2012: 68, 80), a relevant visualization is offered below (Figure 1).



**Fig. 1.** Book Science Structure

## 5. Discussion

It is now time to draw attention to young researchers' stagnated motivation to examine the academic field of the book. The descriptive, investigative and narrative form of knowledge about the book typical of the 20th century, and the former socialist countries in particular, has been processed and reproduced over the years from a strictly materialistic perspective (the book as matter); nowadays, in the era of transition from print to digital, it collides with the new understanding of the book as mediamorphous essence. The old understanding of the book hardly makes a difference between the categories of "essence" and "appearance". Instead, it restricts the essence and content of the category of "book" to the familiar print edition, i.e. it wrongfully puts a sign of equality between *essence* and *appearance* (Belovitskaya, 2009: 113). Since 2010 numerous pretend science debates for and against electronic books have brought about seismic waves all over the world and to date scientists have not come up with a generally endorsed definition of "book", which diverts the focus away from the problems of the essence of the book and proves researchers' inability to harness the duality of the book, examine it terminologically as an undivided whole, and accept the changeable and non-obligatory connection between the physical form of the book and its perfect essence. The faltering independent thinking that is observed in young book researchers is particularly worrying as it even grows into fear of facing opposition against the acknowledgement that the book is the first medium in history which has experimented with, designed and multiplied the mass communication model. We often come across non-scientific reflections and discursive clashes involving people characterised by cognitive inhibitions, inner resistance, and deeply-held biased thinking, who reject the position of the book within the media spectrum. Such resistance, from a contemporary perspective, is fully unjustified.

The reticence and frustration among young researchers could be due to several reasons.

First, at the background of a growing consensus in business and practice that the book is a medium, we identify an absence of a comprehensive study on the topic. Theoreticians are not interested in the book. Traditional Book Studies have been developing primarily by means of a historical-sociological approach, more rarely through a philosophical one, and since recently, following the modernisation of library information activities, development has also taken place in an informational aspect. In Bulgaria, Book Studies are reduced to history of the book, rather history of materialism, i.e. production, storing and distribution. Most researchers only acknowledge the media essence of the book and go no further to condition it intuitively in their

work. Others support views that verge on the idea of the book as a tool of communication. Yet all remain in a mode of general declarativity instead of developing an essential analysis of the category “book” or devising a theoretical-communication concept of the book. Several of these authors pertaining to the communication-media paradigm (M. McLuhan, G. Grundmann, R. Estivals) have been analysed by book scientist Alisa Belovitskaya, who as early as 1987 expresses her indignation that the essence of the book as an objective phenomenon of social reality has not been and is not among the research tasks of world book researchers. It can be said that western Book Studies also remain indifferent to the problem regarding the essence of the book. Only in several works published in the mid-60s and the 70s–80s of the 20th century (French, Polish, Czech, Russian) do we find interest in the book as an object of book-centred rather than sociological, economic, psychological, pedagogical, literary critical or librarianship research. However, even the newest studies, which offer academic views different from traditional ones, do not examine the book as an independent phenomenon in its relationship with the “external environment” but the latter – social, cultural, economic, technological, and informational, is projected on the book instead. In other words, there is an attempt to judge the book solely on the basis of its presence in this environment referring only to personal experience, thus identifying it either only with its physical form (printed codex) or with a work (text, literature or copyright) (Belovitskaya, 1987). Research focused on studying and identifying the immanent essence of the book as an objective phenomenon of social reality is *yet to be conducted*, as A. Belovitskaya concludes more than 20 years later (Belovitskaya, 2009: 87).

Second, authoritative theoretical studies on the book published so far (which must be read and cited as a rule of thumb) offer a one-sided and reduced explanation of the phenomenon. Three popular reductionist versions are outlined below:

- From a philosophical point of view, the book is a *dialectical unity of science and art* because even though a book is a work of fiction, it always has cognitive value.
- From a semiological perspective, a book refers to *any “information object” denoting the visible or invisible world and available for use outside the actual field of the denoter.*
- From a social-psychological perspective, the book is a tool for impact (and interaction) which is equipped with indispensable *cognitive, educational, instructive, emotional and “motive”, strongly personalised functions.* Unlike television, which is the authoritarian “mediator” in communication, characterised by a technologically and technically guaranteed manipulative function, the “conservative” and “rigid” traditional mediator – the book, is primarily *formatively* programmed.

Third, the reductionist points of view about the book outlined above are a result of non-scientific contentions influenced by the stereotypes that “*the book is an object*” and “*the book is a commodity*”.

In order to overcome the stereotype of *the book as an object*, scientists need to, first and foremost, move away from the clichéd idea of the book as “ink on a white sheet of paper”, which limits the understanding thereof merely to the specifics of creation (production) and delivery. During the 60s and 70s of the 20th century, identifying the category “book” only with the paper body, i.e. the material-construction form of existence of the book, was common practice. However, today researchers need to be reminded of the book as a gnoseological phenomenon. As a thought result, the book is a reflection of reality, which bridges the gap between consciousness in reality (the author’s consciousness) and objectified consciousness (fixed in the text). Due to the discrepancy between the author’s consciousness and what is written on the physical carrier (most often paper), the book represents a subjective source, that is a carrier of non-absolute objective and true knowledge nonetheless reflecting to some extent objective facts, processes, phenomena, and ideas. Before becoming a mediator between author and reader, the book is already a medium between author and reality, on the one hand, and on the other – between author and text (the outcome of the reflection). Merely taking this argument into account will pass censure on any attempt to reduce the book to a physico-objective entity.

A stereotype that is deadly restrictive on scientific thought is the idea of *the book as a commodity*. Economic changes in the mechanisms of functioning of the system of the book as well as the absolute commercialisation of book publishing and book trading have forced contemporary Book Science immediately and indirectly to respond by dropping its theoretical and methodological level. It is as if we witness the revival of the Marxist understanding that the book is like any other

commodity having consumer value and yielding profit. Such a proposition would be justified if *the essence* (the book) and *the appearance* (the publication) matched – if the reader bought only the “commodified physical body” of the book and if that very same “commodified physical body” disappeared in the consumption process. *Commodities* are products manufactured for sale, and books become commodities only after becoming a part of the economic value chain. Outside it the book is not a commodity (Belovitskaya, 2009: 167-168). The book was not created in human society as a product for sale (Belovitskaya, 2009: 297). “The wrongful pragmatic-commercial attitude to the book only as *a commodity* and to book production only as *a manufacturer* of this commodity, which is rooted in the professional mindset of book practitioners and some theoreticians, has provided sufficient ground to re-examine the nature, essence, forms and social purpose of the book in a more detailed way.” (Belovitskaya, 2009: 42).

To sum up, the scientific approach to the category “book” requires disregard for a handful of old conventions and liberation from connotational and stereotypical thinking. For instance:

- A distinction should be made between “*the content of the category ‘book’*” and “*the content of the book*”, i.e. between the abstract scientific category and the specific human work.

- The categories “*essence*” and “*appearance*” should not be confused. There are still authors who wrongfully put a sign of equality between “*essence*” and “*appearance*” in their interpretation of the essence and the content of the category “book”, on the basis of which they reduce it to a printed copy.

- Relativise the general idea of the book as *a spirit* or *a monument*, which hinders scientific thought.

- Relativise the synonymous relationship between book and *work of fiction*, which is an expression of a one-sided philologisation.

- Expose the harmful synonymisation of the book with *an object* or *a thing*, which demonstrates one-sided and vulgar sociologisation.

- Relativise the synonymisation of the category “book” with the *printed copy*, i.e. the physical-material, constructive form of existence of the book.

- Realise the fundamental inadequacy and incorrectness of the formula “*the book is a commodity*”. The penetration of this formula into the higher education system transforms in economic terms the interest therein and leads to the mercantilisation of the educational need, reducing it to an entrepreneurial skill in the book-related business. It is important to remember that the essence of the book and the content of an adequate theory thereof are not subject to change in a market environment characterised by a shortage of economic, managerial and organisational knowledge and skills in book practitioners.

**All of the above is important for the future of science and future of the book alike because, as book scientist A. Belovitskaya explains, *old-fashioned interpretation and stereotypical understanding of the category “book”* restrict the possibilities of the book to compete with the modern tools for storing, transmitting and carrying information and predetermine it as a failed medium (Belovitskaya, 2009: 82, 86). The final reason for the reluctance toward the research as well as the low popularity of pursuing a university degree in book-related professions most probably is the strong dissonance and terminological discrepancy in the structure of higher education in this direction.**

In order to verify this assumption, we undertook an analytic-synthetic processing of primary sources. The information collected is from various parts of the world. **21** countries have been identified that match the search criteria. **52** degree programmes for education in the thematic field of the book have been established. The country distribution is as follows: Belgium (1), Bulgaria (3), Canada (3), Czech Republic (1), Estonia (1), France (1), Germany (12), Greece (1), Italy (3), Lithuania (2), Moldova (1), Netherlands (2), Norway (1), Poland (4), Romania (1), Russia (1), Slovenia (1), Switzerland (1), Ukraine (6), United Kingdom (3), USA (3).

Table 1 (*Appendix*) describes each programme under the following categories: programme / discipline offered; objectives; contents; faculty, university; country. The profile for each programme is standardised according to the essential information relating to the objectives of the research. The key empirical information is broken down into four basic categories using the IFLA matrix for Library, Archive and Information Science Education (IFLA, 2007) as well as that of the Royal School of Library and Information Science (RSLIS, 2005):

I. Information on the types of educational systems of regional and geopolitical levels.



II. Information on the disciplinary (organisational) affiliation.

III. Information on the objectives – the stated goals for the level and type of professional work are summarised.

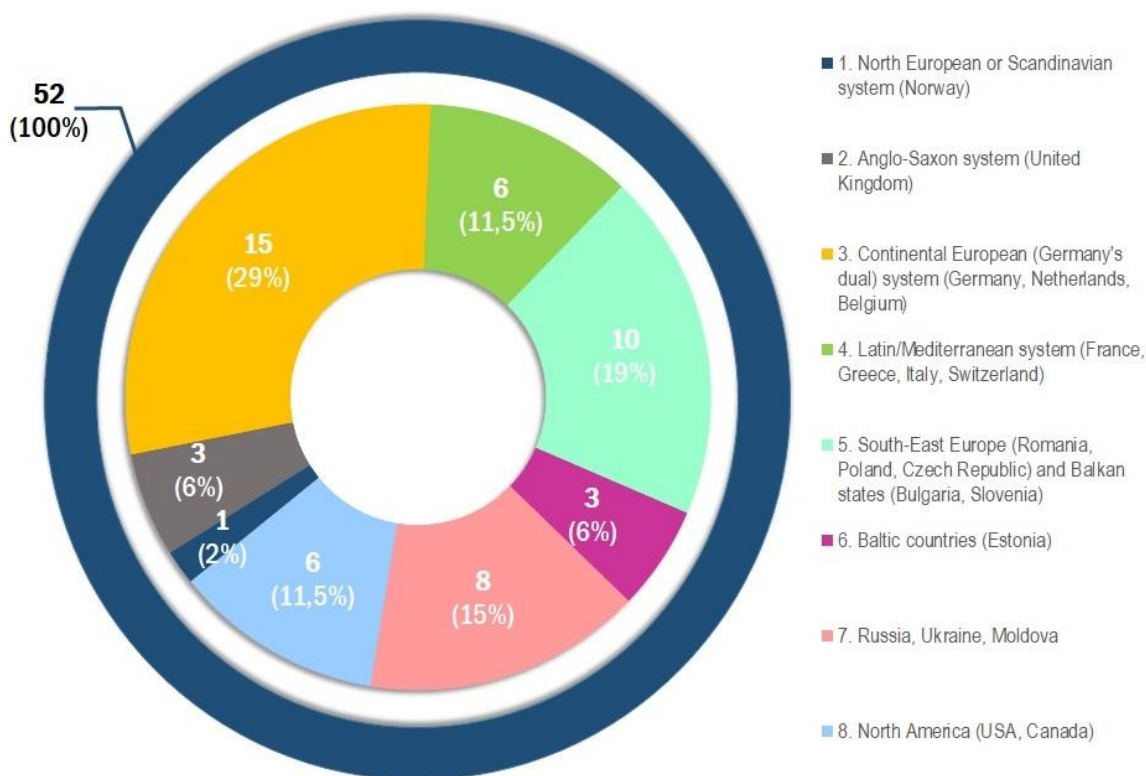
IV. Information on the contents (fields of expertise offered) – core courses and other selected topics, which are part of the programme, are listed.

The analysis and conclusions are made on the basis of processing the current information provided as well as on knowledge of the research and educational paradigms in the field of Book Science in Europe.

**Results based on the types of educational systems of regional and geopolitical levels**

The degree programme categorisation based on regional specificities demonstrates the broadest support for higher education on Book Science in countries with Continental Dual system (Germany, Netherlands, Belgium) – 15, as well as in South-East Europe (Romania, Poland, Czech Republic) and the Balkan states (Bulgaria, Slovenia) – 10.

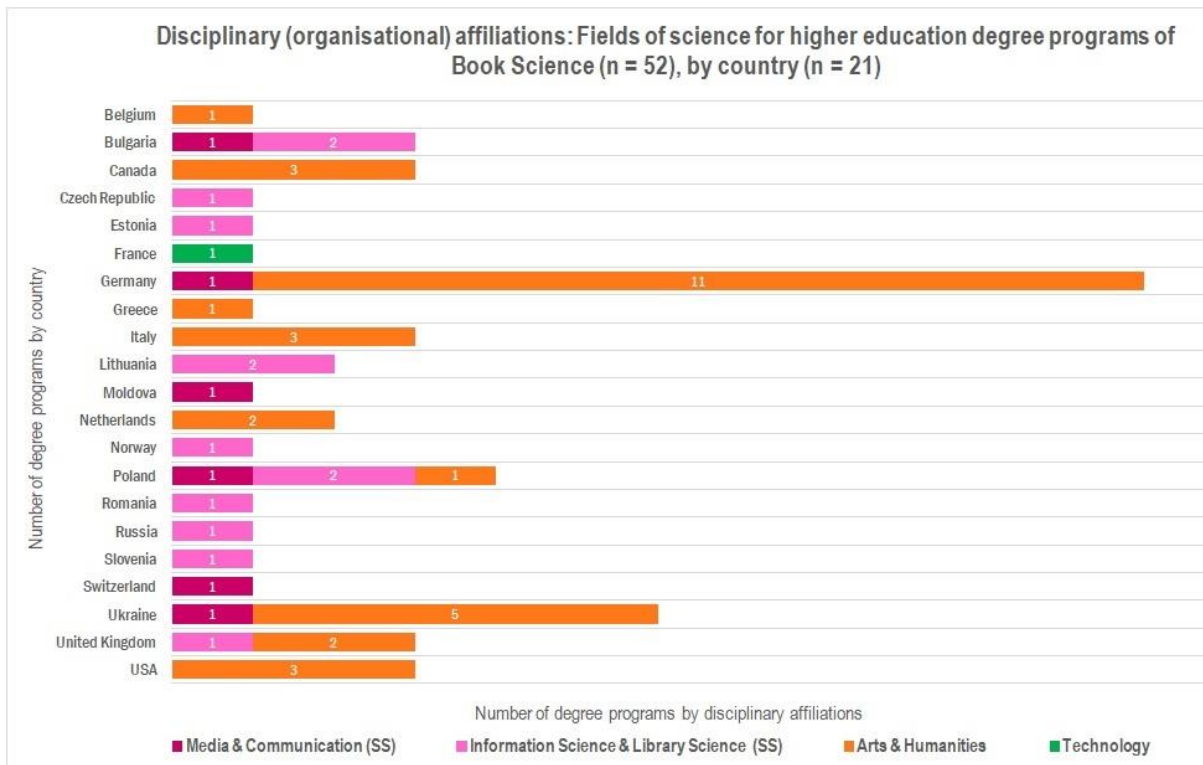
Number of degree programs with a focus on the book (n = 52)



**Fig. 2.** Number of degree programmes related to studying the book (n = 52) by type of educational system

**Results based on the disciplinary (organisational) affiliation**

The degree programmes were categorised based on their organisational affiliation with a particular academic institution, within a specific faculty or specific academic department, or with a particular subject area or specific subject/discipline. Our purpose was to establish that the curricula of the Book Science degree programmes tend to belong to the subject area of Media and Communication (6), which is relevant to the cross-disciplinary paradigm of the innovative science of book – a combination of Bibliology (Book Studies) and Mediology (Media and Communication Studies).

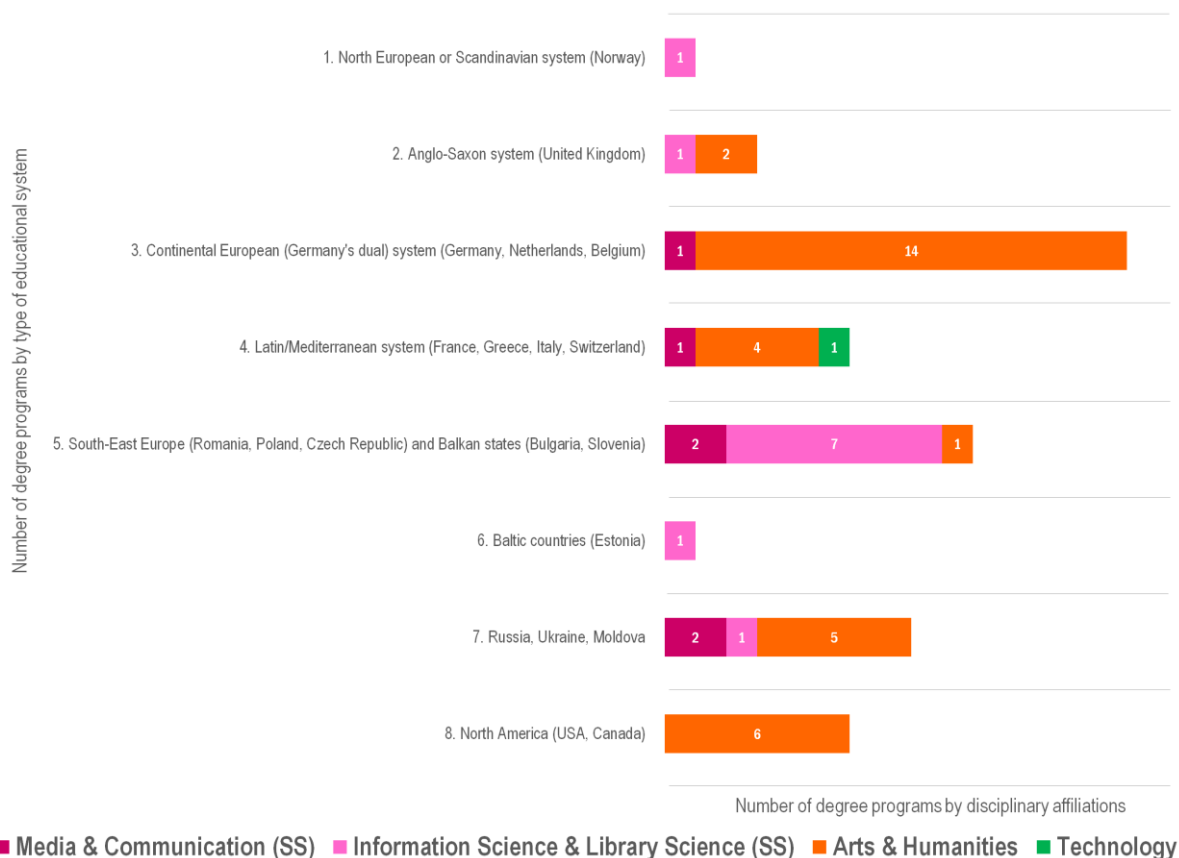


**Fig. 3.** Disciplinary (organisational) affiliations: Fields of science for higher education on Book Science (n = 52), by country (n = 21)

It seems that Arts and Humanities (32) are the most common academic umbrella for Book Science education programmes, which is a radically different field from the scientifically correct one, i.e. Social Sciences (19). Higher education on Book Science belongs to the tradition of the liberal arts in countries following Germany's dual system model (14) and in North America (6). Some of these liberal arts degree programmes stand out with their hardly relevant discipline-specific affiliations with Philosophy, Philology, Education. One such programme in France has even been placed within the extravagant academic field of "Technology".

Research has shown that large differences still exist concerning the objectives and contents offered in the field of the theoretical and practical knowledge of books. Very often, there is no clear difference between the degree programmes' goals, learning outcomes and fields of expertise offered; the programmes have similar names but different courses and topics; no target audiences are specified, etc. This lack of uniformity has been causing a number of barriers between higher education institutions that offer degree programmes in the said field, in particular related to the credit transfer processes, mobility, recognition of learning outcomes and the disciplinary skills that are expected from employees.

Number of degree programs with a focus on the book by disciplinary affiliations (n = 52)



**Fig. 4.** Number of degree programmes on the subject of “book” based on their disciplinary affiliation (n = 52)

It is our belief that precisely the most advanced and recent knowledge about the book as a subject matter needs to be taught. Today such knowledge is generated within the paradigm of the book as a medium and as communication. Based on the classification of OECD FOS 2012 or FORD 2015, used by Web of Science, Scopus, and the global Academic Ranking of World Universities and QS World University Rankings, the academic focus of the higher education on Book Science has to fall into the subject category of Social Sciences, subject area of Communication or Media and Communication (OECD, 2015: 59). Considering the importance of the applicability of the knowledge acquired for the students’ future careers, we insist on the above for two major reasons: (a) Because one of the key goals of higher education is creating a broad advanced knowledge base for students (Council of Europe, 2007), comprising the newest, leading, most avantguard knowledge in the field; (b) Because the key stakeholders, mostly employers, are primarily from the communications, media and publishing industry so they require professionals with academic qualifications in the field of communications, media and publishing.

The situation in higher education outlined above demonstrates a shortage of conceptual knowledge and its weak structuring while the programs are incommensurable, not comparable and non-transferable between the states. The conclusion deduced from the research on worldwide higher education programmes focused on the academic field of the book is that unlike unified terminology and university degrees in the fields of law, economics, medicine, etc., book-related subjects and degrees could drive to desperation young people aspiring to obtain education therein. Instead of using the unified name “Book Science”, universities around the world choose highly specific or marginal wordings even for their bachelor programmes. Equally strongly dispersed is the subject orientation of the departments carrying out the scientific, academic and educational

activities in the field of the book in various countries. Some place the category “book” within Social Sciences, others – within Humanities, yet others – within Pedagogy, and even Arts. This state of affairs, on the one hand, demonstrates that the book is indeed a general scientific category as researchers from numerous fields show justified interest in it, and it is undoubtedly subject to examination by all sciences in its two fundamental aspects – form and content, text and medium. On the other hand, this lack of coordination raises doubts on the uniform understanding of “book” in all its aspects among scientists. Further to this comes the warning of entrepreneur Elon Musk: “It is important to view knowledge as sort of a semantic tree – make sure you understand the fundamental principles, i.e. the trunk and big branches, before you get into the leaves/details or there is nothing for them to hang on to” (Musk, 2015).

**Future research**

The expected effect of the present research work is the wide popularisation of the concept of the book as a key and non-circumventory mediator in the exchange of socially significant information, which provides sufficient scientific arguments and tools for project work across the system of the book as well as for predicting the future transformations in the overall lifecycle of the book (authors – mediators – readers). The idea is to reinforce and expand the scientific theoretical and applied use of the notion of “book as medium” as well as its genealogically adequate media status, which will ensure winning behaviour in the so called war for the reader in the Attention Economy and will pacify heated debates and negative forecasts regarding the future of the book and reading.

The proposed framework of the Media Science of Book is expected to:

- ⇒ foster conditions for innovative and proactive research perspectives as well as critical attitude and conceptual thinking with regard to the genealogy, evolution and metamorphoses of the book;
- ⇒ provide orientation in the primary and alternative sources of information in strategic planning used in scientific research and the applied fields of study of the book;
- ⇒ show ways for examining the book as a medium adequate to all civilisations, and book production – as a foundation of the creative industries, media industries and media culture.

An innovative Book Science could serve as a generator of research topics and project development ideas based on Bibliology and Mediology, as well as on the Communication and Information Sciences. Below are four potential directions which offer good prospects for research and implementation (Table 2).

**Table 2.** Possible future directions for study and research of the book

Dynamics	Statics	Pragmatics	Innovatics
<ul style="list-style-type: none"> <li>▪ The book as a soul and body (psychosomatics)</li> <li>▪ The book as a symbol and metaphor (semiotics)</li> <li>▪ The book as a function of the four “elements” (fire, water, air, earth)</li> <li>▪ The book as a conversation (open books, collective books, updatable books, etc.)</li> <li>▪ The book as a conflict (controversial books, provocative books, books aiming</li> </ul>	<ul style="list-style-type: none"> <li>▪ Eroticism of the physical book</li> <li>▪ Unnecessary book (dysfunctional) – unsold, feedstock, second hand, scrap, etc.</li> <li>▪ Scary book (unwanted for reading)</li> <li>▪ Discomfort book (non-ergonomic, non-friendly, repulsive to readers)</li> <li>▪ Weird book (unusual in form or purpose, or undeciphered)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Book-object (book-art object), ready-made object and artist's book</li> <li>▪ The book as a personal belonging</li> <li>▪ The book as a thing (souvenir, etc.)</li> <li>▪ Edible books, books-to-eat</li> <li>▪ The book as a gift</li> <li>▪ Trivia books</li> <li>▪ Dummy books</li> <li>▪ Contraband books</li> <li>▪ The book as sculpture; the</li> </ul>	<ul style="list-style-type: none"> <li>▪ Alternative physical books (pre-paper and post-paper)</li> <li>▪ Mutations of the book as medium</li> <li>▪ Data Science of the book (the book as a relational database, the book as an informational artefact, the book as an intelligent interface)</li> <li>▪ Bioinformatics of the book (the book as biosis–abiosis, brain-computer, user-driven interface)</li> <li>▪ Biosemiotics of the book</li> </ul>

<p>to discredit s.o./s.th, scandalous books, etc.)</p> <ul style="list-style-type: none"> <li>▪ The book as a tool for manipulation (scientific, religious, psychological, work of fiction, etc.)</li> <li>▪ Dangerous books (fake books, bogus science books, sect books, terrorist books, negational books, discriminatory books, fundamentalist books, etc.)</li> <li>▪ Book-hypothesis</li> <li>▪ Prophetic book (books containing prophecies, predictions and providence)</li> <li>▪ Pygmalionics of the book – fetishism, transforming the object of desire into sculpture</li> </ul>	<ul style="list-style-type: none"> <li>▪ Optimal book (book maximum, most expensive, most valuable, largest, smallest, most beautiful, ugliest, etc.)</li> <li>▪ Extravagant and eccentric book</li> <li>▪ Snobbery and books</li> <li>▪ Disposable book (on perishable media)</li> <li>▪ Empty book, “mute” or “silent” book (book without text)</li> <li>▪ Non-books (products made from books, which imitate books)</li> <li>▪ Anti-books</li> <li>▪ Bibliocadavers</li> </ul>	<p>sculpture as book</p> <ul style="list-style-type: none"> <li>▪ The book as accessory (books-jewellery, etc.); book accessories</li> <li>▪ The book as background (in photography, television or cinema)</li> <li>▪ The book in home décor</li> <li>▪ The book as indoor media</li> <li>▪ The book as ambient media</li> <li>▪ Architecture and design inspired by books (by their content, form or appearance) – media facades, media exterior, furniture, buildings, social landscape requisites</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ecology of the book (information ecology, media ecology)</li> <li>▪ Futurology of the book as a communication medium</li> </ul>
---	---	---	--

It is likely that the present text may contain debatable hypotheses as well as a number of terms that do not belong to communication and information theory, which could seemingly pose difficulties for the narrowly specialised comprehension of the research proposition. However, all of these reveal an alternative examination of the phenomenon of “book”, that is, an alternative perspective which is not always innovative but rather anticipatory, voiced earlier in a different semiotic and semantic order which will help us rediscover the wealth of Book Science.

## 6. Conclusion

Further research could answer the following questions: Why is there such wide diversity of scientific, academic and education references to the field of the book in different countries? To what extent are these fields of book-related research or education taking into account any International Standard Classification of professions and economic activities or at least the subject groups of the Universal Decimal Classification (UDC)? Do the variability of terminology and the lack of global coordination in the names of university majors affect how and to whom books are taught? How does the professional qualification of local or regional groups of researchers affect the research tasks and outcomes of objective book studies? How does the academic qualification of university lecturers affect their teaching of knowledge about the book? Do differences in the names or the specific scientific field of the academic discipline affect the conceptual and balanced understanding of the book as the oldest medium? Further research on the relationship between the majors in higher education institutions focused on the cognition of the book, as well as of the dynamics of the research programmes on the book could lead to a broader and deeper understanding of the nature and power of the book for the management of social, economic and political processes on a global scale.

In his works “Problems of the philosophy of the book” (Kufaev, 1924) and “The book in the process of communication” (Kufaev, 1927), written 95 years ago, Russian book scientist Mikhail



Kufaev gave a most precise direction for the general scientific study of the book by demanding the clear demarcation of the area of integration and cohesion (i.e. mediality) between book and reader, between Book Science and the Psychology and Sociology of reading, between the needs and interests of the readers, their values as well as national and cultural traditions: *“Nature, humans and books make up the greatest triad of life. The author restricts himself through the inability to express his thoughts using words; his “clipped” thought is unleashed in the physical nature of the book through the artistic embodiment of this partial thought and the words of the book, in the social process of reading, experience and behavior, it is filled up with meaning, ultimately revealing all thoughts of the author, the reader, the critic, and the public figure. This process continues all the way while the book is being reflected on in space and time. Hence, the issue about life and man as a communicative being becomes one with the issue about the book. Solving these problems in science, literature, technology and the living environment is equally a duty and a feat.”* (Kufaev, 2004: 158-159).

Book-science educators and book researchers in the 21-st century are tasked with an irrevocable duty: If they defend and rediscover the media essence of the book, they will get closer to answering the question why and how everything happens in civilisation and human life. “The Book” might turn out to be a reference to the mysterious number “42” from “The Hitchhiker's Guide to the Galaxy” – the “meaning of Life, the Universe, and Everything”.

### 7. Acknowledgements

This study was made possible by a grant from the Sofia University Science Fund through the Grant Number 80-10-205/17.04.2019. Contents are solely the responsibility of the authors and do not necessarily represent the official views of the funder. The authors are thankful primarily to the editor and reviewers for their comments in preparing this publication.

### NOTES

\* Such synonymization is acceptable among sciences in different languages as far as the terms “mediology”, “medialogy” and “media studies” are concerned; another example would refer to “editorics” and “editology”, which have not been acknowledged by the world’s scientific terminology and stand for “science of publishing” or “publishing studies” only in French while in English or Italian they would mean “science of editing”.

<sup>2</sup> Informodynamics is a scientific discipline which studies the information phenomenon in the process of its self-organisation, the rules governing the information phenomena and their relations to the energy phenomena, including intellect, reason and all other negentropic information processes.

<sup>3</sup> Régis Debray (born 1940) is the author of “Course in General Mediology” (Debray, 1991), “Life and Death of Image” (1992), “Manifestes medialogiques” (1994), “Introduction to Mediology” (Debray, 2000a), „Transmitt” or „Transmitting Culture” (Debray, 1997; 2000b), etc. From 1981 to 1995 he is an official adviser on Foreign Affairs to Président François Mitterrand.

<sup>4</sup> Contributory work: Benjamin, Walter (1936). The Work of Art in the Age of Mechanical Reproduction. Repr.: London: Penguin Books, 2008.

<sup>5</sup> Contributory works: „The Gutenberg Galaxy: The Making of Typographic Man” (1962), „Understanding Media: The Extensions of Man” (1964), „The Medium is the Massage: An Inventory of Effects” (1967), „War and Peace in the Global Village” (1968), „From Cliche to Archetype” (1970).

<sup>6</sup> Contributory works: „Théorie de l'information et perception esthétique” (1973), „Sociodynamique de la culture” (1973), „Theorie des actes, vers une ecologie des actions” (1977), „Labyrinthes du vecu” (1982), „L'education aux communication et societe” (1986), „Psychosociologie de l'espace” (1998).

<sup>7</sup> The term “format” is used in the information-communication sense of a specific structure of the information object which allows it to be identified in the system of recording media (the so-called media for recording). The classification of the formats of the world's largest library catalogue WorldCat follows this principle. The book is one of a total of 19 formats and is represented by 8 sub-formats: e-book, thesis/dissertation, microform, continually updated resource, braille book, large print, audiobook (CD, cassette, eAudiobook, LP), e-singles.

<sup>8</sup> The meaning of polymorphism is illustrated by the hybrid creatures from mythology, archeology and art – cherub, sphynx, sirus, griffon, centaur, etc. which embody a synergy of power and mind, energy and matter, earthly and unearthly, nature and civilisation, to fulfill their mission of guards and mediators between different worlds.

<sup>9</sup> It is known that the majority of people are limited in their dreams which essentially represent people's current experience projected into the future. This statement was proved by the author's annual survey carried out among students majoring in Book Publishing at the Sofia University (from November 2010 to day). When asked "What is your dream book?" (an experiment on project-based thinking), students come up with interesting ideas which, however, do not extend beyond their personal practical and reading experience.

## References

[Bakun, 2008](#) – *Bakun, D.* (2008). N.M. Sikorskiy i razvitie nauki o knige [Sikorsky and book science development]. Rossijskaya akademiya nauk. Moskva: Nauka. [in Russian]

[Belovitskaya, 1987](#) – *Belovitskaya, A.* (1987). Obhee knigovedenie [General book study]. Moskva: Kniga. [in Russian]

[Belovitskaya, 2009](#) – *Belovitskaya, A.* (2009). Knigoznanie [Book science]. Sofia: Za bukвите – O pismeneh. [in Bulgarian]

[Benjamin, 1936](#) – *Benjamin, W.* (1936). The Work of Art in the Age of Mechanical Reproduction. Repr.: London: Penguin Books.

[Bodnarskiy, 1983](#) – *Bodnarskiy, B.* (1983). Rol' A.M. Lovjagina v naukah o knige [The role of A.M. Lovjagina in book sciences]. Kniga: Issledovaniya i materialy. T. 47. Moskva: Nauka, pp. 159-169. [in Russian]

[Council of Europe, 2007](#) – Council of Europe (2007). Recommendation CM/Rec(2007)6 by the Committee of Ministers to Member States on the Public Responsibility for Higher Education and Research.

[Debray, 1991](#) – *Debray, R.* (1991). Cours de médiologie générale. Paris: Gallimard.

[Debray, 1996](#) – *Debray, R.* (1996). Media Manifestos: On the Technological Transmission of Cultural Forms. New York: Verso.

[Debray, 1997](#) – *Debray, R.* (1997). Transmettre. Paris: Jacob.

[Debray, 1999](#) – *Debray, R.* (1999). What is Medology? Transl. by Martin Irvane of Regis Debray Qu'est-ce que la médiologie? Le Monde Diplomatique, August.

[Debray, 2000a](#) – *Debray, R.* (2000). Introduction à la médiologie. Paris: Presses Universitaires de France.

[Debray, 2000b](#) – *Debray, R.* (2000). Transmitting Culture. New York: Columbia University Press.

[Debray, 2003](#) – *Debray, Régis* (2003). Einführung in die Mediologie: Facetten der Medienkultur. [Introduction à la médiologie]. Bern: Haupt Verlag.

[Dovnar, 2011](#) – *Dovnar, L.* (2011). O roli lichnosti v razvitiu nauki o knige, ili Shtudii Kshishtofa Migonja [On the role of the individual in the development of the science of the book, or Study of Kshishtofa Migonja. Berkov readings]. Berkovskie chteniya. Knizhnaya kultura v kontekste mezhdunarodnykh kontaktov: materialy Mezhdunarodnoy nauchnoy konferencii, Minsk, 25-26 maja 2011 g. Moskva: Nauka, Fond Knizhnaya kultura, pp. 124-128. [in Russian]

[Dovnar, 2012](#) – *Dovnar, L.* (2012). Vozniknovenie i razvitie nauki o knige v Belarusi: istoki i perspektivy knizhnoy kultury vo vzaimosvjazi [The emergence and development of the science of books in Belarus: the origins and prospects of book culture in the relationship]. Fedorovskie chteniya, 2011. Rossijskaya akademiya nauk. Moskva, pp. 250-265. [in Russian]

[ENQA, 2015](#) – ENQA (2015). Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG). Brussels: European Association for Quality Assurance in Higher Education, 2015.

[Escarpit, 1966](#) – *Escarpit, R.* (1966). The Book Revolution. London: Harrap.

[Estivals, 1978](#) – *Estivals, R.* (1978). La Bibliologie: Introduction historique à une science de l'écrit. T. 1: La Bibliométrie. Paris.

[Estivals, 1987](#) – *Estivals, R.* (1987). La Bibliologie. [2nd ed.]. Paris: Presses universitaires de France.

**Estivals, 1998** – *Estivals, R.* (1998). Vers un nouveau modele bibliologique Neo-liberal mondial. In: Bibliotekoznanie, bibliografija, knigoznanie. Sb. 7. Sofija: Narodna biblioteka Sv. sv. Kiril i Metodij, pp. 19-26.

**Estivals, 2002** – *Estivals, R.* (2002). Bibliologie. In: Dictionnaire encyclopédique du Livre. [T. 1]. Paris: Éditions du Cercle de la Librairie.

**ETIS, 2018** – ETIS (2018). Classification: Fields of research. In: Estonian Research Information System (ETIS). [Electronic resource]. URL: <https://www.etis.ee/Portal/Classifiers/Index?lang=ENG> (accessed 20.09.2019).

**European Parliament, 2016** – European Parliament (2016). Ebooks: Evolving Markets and New Challenges. European Parliamentary Research Service. Briefing, February 2016. PE 577.954. [Electronic resource]. URL: [http://www.europarl.europa.eu/RegData/etudes/BRIE/2016/577954/EPRS\\_BRI\(2016\)577954\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/BRIE/2016/577954/EPRS_BRI(2016)577954_EN.pdf) (accessed 20.09.2019)

**Fedorov, Kolesnichenko, 2013** – *Fedorov, A.V., Kolesnichenko, V.L.* (2013). Marshall McLuhan and Umberto Eco as theorists of media education. In: Representations of Canada. Vol. 8. Volgograd: Volgograd State University, pp. 74-82.

**Fischer, 1996** – *Fischer, J.L.* (1996). Medialogy. In: Fischer, J. L. Reading The Mediatrix: An Innovative Strategy in Developing Online Media and Technology for Learning. Geocities, 1996. [Electronic resource]. URL: <http://www.geocities.ws/jlynnfischer/medialogy.html> (accessed 20.09.2019)

**Gergova, 1987** – *Gergova, A.* (1987). Knigoznaniето v Bulgaria. Sofia: Nauka i izkustvo. [in Bulgarian]

**Hartmann, 2003** – *Hartmann, F.* (2003). Mediologie: Ansätze einer Medientheorie der Kulturwissenschaften. Wien: Erschienen beim WUV Verlag.

**IFLA, 2007** – IFLA (2007). World Guide to Library, Archive and Information Science Education. Ed. by Axel Schniederjürgen. 3rd ed. München: K.G. Saur.

**Innis, 1923** – *Innis, N.* (1923). A History of the Canadian Pacific Railway. London: P. S. King.

**Innis, 1986** – *Innis, H.* (1986). Empire and Communications. Toronto: Press Porcepic Victoria.

**Janssen, 2006** – *Janssen, F.A.* (2006). The first encyclopedia devoted to the world of books: Peignot's Dictionnaire de bibliologie of 1802. *Quaerendo*, Vol. 36, №1–2, pp. 85-97.

**Kufaeв, 1924** – *Kufaeв, M.* (1924) Problemy filosofii knigi [The problems of philosophy of the book]. Leningrad: Nachatki znaniï. [in Russian]

**Kufaeв, 1927** – *Kufaeв, M.* (1927) Kniga v protsesse obshcheniya [The book in the process of communication]. Moskva: P. Vitiazev. [in Russian]

**Kufaeв, 2004** – *Kufaeв, M.* (2004) Problemy filosofii knigi; Kniga v protsesse obshcheniya [Problems of philosophy of the book; the book in the process of communication]. M.: Nauka. [in Russian]

**Lelikova, 2007** – *Lelikova, N.* (2007). Nauka o knige v Rossii, ili k voprosu o metodologii istoricheskikh issledovanij [The science of the book in Russia, or to the issue of the methodology of historical research]. Kniga: Issledovanija i materialy. T. 86, №1. Moskva: Nauka, pp. 67-88. [in Russian]

**Lelikova, 2010** – *Lelikova, N.* (2010). Trends of the book science development in western Europe in the 17<sup>th</sup>–18<sup>th</sup>. *Knygotyra*, Vol. 54, pp. 54-61.

**Lenskiy, Vasilev, 2007** – *Lenskiy, B., Vasilev, V.* (2007). Nauka o knige: diskussija prodolzhaetsja [Book science: the debate continues]. Kniga: Issledovanija i materialy. T. 86, №1. Moskva: Nauka, pp. 48-49. [in Russian]

**Lyutov, 2012** – *Lyutov, S.* (2012). Actual problems of development of book business and book science. *Vestnik Cheljabinskoy gosudarstvennoy akademii kultury i iskusstv*, №1 (29), pp. 18-21.

**Marzolf, 1978** – *Marzolf, M.* (1978). American Studies – Ideas for Media Historians. *Journalism History*, Vol. 5, Spring 1978, №1, p. 15.

**McLuhan, 1962** – *McLuhan, M.* (1962). The Gutenberg Galaxy: The Making of typographic man. Toronto: University of Toronto Press.

**McLuhan, 1964** – *McLuhan, M.* (1964). Understanding media; The Extensions Of Man. New York: McGraw-Hill.

**McLuhan, McLuhan, 1988** – *McLuhan, M., E. McLuhan* (1988). Laws of Media: The New Science. Toronto: University of Toronto Press.

**Migon, 1976** – Migon, K. (1976). Nauka o knižce vsrôd innych nauk spolecnych. Wrocław: Ossolineum.

**Migon, 2004** – Migoń, K. (2004). Paul Otlet o bibliologii, knižce i dokumencie. Przestrzeń informacji i komunikacji spolecnej. Kraków, pp. 370-376.

**Migon, 2010a** – Migon, K. (2010). Bibliograficheskaia rodoslovnaja nauka o knige i sovremennaja bibliologija: posledstvija i perspektivy. Trudy mezhdunarodnogo bibliograficheskogo kongressa, Sankt-Peterburg, 21–23 sentjabrja 2010 g.: Ch. 1. Sankt-Peterburg: Rossijskaja nacionalnaja biblioteka, 2012, pp. 30-38.

**Migon, 2010b** – Migon, K. (2010). Paradigms in book science: 200 years ago and today. *Knygotyra*, Vol. 54, pp. 44-53.

**Migon, 2013** – Migon, K. (2013). About the need and benefits of the research of book science history: an attempt of analysis from the perspective of the science of science. *Knygotyra*, Vol. 60, pp. 19-32.

**Migon, 2016** – Migon, K. (2016). Names of the book science: Terminology, vocabulary, and semantics. In: *Vesnik Belaruskaga dzjarzhaunaga universitjeta kultury i mastactvau*, N<sup>o</sup>1, pp. 162-170.

**Musk, 2015** – Musk, E. (2015). It is important to view knowledge as sort of a semantic tree. Reddit AMA: ElonMuskOfficial, 05.01.2015. [Electronic resource]. URL: [https://www.reddit.com/r/IAmA/comments/2rgsan/i\\_am\\_elon\\_musk\\_ceocto\\_of\\_a\\_rocket\\_company\\_ama/cnfreoa](https://www.reddit.com/r/IAmA/comments/2rgsan/i_am_elon_musk_ceocto_of_a_rocket_company_ama/cnfreoa) (accessed 20.09.2019).

**Nauka o knige, 2009** – Nauka o knige [Book science]. *Tradicii i innovacii: Materialy XII Mezhdunarodnoj nauchnoj konferencii po problemam knigovedenija*, Moskva, 28–30 aprilja 2009 g.: K 50-letiju sbornika „Kniga. Issledovanija i materialy“: [V 4 chasti]. Moskva: Nauka, 2009. [in Russian]

**Nauka o knige, 2010** – Nauka o knige [Book science]. Bibliograficheskij ukazatel. Sost. E.I. Donjagina. Novokuzneck: Kuzbasskaja gosudarstvennaja pedagogicheskaja akademija, 22 p. [in Russian]

**Nemirovskiy, 1979** – Nemirovskiy, E. (1979). K voprosu o predmete istorii knigi [On the issue of the history of the book]. *Kniga i kultura*. Moskva: AN SSSR, Nauch. sovet. po istorii mirovoj kultury; GBL. [in Russian]

**OECD, 2015** – OECD (2015). Frascati Manual: Guidelines for Collecting and Reporting Data on Research and Experimental Development, The Measurement of Scientific, Technological and Innovation Activities. Paris: OECD Publishing. DOI: 10.1787/9789264239012-en

**Otlet, 1906** – Otlet, P. (1906). Les aspects du livre: conférence inaugurale de l'exposition du livre belge d'art et de littérature organisée à Ostend par le Musée du livre. [1901]. Publication N<sup>o</sup>8. Bruxelles: Musée du Livre, 35 p.

**Otlet, 1909** – Otlet, P. (1909). La fonction et les transformations du Livre: Résumé de la conférence faite à la Maison du Livre, 14 November 1908. Brussels: Publication du Musée du Livre No. 11.

**Otlet, 1934** – Otlet, P. (1934). *Traité de Documentation: Le Livre sur le Livre: Théorie et Pratique*. Bruxelles: Editiones Mundaneum, Palais Mondial.

**Oxford, 1989** – Oxford. *Bibliology. The Oxford English Dictionary*. 2nd ed. Oxford: Clarendon Press; Oxford University Press, 1989.

**Peignot, 1802** – Peignot, G. (1802). *Dictionnaire raisonné de bibliologie*. Paris, 1802–1804. T. 1–2 + suppl.

**Pettersson, 1985** – Pettersson, R. (1985). The book as a medium. *EP Journal*, 1985, April, pp. 15-17.

**Rats, 2009a** – Rats, Mark (2009). K voprosu o sostave i strukture nauki o knige. In: *Kniga: Issledovanija i materialy*. T. 91, N<sup>o</sup>1–2. Moskva: Nauka, 2009, s. 32–42. [in Russian]

**Rats, 2009b** – Rats, M. (2009). Sostav i struktura knigovedenija kak kompleksnoj nauki [Composition and structure of book science as a complex science]. *Nauka o knige. Tradicii i innovacii: XII Mezhdunarodnaja nauchnaja konferencija po problemam knigovedenija*. K 50-letiju sbornika „Kniga. Issledovanija i materialy“. Moskva: Rossijskaja akademija nauk, 28–30.04. P. 18. [in Russian]

**Rats, 2012** – Rats, M. (2012). K voprosu o sostave i strukture nauki o knige [On the composition and structure of book science]. *Politicheskaja konceptologija*, N<sup>o</sup>4, pp. 149-158. [in Russian]



Roberts, Etherington, 1994 – Roberts, M.T., Don E. (1994). Bookbinding and the Conservation of books: A Dictionary of Descriptive Terminology, 1982. Electronic edition, Preservation Department, Stanford University Libraries during Spring.

RSLIS, 2005 – RSLIS (2005). European Curriculum Reflections on Library and Information Science Education. Ed. by Leif Kajberg and Leif Lørring. Copenhagen: The Royal School of Library and Information Science.

Sikorskiy, 1965 – Sikorskiy, N. (1965). Kniga i nauka o knige [Book and book science]. Kniga: Issledovanija i materialy. T. 11. Moskva: Nauka, pp. 5-16. [in Russian]

Sosińska-Kalata, 1997 – Sosińska-Kalata, Barbara (1997). The Reform of Information and Book Studies in the University of Warsaw. *Polish Libraries Today*, №4, pp. 27-32.

Tsvetkova, 1999 – Tsvetkova, M. (1999). Reading – anti-manipulation filter: Individuality and audiovisual manipulation: Dissertation. Sofia. [in Bulgarian]

Tsvetkova, 2012 – Tsvetkova, M. (2012). The book as medium. Sofia: Enthusiast. [in Bulgarian]

Tyunnikov, 2012 – Tyunnikov, Yu.S. (2012). Conceptual Knowledge in Pedagogy Taxonomical Environment and Classification Structure. *European Journal of Contemporary Education*, Vol. 1 (1): 68-81.

Tyunnikov, 2017 – Tyunnikov, Yu.S. (2017). Classification of Innovation Objectives set for Continuing Professional Teacher Development. *European Journal of Contemporary Education*, 6(1): 167-181.

Webster, 1913 – Webster (1913). Bibliology. In: Webster's Revised Unabridged Dictionary. Springfield: C&G Merriam Co.

## Appendix

**Table 1.** Basic information on higher education in Book Science at universities worldwide (2000–2019)

Programme/Discipline offered	Objectives	Contents	Faculty, University	Country
<b>Bachelor</b>				
1. Book Science	Students deepen and expand their knowledge in the key areas of the history of books, book trade, e-publishing and e-commerce.	The main focus is the “book” – the oldest and most important written medium for providing information, education and entertainment. Key topics: book production, book design, history of reading and the reader, research into the use of books.	Institute for the Study of the Book, Faculty of Humanities, Social Sciences, and Theology, University of Erlangen-Nuremberg, Erlangen	Germany
2. Book Science	Professionals in all fields of activity of the book trade and publishing industry (production, marketing, sales, copy-editing, press, public relations, etc.).	The medium “book” with its cultural, economic and technical characteristics is placed at the centre of the programme.	Faculty of Linguistics and Literature, Ludwig Maximilians University Munich, München	Germany
3. Book Science, Library Science and Bibliography Studies	Professionals in the field of library and information science; Professional title: librarian-bibliographer; bibliographer-specialist in book science, manager of publishing activities.	Book Science, Library Science, Bibliography Studies, Information Science, Documentation Studies, Book Trade, Library Management	Kharkiv State Academy of Culture, Kharkiv	Ukraine



4. Book Science, Librarianship and Bibliography	Professionals in the field of library and information science.	Book Science, Library Science, Bibliography Studies, Information Science, Documentation Studies, Book Trade, Library Management	Institute of Culture, Kyiv National University of Culture and Arts, Kyiv	Ukraine
5. Book Science, Library Studies and Bibliography	Professionals in the field of library and information science.	Library Science, Book Science, Bibliography Studies, Information Science, Documentation Studies, Book Trade, Library Management	Faculty of Culture and Arts, University of Lviv	Ukraine
6. Book Science, Library Studies and Bibliography	Professionals in the field of library and information science.	Library Science, Book Science, Bibliography Studies, Information Science, Documentation Studies, Book Trade, Library Management	Faculty of Communication and Management, Rivne State University of Humanities	Ukraine
7. Archive and Book Sciences	Supplies theoretical bases to book- and archive-related professions.	Book Studies, Archival and Paleographic Studies, Archival Science and Practice	Faculty of Letters and Philosophy, University of Udine	Italy
8. Book Studies	To provide libraries and other information institutions with academically educated and highly qualified information professionals.	Bibliography; Cataloguing; Indexing and Abstracting; Information Retrieval; ICT, Web and Database Design; Library Management; Library Holdings; Library Politics; Cultural Policy; Museum and Archival Studies	Department of Library and Information Sciences, Faculty of Philosophy, Sofia University	Bulgaria
9. Book Studies	Professionals in the field of information and knowledge management, librarianship, record management, development of information environment.	History of Books and Libraries; Publishing, Information Studies; Information Services; Bibliographic Description and Subject Cataloguing; Indexing and Abstracting; Collection Management; Information Systems and Networks; Database Management; Information Processes in Organizations; Marketing in Library and Information Work	Department of Information Studies, Faculty of Social Science, Tallinn University	Estonia
10. Book Studies	Students are acquainted with the methods and theories of book studies and provided with information on potential professions, so that they can plan their careers as early as possible.	The programme comprises modules from the core areas of contemporary and historical research issues relating to book studies; areas of Production, Distribution, and Reception of Books; Media History; Media Law; Media Economics	Department of Book Studies, Faculty of Philosophy and Philology, Johannes Gutenberg University Mainz	Germany
11. Book Studies	To educate professionals for specialist positions in any type of library.	Information Infrastructure of Society; Collection Building; Bibliographic Work; Information Processing; Library Services; Children's Readings	Institute of Library and Information Science, Faculty of Communication, Vilnius University	Lithuania
12. Book Studies	Professional work in libraries and media centres.	Types of Media; Computer Applications; Database Utilization; Research Methods; Research Project	Institute of Auxiliary Science and Book Studies, Faculty of Polish and Classical Philology, Adam Mickiewicz University	Poland

13. Book Studies	The student obtains the professional title of a graduate librarian and informatics specialist.	Information Science; Library Science; Computer Science	Department of Library and Information Science and Book Studies, Faculty of Arts, University of Ljubljana	Slovenia
14. Book Studies	Interdisciplinary teaching. The goal is to provide pathways for students interested in books as communication, material culture, and artistic media on a global scale.	The main focus is the “book” as multiform, extending beyond the printed codex to embrace all formats, from cuneiform tablets to electronic media. Interdisciplinary field: studying the book as a material, cultural, sociological, religious, and artistic artefact; the relationships between text and image.	College of Arts and Sciences, Oberlin College and Conservatory	USA
15. Book Studies	Interdisciplinary teaching and programming focused on the cultural, social, political, visual, and literary dimensions of the book and its fundamental role in shaping the transmission of knowledge over time and across cultures.	History, Design, and Archaeology of the Book; Bibliography; Reception Studies; History of Libraries	Center for Humanities and The Sweren Wogan Institute for the Study of the Book, Goucher College, Baltimore	USA
16. Book Studies	Provides an overview of interdisciplinary book studies and an historical context. Designed for bibliophiles who may be considering future work in publishing, libraries, teaching, graphic design and typography, book arts or information technology.	Theory and Practice of the Book; Art and History of the Book; Artist Book; Production and Transmission of Texts; Literacy and the Sociology of the Book; Technology of Reading and Writing; The Pleasure of Reading	Liberal Arts, Smith College, Northampton	USA
17. Book and Publishing Studies	The objective is to develop a comprehensive and networked understanding of the significantly changing book and media market. Opportunities as media are an important communication instrument in all industries and a value-adding component of companies.	Topics: Book and media industry; digitalisation, the interdependency of new technologies (e-books, iPad and social media); alternative business models; socio-cultural changes. The course comprises specific business and economic, legal and cultural knowledge for an occupation in the book and media industry.	Center for Book and Publishing Studies, Institut für Medien- und Kommunikationsmanagement, Universität St. Gallen	Switzerland
18. Bibliology	Supply of theoretical bases to book professions.	Research Libraries; Information Science; Editing	Faculty of Journalism, Information and Book Studies, University of Warsaw	Poland
19. Bibliology and Information Science	Professional work in all areas of library and information science	Library Science; Book Studies; Bibliography; Information Science; History of Books and	Institute of Science Information and Book Studies,	Poland

	and publishing.	Libraries; Library Automation; Research in Library and Information Science	Faculty of History, Nicolaus Copernicus University, Torun	
20. Bibliology and the Science of Information	Professional work in all areas of library and information science, including administrative and supervisory activities.	Library Science; Information Science	Department of Bibliology and Information Science, Faculty of Letters, University of Bucharest	Romania
21. Documentation and Bibliology	Professional work in libraries and documentation centres.	Documentation Studies; Information Science; Library Science	Department of Library Science, Institute of Higher Education – Social Work and Education Science Gent	Belgium
22. Book, Text, Communication	Provides professional education in archival, paleographics and textology, and preparation for communication research.	Book, Text, Communication; Archival, Paleographic Studies; Biblioteconomia	Faculty of Letters and Philosophy with Domicile in Arezzo, University of Siena	Italy
23. Book and Publishing Professions	Professional licenciate in book and publishing professions.	Book Trade, Publishing, Library	Institute of Technology, University of Michel de Montaigne – Bordeaux III	France
24. Book communications in the library and information field	Preparing future practitioners of libraries and the book business.	Information analysis in book publishing, the arts and business, Theory and methodology of book science, Book business, Information resources in the library, News and advertising information, Visualisation of textual information	Library and Information Department, St. Petersburg State University of Culture, Saint Petersburg	Russia
<b>Master</b>				
25. Book Science	Research-oriented programme. Prepares students for the specific economics of the media sector with a focus on the print industry and its digital counterparts.	Main areas: types of media and the usability of text-based communication, from the printed book to new media, audiobooks, digital media, hybrid media.	Institute for the Study of the Book, Faculty of Humanities, Social Sciences, and Theology, University of Erlangen-Nuremberg, Erlangen	Germany
26. Book Science: Book and Media Research	Promotes and trains for specialised occupational fields in the publishing industry, for which a higher degree is required, for example in the areas of online management, web 2.0 applications and social networks.	History of books and media as a whole, from manuscript culture to the e-book; production and distribution as well as reception of (book) media; methods for researching media usage behaviour; reader and consumer research.	Faculty of Linguistics and Literature, Ludwig Maximilians University Munich, München	Germany
27. Book Science, Library Science and Bibliography Studies	Professionals in the field of book science, library and information science; Professional title: Teacher of special disciplines at a higher education institute.	Book Science; Library Science; Bibliography Studies; Information Science; Documentation Studies; Book Trade; Library Management	Kharkiv State Academy of Culture, Kharkiv	Ukraine

28. Book Science, Librarianship and Bibliography	To provide the education necessary for effective operation as a professional librarian and experience in book science, library and information science.	Book Science; Library Science; Bibliography Studies; Information Science; Documentation Studies; Book Trade; Library Management	Institute of Culture, Kyiv National University of Culture and Arts, Kyiv	Ukraine
29. Book Studies	A research-oriented programme. The goal is to acquire the ability to evaluate the function of the book in a social and media context.	Knowledge of book market structures and the critical analysis of the factors in book market development; legal and economic issues; publishing management	Department of Book Studies, Faculty of Philosophy and Philology, Johannes Gutenberg University Mainz	Germany
30. Book Studies	A research-oriented, media-focused consecutive course. Conveys in-depth knowledge of structures, processes, contents, effects and history of media-based communication.	Book Studies as a Media Science; Book History; Book Economy; Book Marketing; Book Publishing; Act of Reading	Institute of Communication and Media Studies, Faculty of Social Sciences and Philosophy, University of Leipzig	Germany
31. Book Studies	Gives priority to the study of the relationship between text, book and culture as well as the anglophone cultural area.	Book Studies places the "book" at the centre of its theory and research in a historical and contemporary perspective. Main areas: Literary Studies, Cultural Studies, Linguistics.	Chair Book Studies (formerly Institute for Book Science & Text Research), English Department and the Department of Philology, University of Münster	Germany
32. Book Studies	Prepares students for publishers, book dealers, employees at auction houses and libraries.	Interdisciplinary approach to books. Knowledge is fixed and displayed in books, which thereby form an intrinsic part of information and communications media.	Faculty of Humanities, University of Amsterdam	Netherlands
33. Book Studies	Professional publishing and editing; education of information specialists.	Early Printed Books and Incunables; Bookbinding; Codicology; History of Bookprinting; History of Libraries; Modern Book Lay-out; Information Processing of Old Books (Cataloguing, Digitisation); Electronic Systems of Cultural Heritage	Institute of Information Studies and Librarianship, Faculty of Arts, Charles University in Prague	Czech Republic
34. Book and Digital Media Studies	Successful careers in a wide range of fields, including all branches of the book trade, libraries, the cultural heritage sector and the knowledge industry; employment as antiquarians, booksellers, librarians, curators, and project managers for publishing companies.	History of the Book; New Media and Society; Publishing Studies; Concepts in Information Transition and Digital Media Technology; Digital Access to Cultural Heritage. Detailed knowledge and important academic skills in the field of Book Studies.	Faculty of Humanities, Universiteit Leiden	Netherlands
35. Book and Media Studies	Prepares students for vocations in journalism, publishing, editing, communications and graduate programmes in information and library science.	Interdisciplinary and historical investigation of the role of printing, books, reading, and electronic and digital media in cultures past and present. Topics: manuscript and book production, internet publishing, book	Faculty of Arts and Science, St. Michael's College, University of Toronto	Canada

		illustrations, advertising, censorship, reading and entertainment alongside the development of mass media		
36. Book and Library Science	Professional work in book and library science.	Types of Media; Computer Applications; Database Utilization; Research Methods; Research Project	Department of Book Studies, Faculty of Philosophy and Philology, Johannes Gutenberg University Mainz	Germany
37. Book History and Print Culture	Prepares students to work in library service, in culture management, and in historical archives.	History of the Book; Cultural Heritage; Information and Society	Department of English, Faculty of Information Studies, Massey College, University of Toronto	Canada
38. Book: History and Techniques of Analysis	The programme provides a deep understanding of key issues and methods in book history and familiarises students with the invention, development, spread and transformation of printing.	Interdisciplinary approach to the study of the book world from the inception of the printed book in the 15th century to the invention of the mechanised press in the 19th century. Topics: Books and Readers in Early Modern Europe; Intellectual History; Paleography; Manuscript Studies; Documents and Sources; Bibliography	School of History, University of St Andrews	United Kingdom
39. Book History and Material Culture	Prepares students for careers in a variety of fields, from publishing to positions in libraries, archives, museums, galleries, and academia. Work placement options: publisher, bookseller, private collector.	Area of interdisciplinary study that explores the “book” as an artefact in material culture. Main topics: studying the material production, circulation and reception of books and print, rare books, manuscripts and special collections. Core courses: Cultures of the Book; Working with Collections	Centre for the History of the Book, Chartered Institute of Library and Information Professionals, University of Edinburgh	United Kingdom
40. History of the Book	Prepares students for careers in related fields, including academic librarianship, museum curatorship, publishing, art, and the print and antiquarian book trade.	Area of humanities that explores the different material forms the book has taken over time, from clay tablets to computer screens. Optional courses allow for in-depth analysis of the history of specific components of the book. Key topics: Textual Editing, Bibliography, Bibliometrics, Palaeography, Codicology, History of Printing, History of Publishing, History of Reading, Library History, Digital Publishing	Institute of English Studies, School of Advanced Study, University of London	United Kingdom
41. Children's Book and Educational Material	The aim is the education and training of specialised scientists, capable of exploiting children's books and designing educational material, acquiring the 'know-how' so as to contribute effectively to the encounter of new	Core courses: Theories of Children Literature; History and Pedagogy of the Media; Reading and Literary Reception in Education; Pedagogical Act and Theatrical Art; Psychopathology in School; Educational Material and	Department of Pre-school Education and Educational Design, School of Humanities, University of the Aegean, Rhodes	Greece



	educational, reading and social problems.	Mathematics; Inquiring Methodology - Research Methods; The Children's book as a Text and as an Object		
42. E-books	Interdisciplinary teaching focused on the possibilities and challenges concerning the production, distribution, reception, reading and other types of use of e-books. Prepares students for careers in academic and public libraries.	Psychology and phenomenology of reading; E-books as part of book markets and literary fields; E-books as material, technological, and cultural artefacts; E-books in Danish, Norwegian and Swedish libraries and markets; Copyright and licensing	Department of Archivistics, Library and Information Science, OsloMet – Oslo Metropolitan University, University of Borås, The Reading Center at the University of Stavanger, Oslo	Norway
<b>Doctoral</b>				
43. Book Science	Allows students to develop core competencies in book studies; research development in media, communication and information science.	Contemporary book knowledge, Media and Communication Studies, Research Methods; Research Project	Department of Press Journalism and Book Publishing, Faculty of Journalism and Mass Communication, Sofia University	Bulgaria
44. Book and Library Science	Research in all areas of book, library and information science.	Research project in Book, Library and Information Science	Department of Book Studies, Faculty of Philosophy and Philology, Johannes Gutenberg University Mainz	Germany
45. Book Science, Librarianship, and Bibliography	Prepares students for a career in research and teaching in the fields of book science and library science.	Research project in Book Science and Library Science	Department of Library and Information Sciences, Faculty of Philosophy, Sofia University	Bulgaria
46. Book Science and Documentation	Research topics based on individual interests.	Research project in Communication and Information Sciences; Book Science; Documentation Studies	Institute of Library and Information Science, Faculty of Communication, Vilnius University	Lithuania
47. Book Studies	Research topics based on individual interests.	Area of interdisciplinary research of historical and current, cultural and economic significance in the interplay of literary, cultural, book and media-scientific questions. Key topics: narrative and publication forms of literature and media; media cultures, media changes	Department of Book Science, Gutenberg Institute for World Literature and Written Media, Goethe University in Frankfurt, Johannes Gutenberg University Mainz	Germany
48. Book Studies	Research development in book and media science.	Academic research in the field of "book communication" as a complex system.	Institute for the Study of the Book, Faculty of Humanities, Social Sciences, and Theology, University of Erlangen-Nuremberg, Erlangen	Germany
49. Book Studies	Research in the fields of book science and culture.	New knowledge and important academic skills in the field of book studies.	Faculty of Letters and Philosophy, University of Udine	Italy

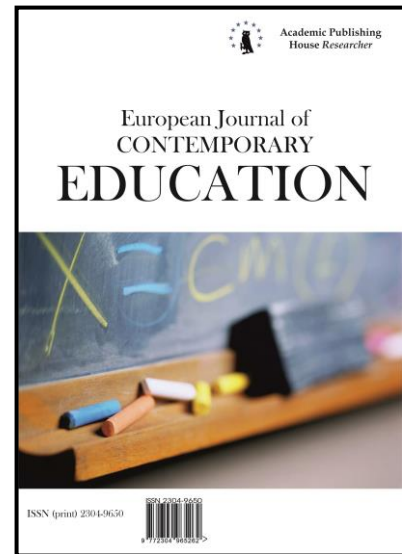
50. Book History and Print Culture	Prepares graduates for careers in teaching and research; Contributes to the development of theory in book and culture; Stimulates a scholarly interest in research.	Research project in the field of Library and Information Science; Research topics in Book and its Social Contexts; Archives and Records Management	Department of English, Faculty of Information Studies, Massey College, University of Toronto	Canada
51. Bibliology	Teaching researchers in the fields of book science, library and information science, contemporary book knowledge.	Research topics in Book Science, Library and Information Science	Institute of Library and Information Science, Jagiellonian University in Krakow	Poland
52. Bibliology, Librarianship and Bibliography	The programme's aim is to train researchers, teachers and top managers for libraries and information centres.	The main content comprises research methods, epistemology, preparation, and presentation of a dissertation. Individual study of the following courses: History and Methodology of Science; Foreign language; LIS and Informatics	Department of Library and Information Science, Faculty of Journalism and Communication Sciences, Moldova State University	Moldova

Sources: ARWU Shanghai Ranking, CWUR World University Rankings, THE World University Rankings, QS World University Rankings, RUR World University Rankings, DoctoralStudy.eu, Eduniversal Grou



Copyright © 2019 by Academic Publishing House Researcher s.r.o.  
All rights reserved.  
Published in the Slovak Republic  
European Journal of Contemporary Education  
E-ISSN 2305-6746  
2019, 8(4): 920-930  
DOI: 10.13187/ejced.2019.4.920  
[www.ejournal1.com](http://www.ejournal1.com)

**WARNING!** Article copyright. Copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of the violation of the author(s) rights will be pursued on the basis of international legislation. Using the hyperlinks to the article is not considered a violation of copyright.



## M-learning in Teaching ESP: Case Study of Ecology Students

Nailya G. Valeeva <sup>a</sup>, Elena B. Pavlova <sup>a,\*</sup>, Yulia L. Zakirova <sup>a</sup>

<sup>a</sup> Peoples' Friendship University of Russia (RUDN University), Russian Federation

### Abstract

The paper presents research results on mobile learning of English for specific purposes to ecology students with the help of the Quizlet learning platform.

The study was conducted in four stages: the students were surveyed about their mobile devices, and then they underwent an experimental mobile learning process during one term. The next stage was to work with authentic texts, during which the skills developed for reading comprehension of authentic specialized texts were assessed. In order to incorporate subject-specific vocabulary into professional discourse, in-class discussions were organized with students at the same stage of the study. The students were assigned to agree or disagree with the statements, prove their point, make arguments using familiar vocabulary on these topics. Such classroom discussions have shown that the subject-specific vocabulary the students mastered in the process of mobile learning is active. In our opinion, this is a very important result of mobile learning. The students also note that it is now easier for them to make up statements on professional topics and participate in conversations after mobile training. At the final stage, the students were surveyed once again in order to clarify their impressions of mobile learning.

The paper shows the students are sufficiently equipped with mobile technologies and highly motivated to m-learning. The objective test results and a high level of accuracy when doing follow-up activities and final tests indicate that mobile learning has increased the effectiveness of teaching ESP. Mobile devices and, above all, smartphones can form a personalized learning environment which is motivating and challenging at the same time. Employment of m-learning tools in ESP instruction, besides increasing foreign language proficiency, enhances the levels of students' satisfaction and motivation which are crucial for professional foreign language communication throughout life.

**Keywords:** m-learning, mobile application, ecological education, ESP, vocabulary learning, specialized texts.

---

\* Corresponding author

E-mail addresses: [valeeva-ng@rudn.ru](mailto:valeeva-ng@rudn.ru) (N.G. Valeeva), [pavlova-eb@rudn.ru](mailto:pavlova-eb@rudn.ru) (E.B. Pavlova), [nigmatzyanova-yul@rudn.ru](mailto:nigmatzyanova-yul@rudn.ru) (Yu.L. Zakirova)

## **1. Introduction**

It is impossible to imagine modern students without mobile phones and other digital devices. Obviously, teachers should pay attention to a number of advantages that these devices provide, as well as to the constant desire of students to browse contents of various mobile applications. Why not use students' technical skills to solve educational problems? According to experts, «in education, emerging technology- and mobile-based ways and tools for learning gain currency, focus being laid on differentiated instruction, cooperation and collaboration, but also autonomy and personalized learning. The general educational attributes of mobile devices, i.e. keeping students engaged, connected, as well as functioning as continuous data-collection tools make them ideal candidates for language learning» (Pop, 2014). We support the idea that mobile learning can be defined as the application of portable mobile computing devices, such as mobile phones, tablets, smartphones to access learning resources, collaborate, communicate, and share learning experiences. In addition, mobile learning involves all the activities that occur between teachers, learners, learning environments, learning theories, and support for anywhere, anyone, anytime learning (Sharples et al., 2007). According to fair experts, «the proliferation of mobile devices in our society has allowed mobile devices to be employed to deliver content and activities in which learning can be situated in a broader range of contexts than it has traditionally (e.g., in outdoor settings, in augmented reality, as well as 'just in time' or 'bite-sized' learning such as whilst travelling on public transport, etc.)» (Uther, 2019).

The use of mobile devices is of particular relevance when studying ESP (Douglas, 2000), (Hutchinson, Waters, 1982), (Šimonová, 2015). As known, a big problem in teaching ESP is mastering specialized vocabulary because «it is difficult to learn words especially ESP words because they are low-frequency words and are not encountered very often» (Xhaferi, 2010). However, there are some Web-based learning platforms for mobile devices which greatly facilitate the process of lexical units learning. One of these platforms is Quizlet (Quizlet), which has simple navigation: students sign up with Google, Facebook or email, and teachers create online classes where students are invited to join via a special link. The teacher creates a study set of terms on any topic. For example, for ecology students, the teacher offers such study sets as Deforestation, Climate Change, and Soil Pollution. Students, looking through these sets, can themselves choose study modes to work with vocabulary: Flashcards, Learn, Write, Spell, Test, and Play. The platform is personalized, non-judgmental, and is not designed to be an assessment tool, so students can practice as much as they would like without the fear of making mistakes or getting bad grades, which contributes to the most comfortable interaction between the student and the platform. Due to its versatility, Quizlet is perfect for ESP training because the material used in the platform is chosen by the teacher, so it can be professionally linked through integration with vocational subjects based on the use of specialized texts.

## **2. Research design**

This paper presents research results from the case study of ecology students (Nigmatzyanova et al., 2019). The study consisted of four stages.

The first stage (preparatory) was a simple monitoring of mobile devices which 2<sup>nd</sup> and 3<sup>rd</sup> year students of Ecology faculty had. During the survey, it was found out which mobile devices and for what purposes students used every day.

The second stage presented data based on experimentation with m-learning and direct observations gathered during class activities. The students were offered some study sets created using the Quizlet platform. The student's book of Career Paths series was taken as a basis. This student's book is an educational resource for environmental science professionals who want to improve their English communication in a work environment. Incorporating career-specific vocabulary and contexts, each unit offers step-by-step instruction that immerses students in the four key language components: reading, listening, speaking and writing. The resource addresses topics including the parts of the environment, natural resource management, biodiversity, pollution and climate change (Career Paths...).

The third stage consisted of working with authentic texts, including specialized vocabulary on such topics as Climate change, Ecosystems, Energy, Forests, Oceans and Seas, Resource efficiency, Technology, Chemicals and waste, Water.

Authentic texts were selected from the websites of international environmental organizations, as well as from scientific journals (Environmental Research Letters, Journal of Animal Ecology, Functional Ecology, Ecosphere, etc.).

The fourth stage consisted in questioning the students and evaluating their impressions after applying mobile learning.

At first, we planned to form an experimental group and a control group of 10-12 people for each study year to compare the results of mobile and traditional learning. We intended to form groups randomly without considering the students' level of language proficiency. The first (experimental) group was supposed to go through mobile training; the second (control) group was supposed to master subject-specific vocabulary as part of traditional classroom training. However, at the very beginning of the experiment, the 2<sup>nd</sup>- and 3<sup>rd</sup>-year students expressed a desire to leave the control groups and join the experiment. We appreciated students' enthusiasm, noting that mobile learning was of great interest to them. It is also a powerful motivating factor for studying ESP. In addition, we needed to maintain a democratic communication style with students (Ilyinova, Tsinkerman, 2019). After all the students had become participants in the experiment, we had to make adjustments to the original research plan. To assess the results of mobile learning in the 2018–2019 academic year, we decided to compare the results of mobile learning we obtained with the academic results of students who studied in the previous 2017–2018 academic year using the traditional methodology.

Thus, the control sample consisted of student test results for the 2017–2018 academic year, and the experimental sample consisted of test results of second- and third-year students of the 2018–2019 academic year. Since we had tests of 75 (second year) and 77 (third year) students studying in 2017–2018 according to the traditional methodology, to ensure comparability of results, the experimental group of the 2018–2019 academic year included 68 second-year students and 70 third-year students. In this study, the Fisher angular transformation method was employed to benefit from the opportunity to compare small samples with high accuracy of calculations. The calculation was carried out according to the formula:

$$\varphi^* = (\varphi_1 - \varphi_2) \cdot \sqrt{\frac{n_1 \cdot n_2}{n_1 + n_2}}$$

where:

- $\varphi_1$  is the angle corresponding to a larger percentage,
- $\varphi_2$  is the angle corresponding to a smaller percentage,
- $n_1$  is the number of observations in the first sample,
- $n_2$  is the number of observations in the second sample.

Mobile learning was organized according to the following cycle: learning of study sets - interactive work with lexical material in class – work with authentic specialized texts, feedback, and evaluation. As criteria by which it was possible to assess the effectiveness of mobile learning using the Quizlet platform, the following indicators were established: the time spent on learning the study set, the percentage of correct answers while learning the vocabulary, and the time spent on reading and understanding authentic specialized texts. In order to evaluate the results obtained, the students were asked to complete the questionnaire on their impressions about mobile learning at the end of the term.

### **3. Results**

#### **3.1. Monitoring of ecology students' mobile devices use**

At the first stage of the study, a survey of the 2<sup>nd</sup>- and 3<sup>rd</sup>-year ecology students was conducted within the first academic week of September 2018. During the survey, it was determined whether the students were sufficiently equipped with mobile devices, which mobile devices were at their disposal and for what purposes they used them. The survey was conducted in oral form. The results are shown in [Table 1](#).



**Table 1.** The results of ecology students' mobile devices use monitoring

Study year	smartphones	smartphones +tablets	smartphones + netbooks
2	100%	25%	10%
3	100%	27%	12%

The data show (Table 1) that smartphones are currently the most frequently owned mobile devices (100 % of respondents possess them). Moreover, the students have other mobile devices – tablets (from 25 % to 27 %) and netbooks (from 10 % to 12 %) As expected, students do not have one type of mobile devices only, but simultaneous possession of smartphones, tablets, netbooks was proved. The survey also shows that mobile devices such as iPods, MP3 players, e-book readers that were widely used several years ago are not popular among students anymore. In addition, as expected, none of the students mentioned learning as the purpose of using mobile devices. Among the main purposes of using mobile devices, the students mentioned communication and entertainment.

Thus, the monitoring showed more than enough supply of the students with mobile devices and their lack of mobile learning experience, which stimulated us to start implementing the idea of mobile learning as soon as possible.

3.2. Mobile learning experience and its results

At the second stage of the study, an experimental mobile learning process based on the Quizlet platform took place from September to December 2018. During the period of 17 weeks, classes on lexical topics were held for 30 minutes a week using Quizlet for organizing interactive studying. In addition, the students had the opportunity to learn subject-specific vocabulary through Quizlet mobile applications running on mobile devices (tablets and smartphones) all 17 weeks long.

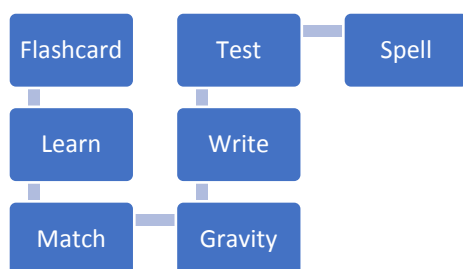
The following actions were performed in the process of mobile learning:

face-to-face instruction, in other words, the students attended lessons and the teacher tested their knowledge of lexical material through collaborative classroom game Quizlet Live thus reactivating new vocabulary;

after-lesson autonomous learning exploiting mobile applications. The students had access to new terminology and could choose different study modes to work with terms: Flashcards, Learn, Write, Spell, Test, and Play.

The process was evaluated by means of weekly follow-ups as well as monthly quizzes (Rudneva, Valeeva, 2017).

Students' activity monitoring shows most of them followed the m-learning trajectory presented in Figure 1.



**Fig. 1.** Students' Quizlet use trajectory

Figure 1 shows that the students, as a rule, begin their mobile learning from exploring new lexical material with the help of flashcards. Working with flashcards can be organized in various ways: new words are presented in L1 or L2 or simultaneously in L1 and L2. Then the students continue with the Learn mode, which involves several sets of terms. The first one offers multiple choice questions; in the second one, the students are supposed to type the correct answer. Lexical

units are also given in L1 and L2. If the students do not remember the word or have some doubts, they can click on Don't know to see prompts and then copy the correct answer. The students can easily control how words are distributed into groups of familiar and mastered words. Next, the students go to the Match game, during which you need to drag corresponding items (a word and an image) onto each other to make them disappear against the clock. The students are usually filled with enthusiasm if they can show excellent results, for example, complete the task for no more than 6 seconds and become Match champions. After that the students move on to the Write mode and then again to the game, in which they can also select the difficulty level. Thus, the students, at a comfortable pace, independently alternate more intense types of work with playful activities, use prompts if necessary, control their results with the help of tests and get good academic scores.

So, observations indicate that the students are most interested in working with flashcards, in learning vocabulary anytime and anywhere, and in testing their knowledge. The students are least interested in the Spell mode due to the lack of quality audio models.

In general, subject-specific vocabulary mobile learning has demonstrated the following advantages:

- firstly, it increased students' motivation to study specialized vocabulary, intensified interest in further independent learning of career-specific terms;
- secondly, it contributed to reducing the time spent on vocabulary learning;
- thirdly, it helped to improve reading skills of authentic specialized texts;
- fourthly, it allowed involving almost all students in active classroom work with lexical material;
- fifthly, it stimulated teamwork in class, promoted interpersonal skills improvement; added a competitive component to training;
- sixthly, it improved lexical test results in comparison with the traditional learning model group.

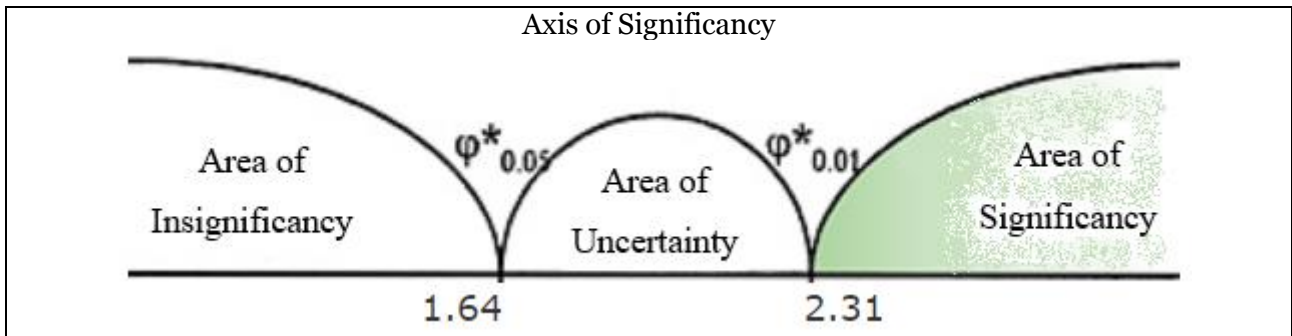
However, the widespread use of mobile learning has raised many questions among teachers: 'Why mobile?', 'Do mobile devices help or hinder learning?' and 'How can mobile learning be evaluated?' (Uther, 2019). Mobile learning has acquired supporters and opponents. Some experts believe that the use of mobile devices worsens the quality of the educational process due to the fact that students' concentration decreases; they are distracted by other applications and messengers that they have on their smartphones. Of course, such a situation cannot be completely ruled out, but our study does not confirm these fears. On the contrary, the results of mobile learning look very optimistic. It is also important to note that several reliable and detailed studies aimed to establish the net effect of using mobile language learning technologies prove the positive effect of mobile device usage on language acquisition and language-learning achievement (Cho et al., 2018; Uther, Ylinen, 2019).

Let us consider the mobile learning results obtained in teaching ESP to ecology students.

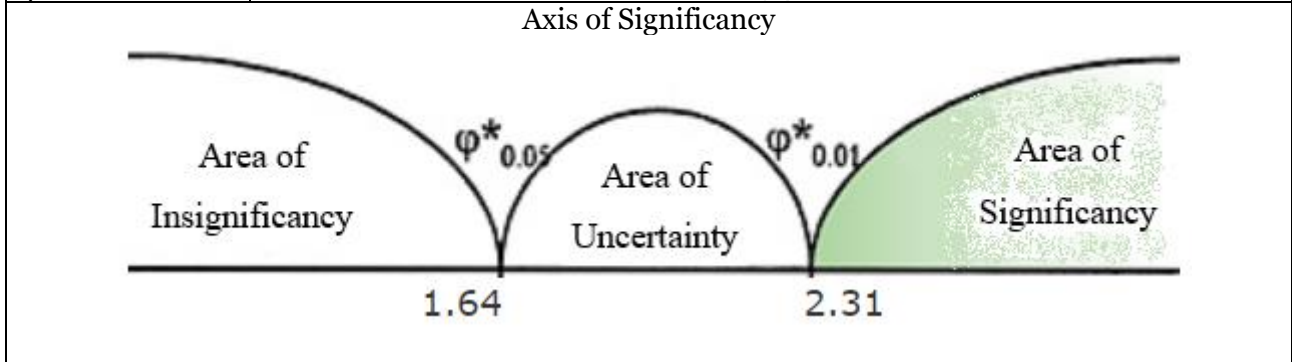
The statistical data obtained using the Fisher angular transformation method (Table 2 and Table 3 below) have proved the hypothesis on the effectiveness of mobile learning in studying subject-specific vocabulary since the empirical value of the Fisher criterion is consistently higher than the critical value when comparing samples of test results in the experimental and control groups. Table 2 also shows the results of the empirical value of the Fisher criterion when studying the Weather topic are in the so-called Area of insignificance, but as known, this fact is not the basis for rejecting the hypothesis on the effectiveness of mobile learning.

**Table 2.** Comparative results of 2nd year ecology students subject-specific vocabulary mastering: mobile and traditional learning

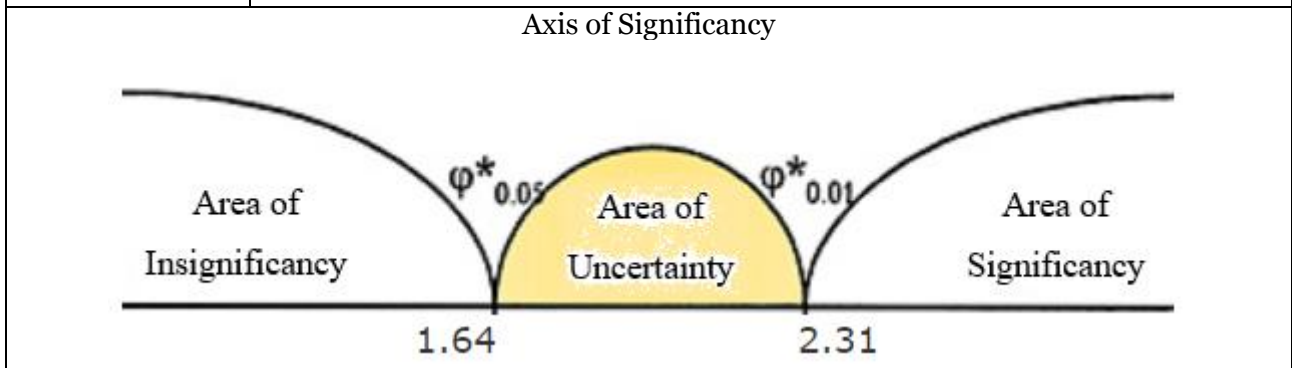
Ecosystems			
Group	"There is an effect": the problem is solved	"No effect": the problem is not solved	Total
	Number of test subjects	Number of test subjects	
Experimental	52 (76.5 %)	16 (23.5 %)	68 (100 %)
Control	42 (56 %)	33 (44 %)	75 (100 %)
$\phi^*EMP=$	2,616		



Climate			
Group	"There is an effect": the problem is solved	"No effect": the problem is not solved	Total
	Number of test subjects	Number of test subjects	
Experimental	59 (86.8 %)	9 (13.2 %)	68 (100 %)
Control	51 (68 %)	24 (32 %)	75 (100 %)
$\varphi^*EMP=$	2.741		

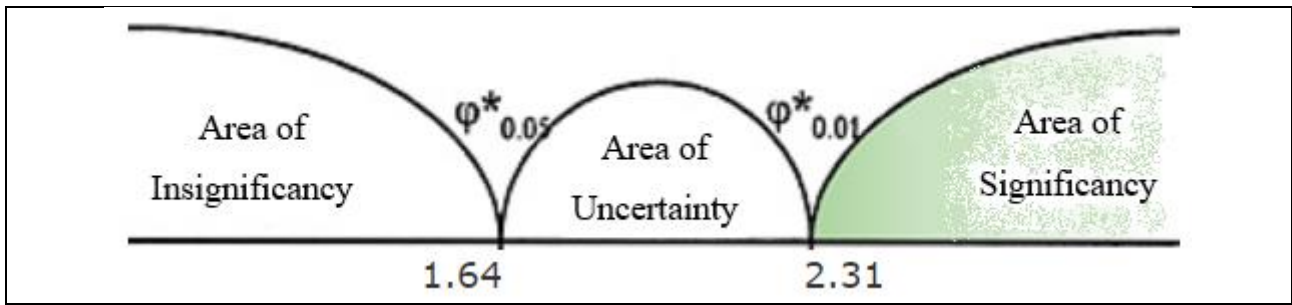


Weather			
Group	"There is an effect": the problem is solved	"No effect": the problem is not solved	Total
	Number of test subjects	Number of test subjects	
Experimental	62 (91.2 %)	6 (8.8 %)	68 (100 %)
Control	59 (78.7 %)	16 (21.3 %)	75 (100 %)
$\varphi^*EMP=$	2.132		



Energy			
Group	"There is an effect": the problem is solved	"No effect": the problem is not solved	Total
	Number of test subjects	Number of test subjects	
Experimental	55 (80.9 %)	13 (19.1 %)	68 (100 %)
Control	47 (62.7 %)	28 (37.3 %)	75 (100 %)
$\varphi^*EMP=$	2.443		

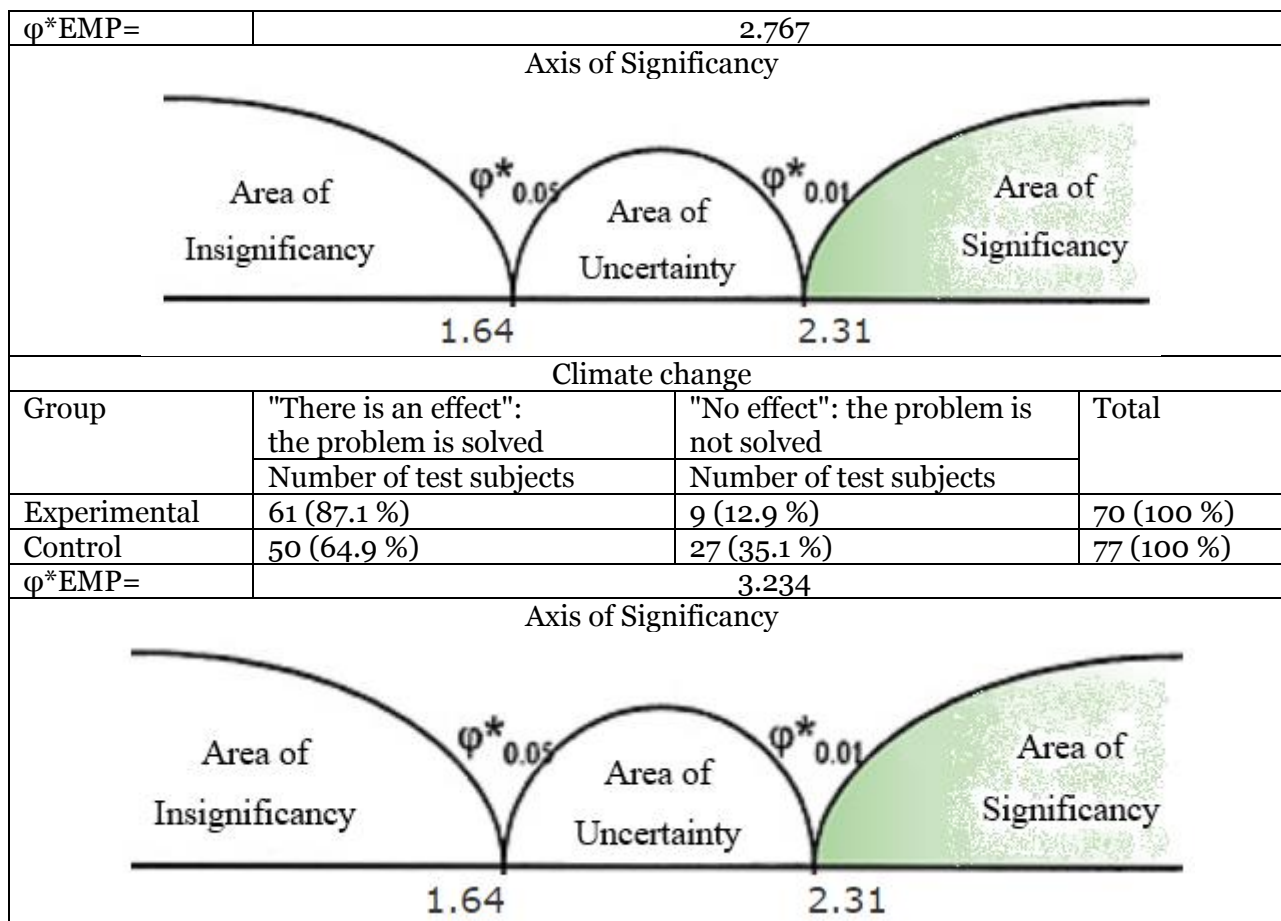




The academic results of the 3rd year students from the experimental group were more stable.

**Table 3.** Comparative results of 3rd year ecology students subject-specific vocabulary mastering: mobile and traditional learning

Deforestation			
Group	"There is an effect": the problem is solved	"No effect": the problem is not solved	Total
	Number of test subject	Number of test subject	
Experimental	57 (81.4 %)	13 (18.6 %)	70 (100 %)
Control	48 (62.3 %)	29 (37.7 %)	77 (100 %)
$\varphi^*_{EMP} =$	2.61		
Axis of Significance			
Soil pollution			
Group	"There is an effect": the problem is solved	"No effect": the problem is not solved	Total
	Number of test subject	Number of test subject	
Experimental	55 (78.6 %)	15 (21.4 %)	70 (100 %)
Control	47 (61 %)	30 (39 %)	77 (100 %)
$\varphi^*_{EMP} =$	2.343		
Axis of Significance			
Air pollution			
Group	"There is an effect": the problem is solved	"No effect": the problem is not solved	Total
	Number of test subjects	Number of test subjects	
Experimental	57 (81.4 %)	13 (18.6 %)	70 (100 %)
Control	47 (61 %)	30 (39 %)	77 (100 %)



These data demonstrate the educational effectiveness of mobile learning and confirm the existing data on the effects of integrating mobile devices with teaching and learning on students' learning performance (Sung et al., 2016).

### 3.3. The effectiveness of mobile learning to increase the motivation to learn ESP

We believe the development of students' reading skills of authentic specialized texts is one of the criteria for the effectiveness of mobile learning in ESP. We also agree with the statement that reading practices help learners enhance their vocabulary, and vocabulary knowledge, in turn, helps them promote reading comprehension (Chen, Hsu, 2008). For example, «the experimental results of the study indicated that English news reading learning along with unfamiliar vocabulary learning with self-assessing feedback response are very effective in prompting reading comprehension and reading abilities of the learners» (Mosavi Miangah, Nezarat, 2012).

We assumed that mobile learning of vocational vocabulary would improve students' skills for reading comprehension of authentic specialized texts. As known, there are discussions about the use of authentic texts in teaching a foreign language. Some experts believe that the great disadvantage of any authentic text is that the amount of information outweighs the amount of learnable language; in this sense, adapted texts help learners focus their attention on the main language features and use. Other experts emphasize the importance of using authentic texts. We join those who believe that such authentic materials «should be taken from the real world and not primarily created for pedagogical reasons. Such materials are particularly important for communicative purposes since they reproduce an immersion environment and provide a realistic context for tasks that relate to learner's needs» (Torregrosa Benavent, Sánchez-Peñararía, 2011). However, «some ESP areas are particularly sensitive to in-house materials due to the lack of published materials available. In any case, following Krzanowski, as far as possible good self-designed ESP materials should:

- balance informative, language and communicative content (i.e., “adequacy of content”);
- be based on topics of general academic and professional interest;
- be directly linked to related degree/course/curriculum;



- be recyclable and evergreen;
- be evaluated against length and time available;
- be set in a memorable context;
- meet the criterion of authenticity;
- ideally cover both language and skills;
- offer students the opportunity to gain transferable skills;
- not over-promote one discrete skill;
- lend themselves to being adapted and/or extended;
- stimulate student interaction;
- adapt preferences to learners' needs and knowledge;
- be professionally printed and edited;
- help practitioners develop their own teaching style (Bocanegra-Valle, 2010).

Of course, special requirements are imposed on authentic texts. According to M. Rudneva and N. Valeeva, they «should meet the following basic criteria:

- be focused on the future specialty of students, be informative and relevant;
- be polemic, stimulate debate and discussion;
- be authentic, unadapted, logically built, rich in scientific terminology, with complex grammatical structures» (Rudneva, Valeeva, 2017).

A detailed discussion on educational or adapted and authentic texts in this study is explained by the fact that mobile learning of specialized vocabulary, which gave good results, is not an end in itself. We dare say that the vocabulary without a specialized text is dead, as it is also dead without professional discourse. That is why one of the stages of the study was the work with authentic texts.

At the third stage of the study, the students who experienced mobile learning were offered authentic specialized texts from environmental journals and texts selected from the content of international environmental organizations websites.

Working with authentic specialized texts showed that the time of the pre-reading stage of text analysis, which prepares students for text perception, removes the barrier of language difficulties, activates previously learnt vocabulary, was reduced by 25 %. On average, reading time and adequate understanding of an authentic text was reduced by 10 %. Thus, the use of mobile vocabulary learning tools proves its educational effectiveness in developing reading skills of authentic specialized texts and motivates students to further ESP studying.

In order to incorporate subject-specific vocabulary into professional discourse, in-class discussions were initiated at the same stage of the study. The discussion was based on statements from authentic texts that address climate change and water scarcity, for example:

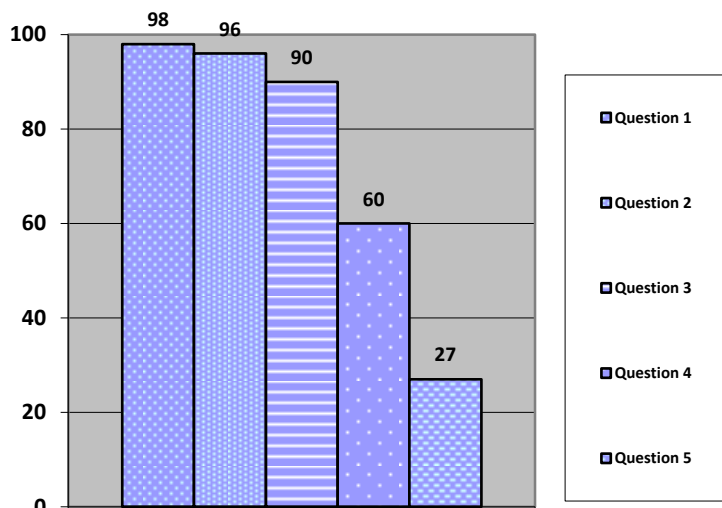
- On a medium- to long-term basis, we absolutely believe that climate change will cause increasing water stress across the globe.
- Climate volatility will continue to drive research into water-from-air technologies.
- With global demand for water expected to increase by nearly one third by 2050 (United Nations Environment Programme...).

The students were assigned to agree or disagree with the statements, prove their point, make arguments using familiar vocabulary on these topics. Such classroom discussions have shown that the subject-specific vocabulary the students mastered in the process of mobile learning is active. In our opinion, this is a very important result of mobile learning. Thus, the students have become more prepared to participate in professional discourse. The students also note that it is now easier for them to make up statements on professional topics and participate in conversations after mobile training. So, we can move on to analyzing students' feedback from mobile learning in ESP.

#### 3.4. Student survey results

At the fourth stage of the study, the students were asked to complete the following questionnaire to evaluate the results of mobile learning:

1. Have you become interested in mobile learning?
2. Have m-learning helped you in studying ESP?
3. Have you experienced any difficulties in m-learning? If yes, provide examples, please.
4. Would you like to continue using m-learning in studying ESP in the future?
5. Would you like to use mobile devices in learning other subjects in the future? If yes, provide examples, please.



**Fig. 2.** Student survey results

Our student survey shows that 98 % of the students are interested in mobile learning, 96 % of the students noted the usefulness of a mobile application when studying subject-specific vocabulary and expressed a desire to continue the experience of using mobile devices in ESP training.

When asked about the difficulties of mobile learning, 90 % of respondents indicated none of them; only 10 % of the students indicated the need to sign up, as well as the limited charge of a mobile device among the inconveniences of using a mobile application.

60 % of the students expressed their willingness to use mobile learning when studying ESP in the future and 27 % of the students expressed their readiness to experience mobile learning when studying other subjects, but none of them specified what kind of subjects it might be.

#### 4. Conclusion

The study shows that mobile learning increases the motivation of students to learn ESP. The objective test results and a high level of accuracy when doing follow-up activities and final tests indicate that mobile learning has increased the effectiveness of teaching ESP.

The students demonstrated improvements in reading comprehension of specialized text and active participation in discussions on professional topics thus indicating positive results of mobile learning.

The high assessment of the students also proves the effectiveness of mobile learning: over 90 % of the students positively evaluated the use of mobile devices for educational purposes.

Mobile devices and, above all, smartphones can form a personalized learning environment which is motivating and challenging at the same time.

Employment of m-learning tools in ESP instruction, besides increasing foreign language proficiency, enhances the levels of student satisfaction and motivation which are crucial for professional foreign language communication throughout life.

We believe that mobile learning in teaching ESP should develop. New practical studies are needed to confirm the results of mobile learning, as well as the analysis of these results by experts in the field of theoretical approaches to teaching ESP.

#### 5. Acknowledgments

The publication has been prepared with the support of the “RUDN University Program 5-100”.

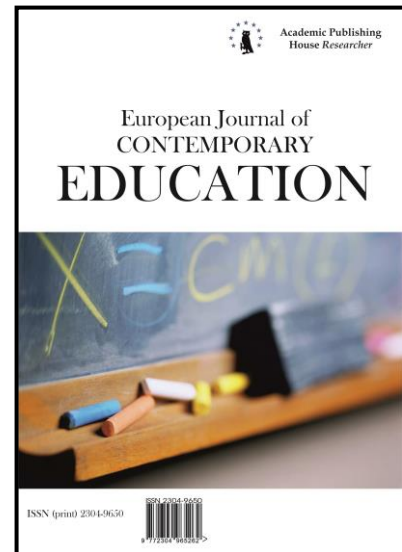
## References

- Bocanegra-Valle, 2010** – Bocanegra-Valle, A. (2010). Evaluating and designing materials for the ESP classroom. In *English for Professional and Academic Purposes*. Amsterdam – New York, NY: 142-165.
- Career Paths...** – Career Paths. Environmental Science. [Electronic resource]. URL: <https://www.careerpaths-esp.com/environmentalscience> (accessed: 15.08.18).
- Chen, Hsu, 2008** – Chen, C.-M., Hsu, S.-H. (2008). Personalized Intelligent Mobile Learning System for Supporting Effective English Learning. *Educational Technology & Society*, 11(3): 153-180.
- Cho et al., 2018** – Cho, K., Lee, S., Joo, M.-H., Becker, J. (2018). The effects of using mobile devices on student achievement in language learning: a meta-analysis. *Education Sciences*, 8(3): 105.
- Douglas, 2000** – Douglas, D. (2000). *Assessing Languages For Specific Purposes*. Cambridge: Cambridge University Press.
- Hutchinson, Waters, 1982** – Hutchinson, T., Waters, A. (1982). Performance and competence in English for Specific Purposes. *Applied Linguistics*, 2(1): 56-69.
- Ilyinova, Tsinkerman, 2019** – Ilyinova, E.Yu., Tsinkerman, T.N. (2019). Pragmatika kommunikativnoj tonal'nosti v stilistike angloyazychnogo vospityvayushchego dialoga [Pragmatics of Communicative Tonicity in the Stylistics of English Educative Converse]. *Vestnik Volgogradskogo gosudarstvennogo universiteta. Seriya 2, Yazykoznanie*, 20(1): 146-158. [in Russian]
- Mosavi Miangah, Nezarat, 2012** – Mosavi Miangah, T., Nezarat, A. (2012). Mobile-Assisted Language. *Learning International Journal of Distributed and Parallel Systems*, 3(1): 309-319.
- Nigmatzyanova et al., 2019** – Nigmatzyanova, Y., Valeeva, N., Rudneva, M., Guslyakova, A., Ulanova, K., Pavlova, E. (2019). Developing speaking skills through cartoons in English for Specific Purposes (ESP) classes. A case study of ecological faculty students. In *Proceedings of INTED*: 4091-4094.
- Pop, 2014** – Pop, A. (2014). Elements of mobile learning in English for specific purposes. In *Proceedings of LDMD*: 36-38.
- Quizlet** – Quizlet. [Electronic resource]. URL: <http://quizlet.com> (accessed: 23.08.18).
- Rudneva, Valeeva, 2017** – Rudneva, M.A., Valeeva, N.G. (2017). Implementation of LMS into teaching ESP to ecological faculty students. *Vestnik RUDN. Seriya: Ekologiya i bezopasnost' zhiznedeyatel'nosti*, 25(2): 317-324.
- Sharples et al., 2007** – Sharples, M., Taylor, J., Vavoula, G. (2007). A theory of learning for the mobile age. In R. Andrews & C. Haythornthwaite (Eds.), *The SAGE handbook of e-learning research*. London: Sage: 221-247.
- Šimonová, 2015** – Šimonová, I. (2015). Mobile-assisted ESP learning in technical education. *Journal of Language and Cultural Education*, 3(3): 1-15.
- Sung et al., 2016** – Sung, Y.-T., Chang, K.-E., Liu, T.-C. (2016). The effects of integrating mobile devices with teaching and learning on students' learning performance: A meta-analysis and research synthesis. *Computers & Education*, 94: 252-275.
- Torregrosa Benavent, Sánchez-Peñamaría, 2011** – Torregrosa Benavent, G., Sánchez-Reyes Peñamaría, S. (2011). Use of authentic materials in the ESP classroom. *Encuentro*, 20: 89-94.
- United Nations Environment Programme...** – United Nations Environment Programme. [Electronic resource]. URL: <https://www.unenvironment.org/news-and-stories/story/water-air> (accessed: 06.12.18).
- Uther, 2019** – Uther, M. (2019). Mobile Learning – Trends and Practices. *Education Sciences*, 9(1), 33: 1-3.
- Uther, Ylinen, 2019** – Uther, M., Ylinen, S. (2019). The role of subjective quality judgements in user preferences for mobile learning apps. *Education Sciences*, 9(1), 3: 1-7.
- Xhaferi, 2010** – Xhaferi, B. (2010). Teaching and learning ESP vocabulary. *Revista de Lengua para Fines Específicos*, 16: 229-255.



Copyright © 2019 by Academic Publishing House Researcher s.r.o.  
All rights reserved.  
Published in the Slovak Republic  
European Journal of Contemporary Education  
E-ISSN 2305-6746  
2019, 8(4): 931-942  
DOI: 10.13187/ejced.2019.4.931  
[www.ejournal1.com](http://www.ejournal1.com)

**WARNING!** Article copyright. Copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of the violation of the author(s) rights will be pursued on the basis of international legislation. Using the hyperlinks to the article is not considered a violation of copyright.



## The History of Education

### The Development of the Public Education System in Northeastern Ukraine in the Period Spanning the 18<sup>th</sup> and the first half of the 19<sup>th</sup> centuries

Sergey I. Degtyarev <sup>a, b, \*</sup>, Mariia V. Plotnikova <sup>a</sup>, Lyubov G. Polyakova <sup>b, c, d</sup>, Jasmin Gut <sup>e</sup>

<sup>a</sup> Sumy State University, Sumy, Ukraine

<sup>b</sup> International Network Center for Fundamental and Applied Research, Washington, USA

<sup>c</sup> Volgograd State University, Volgograd, Russian Federation

<sup>d</sup> East European History Society, Russian Federation

<sup>e</sup> University of Geneva, Geneva, Switzerland

#### Abstract

This paper represents a brief survey of the public education system in northeastern Ukraine in the period spanning the 18<sup>th</sup> and the first half of the 19<sup>th</sup> centuries. During that period, these lands were part of the Russian Empire. The authors explore some of the key national and regional characteristics of the development of the education system in the region. The paper identifies three major periods in the development of the public education system in northeastern Ukraine in said timeframe. The first period runs to the mid-18<sup>th</sup> century, when the Hetmanate and Sloboda Ukraine had partial autonomy within the Russian state. During that time, the area had in operation a network of primary, secondary, and higher educational institutions attended by members of all social categories. Their operation was regulated by the government, while the content of education they provided was based on the European pedagogical tradition. The second period is associated with a set of administrative transformations implemented in the Russian Empire in the second half of the 18<sup>th</sup> century. It is in the context of these transformations that the process of creating a new system of education, a common framework for the entire nation, was launched. That being said, the national characteristics of education in the lands of Leftbank Ukraine gradually faded away. The third period (the first half of the 19<sup>th</sup> century) is characterized by greater government regulation of the activity of educational institutions. The government would finally install an education system uniform for all regions within the Russian Empire. Educational institutions in northeastern

---

\* Corresponding author

E-mail addresses: [starsergo@bigmir.net](mailto:starsergo@bigmir.net) (S.I. Degtyarev)

Ukraine would be transformed in such a way as to become part of the imperial education system, while some would cease operation altogether.

**Keywords:** public education, northeastern Ukraine, Hetmanate, Sloboda Ukraine (Slobozhanshchyna), Russian Empire, brotherhood school, public school, boarding school, gymnasium, district school, university

### **1. Introduction**

The public education system in northeastern Ukraine had distinctive features of its own, which had to do with the way the region was developing. However, in describing the education system in Russia, modern and pre-revolutionary Russian historiography tends to include in those descriptions all areas that were part of the Russian Empire, regardless of the time they became its part or the areas' national and sociocultural characteristics, treating them as a part of a single cultural space. The research reported in this paper aims to explore the mechanics of the making and development of the public education system in northeastern Ukraine in the context of various political and social transformations. Chronologically, the study covers the period spanning from the 18<sup>th</sup> to the early first half of the 19<sup>th</sup> centuries. Geographically, the work is focused on northeastern Ukraine, more specifically the so-called Hetmanate and Sloboda Ukraine. During the period under examination, these areas had formed part of the Chernihiv, Novgorod-Seversky, Kharkov, and, partly, Kiev viceroyalties; Little Russia Governorate, Sloboda Ukraine Governorate, and, to a certain degree, Kiev Governorate; Kharkov, Chernihiv, and Poltava Governorates.

### **2. Materials and Methods**

The work's materials are grounded in input from scholars concerned with research on the history of education in the Russian Empire. The authors also drew upon a set of archived and published documentary sources, more specifically materials from the State Archive of Kharkov Oblast (Ukraine).

The paper's methodological basis is represented by the principles of historicism and objectivity, which implies viewing various events and happenings of the past in a non-biased manner in their development and dialectic interrelationship. In addition, the principle of historicism helped take account of the era's specific historical circumstances. More specifically, the authors took account of the historical and political realities in northeastern Ukraine in the period spanning the 18<sup>th</sup> and the first half of the 19<sup>th</sup> centuries. Another factor that was taken into consideration is the policy pursued by the Russian government in the region at the time, with some attention devoted to internal social processes that were taking place over there back then.

### **3. Discussion**

The various aspects of the historical development of education have long been a popular subject among many a researcher. For instance, there is a large array of scholarly works devoted to the history of particular types of educational institution (schools, specialized schools, gymnasias, academies, universities, etc.) and that of entire educational districts in the Russian Empire. Many of the research studies are focused on the methods of teaching at those institutions, the personal composition of the student body, that of the teaching staff, etc.

Viewed as a system or a process, public education has been explored in numerous works. Yet, very rarely does this research actually focus on the public education system in northeastern Ukraine during its being part of the Russian Empire. Insufficient attention has been devoted to the national and regional characteristics of the development of education in those areas.

A decent portion of the research on the history of the everyday in, the social history of, and socio-political life in northeastern Ukraine in the period spanning the 18<sup>th</sup> and 19<sup>th</sup> centuries explores issues of education in the region as well. There is a focus on the various quantitative characteristics of educational institutions, the impact of education on the period's socio-political and economic processes, and some other issues (Degtyarev, 2014: 102-143; Maksimovich, 1913; Tairova-Yakovleva, 2017: 111-146).

The history of the operation of particular components of the Russian Empire's education system in Ukrainian areas in the period spanning the 18<sup>th</sup> and the first half of the 19<sup>th</sup> centuries has been explored by a number of pre-Soviet scholars, including D.I. Bahalii (Bahalii, 1993; Bagaley et al., 1906), V.N. Domanitskiy (Domanitskiy, 1901), M.F. Vladimirskiy-Budanov (Vladimirskiy-



Budanov, 1873), and others. Most of this research is focused on 18<sup>th</sup>-century brotherhood, rural, and Cossack schools, 19<sup>th</sup>-century boarding schools, specialized schools, gymnasia, Kharkov University, Kiev University, etc.

A number of works on the history of Ukraine written by emigrants are focused on characterizing the various types of educational institutions in operation in Sloboda Ukraine and the Hetmanate in the 18<sup>th</sup> century (Doroshenko, 1992; Polonska-Vasylenko, 1995). Certain emigrant scholars have investigated the historical development of the region's public education system of the period spanning the 18<sup>th</sup> and the first half of the 19<sup>th</sup> centuries in the context of exploring the history of education in Ukraine as a whole (Siropolko, 2001).

Soviet-period historians are known to have devoted to the issue of organization of the education system in particular Ukrainian areas an insignificant amount of attention. That being said, in modern-day Ukrainian historiography, issues related to the organization of education in Ukrainian areas have been explored by a number of researchers, including T.D. Kochubei (Kochubei, 2007) and O.V. Pivovarov (Pivovarov, 2002). Scholar V.L. Masliichuk has conducted a research study on education levels among residents of Leftbank Ukraine (Masliichuk, 2009). The activity of Orthodox collegiums has been explored by L.Yu. Posokhova (Posokhova, 2011), and issues of female education in the period have been investigated by T.V. Sukhenko (Sukhenko, 1998).

In Russian historiography, much attention has been devoted to both general and particular issues related to the history of education in Russia (Gurkina, 2001; Getmanskaya, 2012; Dneprov, Usacheva, 2009; Ershov, 2003; Korilova, Magsumov, 2017; Oleynik, Oleynik, 2013; Starodubtsev, 2012; Magsumov et al., 2018). However, the majority of Russian researchers have focused mainly on the system of public education in the Russian Empire as a whole, with rare consideration given to its regional characteristics. Nevertheless, this body of research has helped sort out which methodological approaches to use in this paper.

#### **4. Results**

The development of each of the ethnocultural regions in Ukraine has had distinctive characteristics of its own, including based on their being part of different states. Northeastern Ukraine, which at different times was part of Rzeczpospolita, the Muscovite state, and later the Russian Empire, is no exception.

Subsequent to the signing of the Truce of Andrusovo between the Tsardom of Russia and the Polish-Lithuanian Commonwealth (1667) and the Treaty of Perpetual Peace between the Russian state and Rzeczpospolita (1686), all of Leftbank Ukraine came under the rule of the Muscovite Tsar. Consequently, by the start of the 18<sup>th</sup> century, the Hetmanate, which comprised 10 regiments, was an autonomous part of the Russian state.

Slobozhanshchyna (Sloboda Ukraine) emerged on the border between three different states: the Muscovite state, Rzeczpospolita, and the Crimean Khanate. The region was recolonized by Ukrainian peasants and Cossacks from the lands of Rightbank Ukraine, which were virtually depopulated as a consequence of the Mongol-Tatar invasion, as well as continual incursions by the Crimean Tatars. The settlers remained true to the military organization typical for the Hetmanate. They created five regiments, but here, unlike in the Hetmanate, they did not appoint a hetman, as the regiments were answerable to the authority of the Military Governor of Belgorod. The Cossacks were guaranteed immunities and privileges in exchange for the service of guarding the southern borders of the Muscovite Tsardom against possible incursions by the Tatars (Polonska-Vasylenko, 1995: 106–108). With Tsar Peter's accession to the throne, Sloboda Ukraine began to gradually lose its autonomy (Bahalii, 1993: 84–85). Afterwards, after having lost their autonomous status, the areas became part of Sloboda Ukraine Governorate, and later on part of Kharkov Governorate. That said, some of their traditional ways of organizing social life would persist for a long time afterwards.

One of the key preconditions for the development of the public education system in the region was the long-time interaction of Ukrainian, Polish, and Russian cultures and that of Catholicism and Orthodox Christianity. Changes in the organization of the system of public administration and government would have a natural effect on all spheres of life in the region, including the development of its education system, providing the basis for a series of wavelike transformations therein.

Based on input from various historical sources, there are three major periods in the development of the public education system in the lands of northeastern Ukraine of the period under review.

**Period 1 (up until the mid-18<sup>th</sup> century).** This period is characterized by a gradual decline in Cossack autonomy. In Leftbank Ukraine, they would appoint a hetman whose candidacy had to be first approved by the Tsar authorities, with the latter guiding and controlling the entire activity of the hetman administration. That being said, the Cossacks retained their own tax system. In Slobozhanshchyna, the process of discontinuation of the Cossack regiment-based paradigm had begun earlier. To be specific, in 1700 Peter I issued an edict on lifetime appointment of colonels, while in 1718 the lands of Sloboda Ukraine were incorporated into Azov Governorate, and Kharkov was made part of Kiev Governorate, which would pave the way for the creation of gubernia institutions.

The public education sector developed in the Hetmanate in pretty much the same fashion as in Sloboda Ukraine.

During the period 1740–1748, the seven regiments in Leftbank Ukraine (Nizhyn, Lubny, Chernihiv, Pereyaslav, Poltava, Pryluky, and Myrhorod) had a combined 866 schools across 1,099 settlements. Thus, approximately, there was one school per every 1,000 residents. These schools were established at the desire of the locals, who wished their children to be educated. The rural community, at its own initiative, would hire a teacher and designate a building to serve as a school. Where there was no permanent school in operation, instruction would be provided by so-called “wandering dyaks” (Vladimirskiy-Budanov, 1873: 206–209; Polonska-Vasylenko, 1995: 212).

A type of institution of secondary learning in use at the time was the collegium. These were created after the fashion of Jesuit educational institutions, based on the principle of merging Humanities-Philological education and religious-moral upbringing. That being said, the collegiums operated within the framework of the Orthodox cultural tradition (Posokhova, 2011: 6; Degtyarev, 2013: 20). In 1700, they opened up a collegium in Chernihiv, and another one was set up in Pereyaslav in 1730. These facilities had a large number of students enrolled in them: 257 at the Chernihiv Collegium (as at year-end 1728) and 130 at the Pereyaslav Collegium (1744). The teaching workforce was chiefly made up of graduates from the Kiev Ecclesiastical Academy (Doroshenko, 1992: 208; Degtyarev, 2012: 14). Both collegiums were maintained with the revenue of the monasteries (Posokhova, 2011: 47).

The Kiev Brotherhood School was transformed into the Kiev Ecclesiastical Academy after the fashion of Jesuit collegiums, becoming, in essence, an institution of higher learning (albeit it failed to obtain permission to teach the theological sciences) (Polonska-Vasylenko, 1995: 212). The Kiev Academy was open to all social categories – it was equally open to the children of members of the prosperous class of Cossacks and regular Cossacks, petty bourgeois, and peasants. This would make it popular among all strata of the population. At year-end 1727, the academy numbered 642 students (Maksimovich, 1913: 122).

As regards Sloboda Ukraine, research indicates that the settlers almost immediately set to establishing brotherhoods and schools after the fashion of those in operation in Rightbank Ukraine (Bahalii, 1993: 188–189). The permanently settled population of Slobozhanshchyna was made up of Ukrainians. The influence of Russian culture was being advanced via servicemen sent to the region by the Muscovite government to perform security- and bureaucracy-related work (Tytar, 2006: 88). As a result, the education system in Slobozhanshchyna resembled the one in Leftbank Ukraine. Based on the results of the 1732 Census, Sloboda’s four regiments had in operation a combined 125 schools (Kharkov Regiment – 20, Akhtyrka Regiment – 25, Izyum Regiment – 33, and Sumy Regiment – 47). In the regiment cities, there were even several of them (Kharkov – 4, Akhtyrka – 4, and Izyum – 5) (Oleynik, Oleynik, 2013: 114). Apart from slobodas and regiment cities, there were schools at the monasteries and in squire’s villages. There was one school per every 2,525 residents. Essentially, most of the region’s primary schools were parochial, as they were set up at the churches, with instruction provided by a bachelor’s-degreed dyak. At the same time, these schools were public, as they were established and maintained by the community. The curriculum incorporated instruction in grammar, writing, reading the Psalter and the Horologion, and singing. The language of instruction was Ukrainian, spoken by both the teachers and students. Students who desired a broader education would relocate from sloboda to sloboda in order to be

taught by better educated teachers, and some would reside at the school throughout their course of study (Bahalii, 1993: 190–191, 193). Researcher O.V. Tytar, who has investigated the development of Slobozhan culture and mentality, notes that back then education in the region was both of a sacral nature and of the nature of a successful social practice (Tytar, 2006: 209).

The settlers' intentions to create in Sloboda Ukraine a public education system that was a duplicate of the one in the Hetmanate implied creating a secondary educational institution of their own as well, so a collegium would be set up in the area in the early 18<sup>th</sup> century (the facility was founded in Belgorod, but was later moved to Kharkov). The Kharkov Collegium was maintained with monastery revenue and voluntary contributions. Instruction was provided in poetics, rhetoric, philosophy, theology, Latin, Slavic, and Greek. The language of instruction was Russian (Bahalii, 1993: 193). Despite the availability of the 1721 Ecclesiastical Regulation, which set out the rules for the establishment of episcopal schools, the Bishop of Belgorod, in establishing the Kharkov Collegium, was guided by the experience of the Kiev Ecclesiastical Academy, with relevant privileges awarded to him by Empress Anna Ioannovna (Posokhova, 2011: 43–45).

During this period, the bulk of instructors at the Kharkov Collegium were graduates of the Kiev Ecclesiastical Academy. Those born into families of the prosperous class of Cossacks and regular Cossacks of Slobozhanshchyna often went to institutions of higher learning in the Hetmanate. Certain students of the Kharkov Collegium went on to finish their education in Moscow or Petersburg, or relocated overseas to get a higher education in a different country altogether (Doroshenko, 1992: 227; Bahalii, 1993: 195).

The majority of researchers have noted the originality of the system of school education in northeastern Ukraine, stressing the popularity of the way public schools were organized in the region at the time – they were closely associated with the Orthodox Church, as an element of counteracting the advancement of Catholicism. However, as noted by V.L. Masliichuk, the collegiums combined in their activity the ecclesiastical Orthodox substance and a plethora of adoptions from Catholicism. Incidentally, the phenomenon of “wandering dyaks” had Latin origins, too (Masliichuk, 2009: 81).

Overall, during this period the public education system in northeastern Ukraine was characterized by the following: (1) there being in place a network of primary schools (which combined the features of public and parochial schools, which provided instruction in the fundamentals of reading and writing by way of religious books for a period of three years); (2) institutions of secondary learning such as collegiums emerging (collegiums did not exist in the rest of the Russian state at the time); (3) there being in operation an institution of higher learning – the Kiev Ecclesiastical Academy, which, among other things, educated future teachers; (4) education at all institutions of learning being open to members of all social categories and all levels of education being accessible to just about any resident; (5) close ties in education between Leftbank Ukraine and Slobozhanshchyna; the development of ties with Russia, which was manifested in collegium and academy graduates getting employed in imperial institutions; (6) the tradition of determining the substance of curricula and educational programs based on the commonality of the region's cultural space; the government not regulating this type of issues in any way.

**Period 2 (second half of the 18<sup>th</sup> century).** The second period in the development of the public education system in the region is associated with the reforms of Catherine II, which cut across all spheres of life and were to ensure the centralization of power and unify the administrative apparatus across the entire empire. With Catherine II's accession to the throne, within a space of two decades virtually the entire area and population of northeastern Ukraine were incorporated into the empire. Almost all of the administrative-territorial and social set-up in both Slobozhanshchyna and the Hetmanate was transformed after the imperial fashion (Administrativno-terytorialnyi ustrii, 1990: 6-7; Bahalii, 1993: 85-86, 110; Degtyarev, 2016: 181-182; Degtyarev, Kryvosheia, 2016: 1120-1123).

During this period, despite the fact that public schools continued to operate within the region's education sector, their significance in terms of receiving a primary education was gradually declining. Researcher G.A. Maksimovich notes quite a large number of public schools (referring to them as rural or dyak schools) in operation in the Hetmanate's regiments in the mid-18<sup>th</sup> century. To be specific, the Nizhyn Regiment had in operation a total of 217 public schools, the Lubny

Regiment – 172, the Chernihiv Regiment – 154, the Pereyaslav Regiment – 119, the Poltava Regiment – 98, the Pryluky Regiment – 69, and the Myrhorod Regiment – 37. At year-end 1768, the area which going forward would house the Chernihiv, Horodenka, and Sosnytsia districts had a total of 134 schools in operation (Polonska-Vasylenko, 1995: 211). Little is known about the number of students at those institutions. Based on official records for 1760 and 1762, the two schools in the Lubny Regiment alone numbered 1,624 and 1,781 boys, respectively (Maksimovich, 1913: 139, 142-143).

Many of the villages also had parish schools. By the year 1770, the Chernihiv Regiment alone had over 89 parish schools in operation. Instruction in them was provided by dyaks exclusively. These facilities provided instruction in writing and reading (Maksimovich, 1913: 162-163).

The above type of school was highly popular back in the 1760s, and was supported by top officials in the Hetmanate, and later on even by members of the imperial administration. Yet, over time their number did, however, decline. For instance, in the Chernihiv Regiment alone out of 118 schools in operation between 1740 and 1748 only 89 continued to operate by 1770. Gradually, by the late 18<sup>th</sup> century, the region lost all its schools that existed at the churches (Maksimovich, 1913: 162-163). Based on the ratio of primary schools to the population in Slobozhanshchyna at year-end 1804, there was a gradual decrease in their number compared with the mid-18<sup>th</sup> century – one school per every 2,135 residents (Bahalii, 1993: 193).

Overall, the period is characterized by the national system of school education being gradually replaced by a system featuring new types of educational institutions, which were being established throughout the empire (Martynenko, 2012: 6-7). Many researchers ascribe the gradual decline in public schools to the effects of imperial policy. Yet, V.L. Masliichuk sees the reason behind the extinction of schools where instruction was provided by dyaks in a change in the religious and secular spheres of influence. Similar processes took place in the education sector in Germany and Poland (Masliichuk, 2009: 86). The cancelling out of Ukrainian originality, including in education, may also have had to do with the spread of the ideas of Enlightenment in the Russian Empire (Tytar, 2006: 88).

The changes in the public education system had to do with the objective need to alter the content of education as a whole. As regards education in schools operating as part of a church, it mainly was about teaching a student to read and having them study the Psalter. The state, however, needed now more than just inculcating Christian values into the children of its citizens.

As a result of a series of administrative reforms undertaken in the second half of the 18<sup>th</sup> century, the public administration system in the Russian Empire became a lot more complex, with the bureaucratic apparatus growing dozens of times larger. The government now needed a large number of educated functionaries, who were to ensure the proper operation of new government institutions at all levels. This was one of the key reasons behind the intention to create an education system capable of satisfying such a need. Besides, given that it was a multinational empire, it is a centralized education system that was to take on the function of nurturing a citizen who would not only be well-educated but loyal to the Russian state as well.

Consequently, the new education system was being unified – it would make no allowance for the regions' national characteristics, with the secondary education sector administered by a civil entity (governors and welfare boards) (Pivovarov, 2002: 11). In 1786, the government issued the Charter for Public Schools in the Russian Empire, which promulgated the creation of the following type of institutions of general learning – public schools with no particular focus in terms of social category or professional field. Concurrently, the nobility organized educational institutions of its own, where superior conditions were created for the student, with instruction provided by top teachers (Starodubtsev, 2012: 38–39). In northeastern Ukraine, the authorities established public schools in Kharkov, Chernihiv, and Novgorod-Seversky, as well as a few private male and female boarding schools (Pivovarov, 2002: 11). The only way for women to get access to education at the time was via private female boarding schools. These institutions were mainly set up and maintained by foreigners, who organized the educational process as they saw it fit. A key focus in these was on teaching French and cultivating refined manners (Sukhenko, 1998: 63). At year-end 1781, there were several foreign boarding schools in operation in Leftbank Ukraine (specifically, in Romny and Hlukhiv) (Domanitskiy, 1901: 450).

The Charter for Public Schools in the Russian Empire was the first document that clearly set out the requirements to teachers. It made it mandatory to use uniform textbooks and programs



(Getmanskaya, 2012: 32). The educational process was now regulated down to the smallest detail. The objective was to cultivate in elementary graders the ideals of patriotism and serving the monarchy. This was expected to nurture a citizen who would be useful to the state (Starodubtsev, 2012: 39).

During this period, there continued to operate collegiums. However, amid various interactions with European universities, including under the influence of the ideas of Enlightenment, the government gradually realized that the existing model of collegium failed to meet the needs of the era (Posokhova, 2011: 309). Essentially, between the 1760s and 1780s collegiums turned from institutions of general learning into purely ecclesiastical educational institutions. And that was despite attempts to change this. For instance, starting in 1766 the curriculum of the Kharkov Collegium became more diverse – it now included French and German, mathematics, geometry, drawing, engineering, artillery, and geodesy (Bahalii, 1993: 195). However, the further unification of ecclesiastical educational institutions would transform the principles of operation of collegiums, which over time would eventually be equated in status with ecclesiastical seminaries of the Russian Empire (Posokhova, 2011: 314–315).

By the end of the 18<sup>th</sup> century, the Kiev Ecclesiastical Academy was no longer at the forefront of education in the region. The content of education at the academy had started to fall out of sync with the needs of the time due to its theological-scholastic nature. Despite the fact that the institution was open to all social categories, government policy at the time led to an exodus of the laity, who tended now to pursue a higher education at Moscow University or Western European universities (Degtyarev, 2014: 117; Doroshenko, 1992: 208). At year-end 1779, the academy numbered just 243 students (Maksimovich, 1913: 123).

Many researchers have noted the special significance of the Kiev Ecclesiastical Academy for the history of Ukraine and the development of pedagogical thought. Over the period it was in operation, it had provided education to many Ukrainians who later joined the ranks of educated clergy and intellectuals, holding public offices in the 18<sup>th</sup> century (Kochubei, 2007: 42).

An important event in the making of the public education system in the Russian Empire was the creation, in 1755, of Moscow University and the establishment at it of two gymnasia (one for nobles and one for *raznochintsy*, both using a similar program) (Gurkina, 2001: 13). Moscow University was regarded by public opinion as a major science, education, and culture hub. It would go on to have a significant effect on the future development of the education system in the Russian Empire, as it was a large educational, instructional, and cultural center that turned out qualified manpower for scientific work and government service, developed teaching aids for instructors at public and private schools, and helped build a professorial corporation (Ershov, 2003: 18–19).

There also were plans to organize university-based education in the lands of the once-existing Hetmanate and Sloboda Ukraine. Note that plans like these were mainly nourished by the more progressive members of the local elite. The government's attitude toward these ideas was positive, but it provided no real support for this. For instance, there were active attempts by Count K.G. Razumovsky, the last Ukrainian hetman, to establish a university in the town of Baturyn. A draft statute for this was even designed. There were plans to set up universities in Chernihiv, Sumy, and other cities (Degtyarev, 2014: 110–111). In the end, the Tsar government would drop the idea of creating institutions of higher learning in northeastern Ukraine – and that was despite the readiness of the local nobility to take on the expenses associated with maintaining those (Posokhova, 2011: 308).

Consequently, the major changes in the public education system in northeastern Ukraine were associated with the administrative reforms of Catherine II. During that period, the government launched the process of creating a new education system capable of meeting the need of the state for a large number of educated public officers and citizens loyal to the monarchy. That being said, there occurred a gradual effacement of national elements in the education sector in the left-bank Ukrainian areas incorporated into the empire. The period witnessed a unification of this area of social life based on a single imperial template. The locals were no longer in a position to make decisions as to the content of education or ways of receiving it.

**Period 3 (first half of the 19<sup>th</sup> century).** By the start of the 19<sup>th</sup> century, the education system in northeastern Ukraine was transformed in such a way that educational institutions within it either became part of the education system of the Russian Empire or ceased operation altogether.



The government placed the universities in charge of administering secondary education, undertook reform of public schools, and formally declared the accessibility of secondary education to all social categories (Pivovarov, 2002: 11–13). The Ministry of Public Education, created in 1802, developed and in 1803 instituted a single education system, which comprised four major levels: 1) highest – universities; 2) medium – gymnasia (which were to be set up in each gubernia town); 3) intermediate – district schools with a two-year study program (which were to be set up in each gubernia and district town); 4) lowest – parish schools (which could be set up at a parish in towns and villages) (Gurkina, 2001: 16-17). Despite the creation of new educational institutions, education did not become more accessible, however. Literacy levels among wide sections of the population were very low, as these new educational institutions were mainly accessible to members of privileged social categories, although there were some exceptions too.

Gymnasia were set up in all gubernia and certain district towns. In 1805, the so-called main schools in Kharkov and Chernihiv were reorganized into gymnasia, the same happening in 1808 in Novgorod-Seversky and Poltava. In 1825, the numbers of students across these gymnasia were as follows: Novgorod-Seversky – 148, Poltava – 104, Kharkov – 273, and Chernihiv – 102 (Siropolko, 2001: 294, 297). Normally, these institutions were open to the children of nobles and wealthy merchants, petty bourgeois, and clergy. That said, there were some exceptions too. In 1827, Emperor Nicholas I issued an edict that enjoined educational institutions of secondary and higher learning to admit only the children of members of free social categories, whereas the children of serfs were allowed to attend parish and district schools only (Gurkina, 2001: 18; Siropolko, 2001: 296-297).

Another type of educational institutions that continued to operate in northeastern Ukraine is ecclesiastical schools. As a result of reform of the public education system, the empire witnessed a change in their status and their role in the educational process. A reform of ecclesiastical schools implemented by Alexander I in 1808 helped transform the structure of the sector for this type of educational institutions. The Kharkov, Nizhyn, Pereyaslav, and Novgorod-Seversky collegiums were granted the status of seminaries answerable to the Kiev Ecclesiastical Academy. In form of organization and content and focus of activity, these facilities differed substantially from 18<sup>th</sup>-century Orthodox collegiums (Posokhova, 2011: 316-319).

The period is characterized by a start to the development of female secondary education. There was a rise in female educational institutions, with there emerging social initiative in the cause of female education. One of the first initiatives of this kind is the creation in 1812 of the Kharkov Institute for Noble Maidens (Dneprov, Usacheva, 2009: 50). In 1820, they launched a private female school for girls from noble and merchant families. A little later, they set up several female boarding schools (Oleynik, Oleynik, 2013: 117-118). Institutes for noble maidens were also established in Poltava (1818) and Kiev (1833). Except for the one in Kiev, these institutes opened up thanks to local initiative and with no support from the state. Setting up an educational institution of this kind required permission from the government, and they had to be organized in line with the requirements set by the Imperial Educational Society for Noble Maidens (Petersburg). Later on, the institutes in Kharkov and Poltava would be funded out of the state budget (Sukhenko, 1998: 64-65). A key objective for female institutions of learning in the Russian Empire was to nurture prim and proper wives and mothers, without encumbering the girls with excessive scientific knowledge. For instance, the rationale for having to study arithmetic was the need for women to perform calculations, while in the case of history it was about the ability to explain what was behind the existing state of affairs in domestic society (Dneprov, Usacheva, 2009: 47-50).

Apart from public schools, another type of educational institutions that entered rather wide use during the first quarter of the 19<sup>th</sup> century is private boarding schools. In Kiev alone between 1801 and 1803 permits were granted for the establishment of three private boarding schools, with one opening up in Nizhyn as well. The rise in educational institutions of this type drew the attention of the Ministry of Public Education, which would result in 1811 in an edict enjoining that the language of instruction in them be Russian and that they teach the Law of the Lord. They also were enjoined to pay a tax, proceeds from which would go toward special schools for the children of impoverished nobles (Domanitskiy, 1901: 451-455).

Essentially, private boarding schools became an alternative to boarding schools for nobles that operated as part of gymnasia in the region. Quite often institutions of this kind were maintained by foreigners, although there are sufficient examples of boarding schools set up by

members of the local nobility as well. There is some information on five boarding schools of this kind in operation in 1828 in Sloboda Ukraine (Kharkov) Governorate alone. These were run by E. von Bierich, E. Prelat, A. de Roberti, court counselor A. Nageleva, and court counselor M. Robush. Two of these individuals were foreigners. Just two of the boarding schools were for males ([GAKhO, F.266. Op. 1. D. 9. L. 18](#)). Note also that, normally, this type of institutions did not number many students.

The first half of the 19<sup>th</sup> century was characterized by boosts in the development of higher education in the region. The leftbank Ukrainian governorates (i.e., the Chernihiv, Kharkov, Poltava, and, partly, Kiev governorates) established the region's first institutions of higher learning.

Members of an active portion of the Kharkov nobility headed by V.N. Karazin managed to obtain from the Tsar government permission to set up a university in Kharkov, the funding for which was going to be provided by local nobles and merchants ([Bagaley et al., 1906: 4-9](#)). The university opened up between 1804 and 1805. Based on its constitution, the university was comprised of four departments (Philology, Moral and Political Sciences, Physics and Mathematics, Therapeutics and Medicine) and 25 sub-departments. It was answerable to the Ministry of Public Education and the Supervisor for the educational district directly ([Tytar, 2015: 181](#)). The activity of Kharkov University, as the educational district's central institution, had a significant effect on the development of secondary education in the region (the district incorporated areas that extended way beyond Leftbank Ukraine). It is based on this university that the authorities would conduct the instructional management of all lower-level educational institutions, optimize the educational process, and resolve issues related to funding and staffing ([Bagaley et al., 1906: 105-106](#)).

Nearly three decades later, in 1833, the authorities set up the Kiev University of St. Vladimir. An institution with less autonomy compared with its counterparts, this university was viewed as an educational and administrative facility set up for the purposes of managing the newly-established Kiev educational district. Some researchers see the key reason behind the establishment of Kiev University in the need to Russify the region subsequent to the Polish uprising of 1830-1831 ([Narys istorii universytetu, 2009: 4, 46](#)). Yet, from the very start of its operation the influence of Kiev University on the development of public education in the Russian Empire as a whole and across northeastern Ukraine in particular would prove to be quite immense.

In 1835, the authorities ended the autonomy of the universities and discontinued their function of managing other educational institutions. Institutions of secondary learning were now made answerable to the Supervisors for the educational districts ([Pivovarov, 2002: 13](#)). Although this would shrink the educational activity of Kharkov University, the facility would, nevertheless, continue to be a leader in putting into action the useful input of the European scholarly community. Its activity would facilitate the development of the city and the entire region. Many a graduate of Kharkov University would achieve high ranks and positions going forward ([Bagaley et al., 1906: 165-168](#)).

The region had one more institution of high learning in operation at the time – the Prince Bezborodko Nizhyn Gymnasium of Higher Sciences, established in 1805 with the approval of Emperor Alexander I. The founding of this facility is associated with the will of Prince A.A. Bezborodko, who was deceased by then. In charge of the gymnasium's actual infrastructural development was the prince's brother Count I.A. Bezborodko, who committed toward the cause nearly 82,000 rubles worth of his own funds. On top of that, over the course of seven years he would allocate each year toward the facility 20,000 from his late brother's and 15,000 rubles from his own resources. The gymnasium started operation in 1820. Its constitution (as at February 19, 1825) stated that “a diploma from this gymnasium is equal in force to one from a Russian university” ([Supronyuk, 2009: 12](#)). Although initially this educational institution was established as a gymnasium, it would change status twice by the mid-19<sup>th</sup> century. Specifically, via a special government edict, it was first given the status of a lyceum in 1832 (the Nizhyn Physics and Mathematics Lyceum). In 1840, via an edict of Nicholas I, the facility was renamed into the Nizhyn Law Lyceum of Prince Bezborodko.

The lyceum would admit individuals who had successfully finished a gymnasium. Home-educated individuals would have to have passed an exam to prove they met gymnasium-level academic standards. The lyceum is known to have funded the education of 24 students from families of impoverished nobles. In entering a civil service position, those who graduated from the Nizhyn Lyceum with the rank of Valid Student would automatically be promoted to Class 14 in the

Table of Ranks, and those who did with the rank of Candidate – to Class 12 (Degtyarev, 2014: 127, 135; Supronyuk, 2009: 12).

Thus, the development of the public education system in northeastern Ukraine in the first half of the 19<sup>th</sup> century is characterized by greater government regulation of the activity of educational institutions. Note that the region's public education system continually underwent change. There is evidence of greater differential treatment of individuals based on social category membership, with the underprivileged having access to primary education only. The positive characteristics include an increase in the number of secondary educational institutions, both male and female, the creation of Kiev University and Kharkov University, and the establishment of the Nizhyn Lyceum of Prince Bezborodko. Kharkov University, the educational district's central institution, had a significant impact on the development of education not only in northeastern Ukrainian governorates but in other regions of the empire as well. The activity of educational institutions at the time was ideologically and politically oriented toward nurturing a loyal citizen of the Empire, regardless of the population's national characteristics. Yet, a large number of educational institutions in the region were established at the initiative of and with participation from members of the local elites, who realized the need to develop public education in those areas.

### **5. Conclusion**

The making of the public education system in northeastern Ukraine in the period spanning the 18<sup>th</sup> and the first half of the 19<sup>th</sup> centuries was influenced by common European trends associated with the spread of the ideas of Enlightenment, as well as the process of fulfilling the imperial government's need to nurture a citizen who would be useful to the state. What made the public education system in those Ukrainian areas different from the ones in other regions of the Russian Empire is the influence of the activity of Catholic educational institutions in the area and the desire to preserve Ukrainian national specificity, with a significant component thereof being Orthodox religious affiliation. The unification of education based on a single imperial template and the centralization of administration of the activity of educational institutions facilitated the effacement of all national characteristics in the sector. In the first half of the 19<sup>th</sup> century, the uniform education system was finally installed in all regions of the Russian Empire, with its key function being to nurture a well-educated citizen who would be loyal to the Russian state.

### **References**

- Administratyvno-terytorialnyi ustrii, 1990** – Administratyvno-terytorialnyi ustrii Livoberezhnoi Ukrainy 50-kh rokiv XVIII stolittia. Katalog naselenykh punktiv (za materialamy arkhivnykh podatkovykh reiestriv) [The administrative and territorial structure of the Leftbank Ukraine in the 1750s. Catalog of human settlements (based on archival tax registers)]. Kyiv, 1990. 217 s. [in Ukrainian].
- Bagaley et al., 1906** – Bagaley, D.I., Sumtsov, N.F., Buzeskul, V.P. (1906) Kratkiy ocherk istorii Khar'kovskogo universiteta za pervye sto let ego sushchestvovaniya (1805-1905) [A short history of Kharkov University for the first hundred years of its existence (1805-1905)]. Khar'kov: Tipografiya Adol'fa Darre. URL: <http://dspace.univer.kharkov.ua/handle/123456789/5200> [in Russian].
- Bahalii, 1993** – Bahalii, D.I. (1993) Istoriiia Slobidskoi Ukrainy [A short history of Kharkov University for the first hundred years of its existence (1805-1905)]. Kharkiv: Delta. 256 s. [in Ukrainian].
- Degtyarev, 2012** – Degtyarev, S.I. (2012) Civil officers' educational level in the first half of XVIII century. *Bylye Gody*. 23(1): 11-18. [in Russian].
- Degtyarev, 2013** – Degtyarev, S.I. (2013) Incorporation of Ukrainian officialdom into bureaucratic system of the Russian empire during under the rule of Catherine II. *Bylye Gody*. 27(1): 16-25. [in Russian].
- Degtyarev, 2014** – Degtyarev, S.I. (2014) Tsyvilne chynovnytstvo Ukrainy u kintsi XVIII – pershii polovyni XIX st.: monohrafiia [Civil officialdom in Ukraine at the end of the 18th – the beginning of the 19th centuries: Monograph]. Sumy: TOV «Drukarskyi dim «Papirus». 472 s. [in Ukrainian].

**Degtyarev, 2016** – *Degtyarev, S.I.* (2016) Chiny kak instrument natsional'no-unifikatsionnoy politiki Rossiyskoy imperii na zemlyakh Levoberezhnoy Ukrainy, Kavkaza, Bessarabii (konets XVIII – pervaya polovina XIX v.) [Ranks (chiny) as an instrument of national and unification policy of the Russian Empire in the Leftbank Ukraine, Caucasus and Bessarabia (the end of XVIII – the first half XIX centuries)]. *Rusin.* 43(1): 177-195. [in Russian].

**Degtyarev, Kryvosheia, 2016** – *Degtyarev, S.I., Kryvosheia, I.I.* (2016) The Incorporation of Bunchukovogo Partnership in Part of Service and Social Elite of the Russian Empire in the last third of the XVIII century. *Bylye Gody.* 42(4): 1118-1126. [in Russian].

**Dneprov, Usacheva, 2009** – *Dneprov, E.D., Usacheva, R.F.* (2009) Srednee zhenskoe obrazovanie v Rossii [Secondary female education in Russia]. Moskva, 2009. 275 s. [in Russian].

**Domanitskiy, 1901** – *Domanitskiy V.* (1901) K istorii chastnykh pansionov v Kievskoy gubernii v nachale XIX veka [On the history of private boarding schools in the Kiev Governorate at the beginning of the 19th century]. *Kievskaya starina*, 6: 450-459. [in Russian].

**Doroshenko, 1992** – *Doroshenko, D.* (1992) Narys istorii Ukrainy. Tom 2 (vid polovyny XVII stolittia) [Essay on the history of Ukraine. Volume 2 (from the middle of the 17th century)]. Kyiv: Hlobus. 349 s. [in Ukrainian].

**Ershov, 2003** – *Ershov, A.G.* (2003) Vliyanie Moskovskogo universiteta na razvitie gosudarstvennoy sistemy obrazovaniya v Rossii (1755 – seredina XIX veka) [The influence of Moscow University on the development of the state education system in Russia (1755 – mid 19th century)]: avtoref. diss. ... kand. ist. nauk. Moskva. 28 s. [in Russian].

**GAKhO** – Gosudarstvennyy arkhiv Khar'kovskoy oblasti [State Archives of Kharkiv region]. [in Russian].

**Getmanskaya, 2012** – *Getmanskaya, E.V.* (2012) Narodnye uchilishcha XVIII v.: osoby status i filologicheskaya podgotovka [National schools of the 18th century: special status and philological training]. *Istoricheskaya i sotsial'no-obrazovatel'naya mysl'*, 6: 32-34. [in Russian].

**Gurkina, 2001** – *Gurkina, N.K.* (2001) Istoriya obrazovaniya v Rossii (X-XX veka) [History of education in Russia (10th – 20th century)]. Sankt-Peterburg: SPbGUAP. 64 s. [in Russian].

**Kochubei, 2007** – *Kochubei, T.* (2007) Rozvytok osvity na ukrainskykh zemliakh u II pol. XVII – kin. XVIII st. [Development of education in the Ukrainian lands in the second half of the 17th – the end of the 18th century]. *Istoryko-pedahohichniy almanakh*, 2: 38-47. [in Ukrainian].

**Korilova, Magsumov, 2017** – *Korilova, I.V. Magsumov, T.A.* (2017) Emancipation in educational system: Formation of women's higher education in Russia. *European Journal of Contemporary Education*, 6(2): 253-366. [in English].

**Magsumov et al., 2018** – *Magsumov, T.A., Artemova, S.F., Ustinova, O.V., Vidishcheva, E.V.* (2018) Public education system in the Caucasus region in the 1850s: Unification and regulation of educational process. *European Journal of Contemporary Education*, 7(3): 598-607. [in English].

**Maksimovich, 1913** – *Maksimovich, G.A.* (1913) Deyatel'nost' Rumyantseva-Zadunayskogo po upravleniyu Malorossiiy [Activities of Rumyantsev-Zadunaysky on the management of Malorossiya]. T.1. Nezhin: Tipo-Litografiyanasl. V.K. Mil'chevskogo. 344 s. [in Russian].

**Martynenko, 2012** – *Martynenko, I.I.* (2012) Problema natsionalnoi osvity uchnivskoi molodi u tvorchii spadshchyni diiachiv nauky ta kultury Slobozhanshchyny XIX stolittia [The Problem of National Education of Student Youth in the Legacy of Figures of Science and Culture of the Slobozhanshchyna Slobozhanshchina Region of the 19-th Century]: avtoref. dys. ... kand. ped. nauk. Kharkiv. 20 s. [in Ukrainian].

**Masliichuk, 2009** – *Masliichuk, V.* (2009) Hramotnist ta riven osvity na Livoberezhnii Ukraini XVII-XVIII st.: tvorennia istoriografichnoho stereotypu [Literacy and Educational Level at Leftbank Ukraine in the 17th -18 th century: Creation of Historiographical Stereotype]. *Kyivska Akademiia*, 7: 73-86. [in Ukrainian].

**Narys istorii universytetu, 2009** – *Narys z istorii Universytetu Sviatoho Volodymyra* [Essays on the History of St. Vladimir's University]. Kyiv: Vydavnycho-polihrafichniy tsentr Kyivskiy universytet, 2009. 224 s. [in Ukrainian].

**Oleynik, Oleynik, 2013** – *Oleynik, N.N., Oleynik, Yu.A.* (2013) K istorii stanovleniya i razvitiya sistemy obrazovaniya i nauki na Slobozhanshchine i v Belgorodskom krae (XVIII – nachale XXI vv.) [On the history of the formation and development of the system of education and science in Slobozhanshchina and in the Belgorod Territory (17th – the beginning of the 18th



century)]. *Visnyk Natsionalnyi tekhnichnyi universytet «Kharkivskiy politekhnichnyi instytut»*, 48(1021): 113-122. [in Russian].

**Pivovarov, 2002** – *Pivovarov, O.V.* (2002) Stanovlennia i rozvytok svitskoi serednoi osvity na Livoberezhzhi ta Slobozhanshchyni (druha polovyna XVIII – persha tretyna XIX st.) [The formation and the development of secular secondary education in the Leftbank Ukraine and Slobidska Ukraine (the second half of the 18th and the first thirty years of the 19th century.)]: avtoref. dys. ... kand. ist. nauk. Kharkiv. 18 s. [in Ukrainian].

**Polonska-Vasylenko, 1995** – *Polonska-Vasylenko, N.* (1995) Istoriia Ukrainy. Tom 2: vid seredyny XVII stolittia do 1923 roku [History of Ukraine. Volume 2: from the middle of the 17th century until 1923]. Kyiv: Lybid. 606 s. [in Ukrainian].

**Posokhova, 2011** – *Posokhova, L.Iu.* (2011) Na perekhresti kultur, tradytsii epokh: pravoslavni kolehiumy Ukrainy naprykintsi XVII – na pochatku XIX st. [At the crossroads of cultures, traditions, eras: Orthodox colleges of Ukraine at the end of the 17th – beginning of the 19th century]. Kharkiv: KhNU im. V.N. Karazina. 400 s. [in Ukrainian].

**Siropolko, 2001** – *Siropolko, S.* (2001) Istoriia osvity v Ukraini [History of education in Ukraine]. Lviv: Afisha. 664 s. [in Ukrainian].

**Starodubtsev, 2012** – *Starodubtsev, M.P.* (2012) Reformy sistemy obrazovaniya provodimye Ekaterinoy II [Educational Reforms Carried out by Catherine II]. *Ekonomika obrazovaniya*, 2: 36-40. [in Russian].

**Sukhenko, 1998** – *Sukhenko, T.V.* (1998) Zhinocha serednia osvita (XIX – pochatok XX st.) [Women's Secondary Education (19th – beginning of 20th century)]. *Ukrainskyi istorychnyi zhurnal*, 5: 63-74. [in Ukrainian].

**Supronyuk, 2009** – *Supronyuk, O.K.* (2009) Gogol' i ego okruzhenie v Nezhinskoy gimnazii: Biograficheskiy slovar' [Gogol and his entourage at the Nizhyn Gymnasium: Biographical Dictionary]. Kiev: Akadempriodika. 252 s. [in Russian].

**Tairova-Yakovleva, 2017** – *Tairova-Yakovleva, T.* (2017) Povsiakdennia, dozvillia i tradytsii kozatskoi elity Hetmanshchyny [Everyday, leisure and traditions of the Cossack elite of the Hetmanate]. Kyiv: TOV «Vydavnytstvo «KLIO». 184 s. [in Ukrainian].

**Tytar, 2006** – *Tytar, O.V.* (2006) Kultura Slobozhanshchyny: problemy natsionalno-kulturnoi identychnosti [Slobozhanshchina Culture: Problems of National-Cultural Identity]. Kharkiv: Raider. 240 s. [in Ukrainian].

**Tytar, 2015** – *Tytar, O.V.* (2015) Ukrainski natsionalni i kulturni identychnosti v hlobalizovanomu sviti (na prykladi kultury Slobozhanshchyny) [Ukrainian national and cultural identities in a globalized world (exemplified by the culture of Slobozhanshchina)]. Kharkiv: KhNU im. V.N. Karazina. 348 s. [in Ukrainian].

**Vladimirskiy-Budanov, 1873** – *Vladimirskiy-Budanov, M.F.* (1873) Gosudarstvo i narodnoe obrazovanie s XVII veka do uchrezhdeniya ministerstv [State and public education from the 17th century until the establishment of ministries]. *Zhurnal Ministerstva narodnogo prosveshcheniya*. Ch.CLXVIX: 165-220. [in Russian].





Copyright © 2019 by Academic Publishing  
House Researcher s.r.o.  
All rights reserved.  
Published in the Slovak Republic  
European Journal of Contemporary Education  
E-ISSN 2305-6746  
2019, 8(4): 943-950  
DOI: 10.13187/ejced.2019.4.943  
[www.ejournal1.com](http://www.ejournal1.com)

**WARNING!** Article copyright. Copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of the violation of the author(s) rights will be pursued on the basis of international legislation. Using the hyperlinks to the article is not considered a violation of copyright.



### The German System of Public Education in the Period between the 15th and early 20th centuries. Part 3

Anvar M. Mamadaliev <sup>a, b, \*</sup>, Natalia V. Svechnikova <sup>c</sup>, Ivan A. Ermachkov <sup>a, b</sup>, Aude Médico <sup>d</sup>

<sup>a</sup> International Network Center for Fundamental and Applied Research, Washington, USA

<sup>b</sup> Volgograd State University, Volgograd, Russian Federation

<sup>c</sup> Plekhanov Russian University of Economics, Russian Federation

<sup>d</sup> University of Geneva, Geneva, Switzerland

#### Abstract

The cycle's third article considers the Prussian elementary school evolution from the second half of the 19th century to the early 20th century. Special attention is paid to the elementary school system development as well as pedagogical issues of the school organization and management.

Scientific and specialized literature on the research topic was used as materials. Methodological basis of the study consisted of the traditional historiography principles historicism, scientific objectivity and consistency. Methods used in the course of work are as follows: comparative method. It allowed comparing the main doctrines of rationalist and canonical Prussian schools. Thanks to the comparative method, it became possible to identify the reasons that allowed German teachers-innovators to seriously advance German pedagogy to the leading positions in the second half of the 19th century.

In conclusion, the authors noted that the Reformation and the emerging Protestantism played an important role in the public education system development in Prussia and then in Germany. It was Protestantism that would bring the cause of schooling to a fundamentally new level and create conditions for the German pedagogy establishment. Ultimately, German teachers-innovators would create a rationalist school, which in turn would be focused on the diverse knowledge formation in a student, and this would allow to create a foundation for the entire advanced German science in the future.

**Keywords:** elementary schools, canonical school, rationalist school, German Empire, Prussia, Adolph Diesterweg, King Friedrich Wilhelm III, Otto von Bismarck.

---

\* Corresponding author

E-mail addresses: [anvarm@mail.ru](mailto:anvarm@mail.ru) (A.M. Mamadaliev)

### **1. Introduction**

The German public education system history is of great interest to researchers. One of the main reasons for this is that it was the German public education system that was afterwards widely adopted in other countries. In 1860, Yu. Rekhnevskii noted on the pages of the Russian Journal of the Ministry of Public Education: "Almost everything in our current schooling arrangements was borrowed from Germany. Our universities, grammar schools and other educational institutions are organized according to the German model; their statutes, their composition of educational subjects, in short. The entire external part of our schools was borrowed from Germany; our textbooks also make mostly copies of German textbooks" (Rekhnevskii, 1860: 1).

### **2. Materials and Methods**

Scientific and specialized literature on the research topic was used as materials.

Methodological basis of the study consisted of the traditional historiography principles historicism, scientific objectivity and consistency. Methods used in the course of work are as follows: comparative method. It allowed comparing the main doctrines of rationalist and canonical Prussian schools. Thanks to the comparative method, it became possible to identify the reasons that allowed German teachers-innovators to seriously advance German pedagogy to the leading positions in the second half of the 19th century.

### **3. Discussion**

The historiography related to the subject under examination may be divided chronologically into the pre-revolutionary historiography (1860–1917) and the contemporary historiography (1918–2019).

In terms of the pre-revolutionary historiography, researchers have devoted a significant amount of attention to issues of public education in Germany in particular and in Europe as a whole. The subject has been explored by scholars Yu.S. Rekhnevskii (Rekhnevskii, 1860), P.N. Voeikov (Voeikov, 1873), A.V. Belyavskii (Belyavskii, 1887), F. Paulsen (Paulsen, 1908), N.V. Speranskii (Speranskii, 1898), and others.

The level of researchers' interest in the subject of philosophical currents in pedagogy has been quite high as well. This subject has been researched by scholars like H. Weimer (Weimer, 1913), M.I. Demkov (Demkov, 1912), E.P. Krevin (Krevin, 1915), E. Künoldt (Künoldt, 1897), G. Krenenberg (Krenenberg, 1896), F. Jakobi (Jakobi, 1916), F. Fischer (Fischer, 1912), and others.

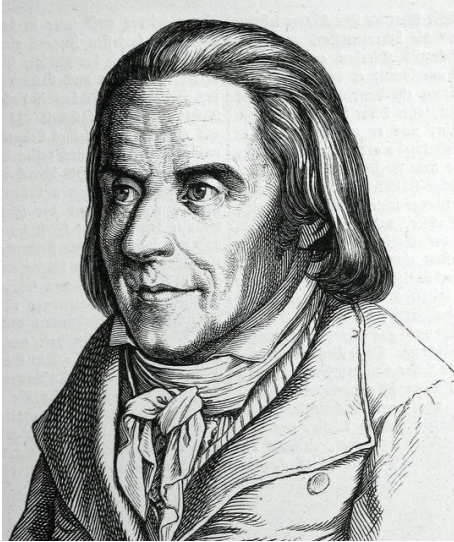
In terms of the contemporary historiography, issues of the German and European history of pedagogy have been explored by scholars A.I. Piskunov (Piskunov, 1960), A.M. Mamadaliev (Mamadaliev et al., 2019; Mamadaliev et al., 2019a; Mamadaliev et al., 2019b), L.G. Abramova (Abramova, 2004), V.G. Bezrogov (Bezrogov, 2018), S.M. Marchukova (Marchukova, 2011), I.A. Sergienko (Sergienko, 2017), G. Rajović (Rajović et al., 2018; Rajović et al., 2018a), L.V. Obratsova (Obratsova, 1999), and others.

### **4. Outcomes**

At the beginning of the 19th century, in order to raise the public elementary education level in Prussia, German national teachers were involved, and young Prussian candidate teachers were sent abroad and mainly to Burgdorf to Pestalozzi (Figure 1) (Ignatovich, 1869: 41). Thus, a considerable number of young people gathered around Pestalozzi. They were imbued with the pedagogical ideas of this great teacher. Back in Prussia these people were introducing Pestalozzi's innovations to their educational work. This was how new pedagogical ideas were disseminated in Prussian society. Soon these sprouts became apparent in real practice. Thus, in 1811, a project to transform evangelical schools in Silesia was presented to the Liegnitz School Board. The draft was outlining the following provisions: "1) school education should be broader in scope and relatively to its development, it should be more productive. Subjects of study: reading, arithmetic, moral and religious rules, general information from the field of nature, art, geography and history. The main thing is to develop children's abilities, their memory, mind, reasoning and thinking, and especially to develop their moral and religious feelings. 2) spiritual inspectors are required to ensure that studying is used for six hours daily. 3) tuition fees should be turned into a permanent tax that should be spread out to all residents, commensurate with the plot of land and everyone's income, regardless of whether they have children or not. 4) monthly conferences of preachers with the

public school teachers, established by the 1765 statute, should be made mandatory from now on, as they can contribute to improving the quality of education." (Ignatovich, 1869: 42).

Pestalozzi's basic ideas about primary public education and upbringing were universal. Pestalozzi believed that the purpose of such an education and upbringing was the possible development of all abilities of the human spirit. In doing so, he was focusing on developing human mental capabilities, and was putting religion and religious feelings on the back burner. (Abramov, 1893). It is known that Pestalozzi went very little into the dogmata of Christianity, but in practice he acted in a truly Christian spirit.



**Fig. 1.** Johann Heinrich Pestalozzi (1746-1827)

Despite the universal recognition of Pestalozzi, he did not establish a special pedagogical school, similar to the schools of Pietists, Humanists, Philanthropists, etc. The school always assumed a certain unity of views on science, but Pestalozzi did not restrain his students and they established two main pedagogical schools: rationalist or all-German, and canonical or Prussian. Rationalist School, its main representative was Adolph Diesterweg. He was striving to bring the ideal of raising a person to the maximum, and was putting formal intelligence ahead of religious development, strongly rejecting the principle of any school dependence on the church. Canonic or Prussian pedagogical school, the founders of which are considered to be the Prussian Kings Friedrich II and Friedrich Wilhelm III, was also recognizing the formal intelligence development of a citizen as an educational purpose of the public school, but it had been strictly applied to the needs of their practical church, family, community and state life, and moral and religious development was put ahead of the scientific and intelligence development (Ignatovich, 1869: 44).

The oldest Pestalozzians (Plamann, Nietorp, Gräfe, Dienter and many others) were the ancestors of a new generation of the public school teachers. Thanks to the teachers of Pestalozzi's schools many teachers abandoned the methods of Basedow and Rochow and absorbed Pestalozzi's pedagogical ideas. The educational social class of elementary schools, previously barely familiar to German society, together with the improvement of its scientific and pedagogical education, began acquiring higher moral significance among the people. This was greatly facilitated by the already customary congresses of public teachers, which were discussing the best ways of teaching and educating, and where well-known leader teachers were delivering their public lectures. Teachers' training colleges became centers of such pedagogical meetings.

By 1840, there had already been about 30,000 public schools in Prussia. 38 teachers' training colleges were training pedagogical resources (Ignatovich, 1869: 47). In 1840, the rationalist trends in the public school were persecuted and preference was given to the canonic school that was relying on religious education. This situation persisted until 1848, that is, until the revolutionary events in Germany and Prussia. After the first Prussian National Assembly was established in Berlin, the issue of public education was also on the agenda. It is important to note that the

rationalist school teachers have come to Berlin en masse to seek their financial standing improvement and to bridge the gap between the school and the church once and for all.

The National Assembly Commission adopted a constitution that was clearly declaring "complete freedom for everyone to teach and open schools, prevention of any constraining measures, and disengagement of public schools from the church supervision" (Ignatovich, 1869a: 100). However, the King did not approve the Constitution and the National Assembly was dissolved.

On February 6, 1850, after numerous political debates the Constitution was adopted. It outlined the main articles of the educational process organization. Thus, the right to teach, open and run schools was given to anyone who could provide evidence of their moral, scientific and technical integrity. Public teachers were assigned the rights and responsibilities of public service. Different faiths had to be taken into account when organizing public schools. Religious education in public schools was assigned to the church societies. In addition, the state was granting the public school teachers a permanent allowance in the amount corresponding to local conditions (Ignatovich, 1869a: 102).

Meanwhile, the revolutionary fervor in Prussia was diminishing and the conservatives began to prevail everywhere. The school law adoption was postponed to other times. From October 1 to October 3, 1854, Raumer, the Minister of Spiritual and Educational Affairs, published three Prussian Regulativs (Regulations - Auth.) on elementary education. The regulation dated October, 1, set out the rules for the teachers' training in colleges; The provision dated October, 2, regulated the rules of preparation for the youth admission to the teachers' training colleges. Finally, the regulation dated October, 3, dealt with the rules of elementary education in the public evangelical one-grade schools.

The promulgation of these provisions raised considerable uproar in the pedagogical world not only in Prussia, but throughout Germany, where rationalist pedagogy has had stronger positions. It even came to the civil unrest, as a result of which the Regulativs case was submitted to the Prussian parliament in 1855. During the discussion, the principles of the regulative framework were found to be correct. This allowed to increase the pressure of the state on the rationalist school supporters.

As it is known, the peak of success of the rationalistic school was in the 1830s, but this school has taken the system of discursive schooling too far, continuously increasing the number of subjects and the volume of material taught. Numerous formal and methodological exercises were used in the training and elementary schools to develop thinking abilities. Geometry, cosmography, natural history, geography, political history were studied on a very large scale. In addition, teachers' training colleges taught the following as special subjects: anthropology, psychology, pedagogy, didacticism, methodology, comparative history of pedagogy and other disciplines. As a result, in certain locations such excess disciplines were beyond what students could manage and teaching was reduced to formalism. Nevertheless, the rationalist teachers were not paying attention to the failures.

The fact is that the 1850s were a period of active development in the field of technical sciences. While some natural scientists were mastering the forces of physical nature, developing aeronautic methods and internal combustion engine, others, and mostly German, chose the subject of their research to be human, that is, human body and various manifestations of the human spirit's activities in a person, as well as the reasons for these manifestations. This is how the materialistic teachings were created. Following the materialistic teachings dissemination in the German society, religious skepticism, loss of interest in religion and atheism finally emerged. This did not fail to affect the German elementary school under the guidance of rationalist teachers (Ignatovich, 1869b: 48). That is why the government has taken the path of supporting the canonical school, with the aim of preserving religious beliefs and, in this regard, strengthening patriotism. This had negative consequences, as the Government had systematically sought to make the public school as narrow-spirited as possible, as well as to destroy teachers' autonomy and initiative.

According to statistics as of 1862, there were 25,156 elementary schools in Prussia, and the total number of educational institutions, universities excluded, was 28,546. The number of teaching staff at that time was 46,227, and the number of students was 3,096,546 (Statistisches



svedeniya, 1863: 64). On average, there were 108 students and just under 2 teachers per institution.

In 1864 the united German Empire had: 20 universities, 278 classical grammar schools, 43 classical pro-gymnasiums, 28 humanist grammar schools, 12 lyceums, 83 Latin schools, 239 real schools, 120 city schools and 145 teachers' training colleges. There was no data on elementary schools back then (Novikov, 1873: 2).

The situation began to change in the 1870s with the activities of Otto von Bismarck, when Adalbert Falk became the Minister of Public Education and Worship. In March 1872, Falk passed a law limiting the influence of the clergy on the public school and completely subordinated it to the state. Another law of the same year significantly expanded the programs and improved the teaching methods. It is important to note that, under Falk, the number of schools and other educational institutions was significantly increased, the financial standing of teachers was improved, and they were made more independent of authoritative interference. At the same time, the German government was taking measures to contain the Catholic clergy, including the matters of elementary education.

In 1879, when Bismarck began to need the support of the center for passing the protectionist system, he ousted Falk and appointed Robert Viktor von Puttkamer to replace him. There was a period of reaction in the field of public education yet again. Puttkamer only made one improvement in elementary schools. Thus, in 1880 he introduced a somewhat simplified spelling system, the so-called Puttkamer Spelling. As early as 1881, Puttkamer was removed from his post and transferred to another one, the Minister of the Interior.

At the beginning of the 20th century, the German public education system was managed by the Ministry of Spiritual Affairs, Education and Medicine. Each province had a provincial school board, and each district had a spiritual and school affairs commission that supervised public education in the district, appointing teachers, supervising their activities and school property, approving textbooks, and so on.

Each individual school was assigned by the State directly to the population it served; in cities, school deputations or commissions were drawn up for this purpose; in villages, rural school administrations were elected by the population and approved by the administration. School construction and maintenance was the responsibility of the residents of the school district (community, parish) or school societies that had been established specifically for this purpose. The law precisely defined the minimum hygienic conditions that school buildings must meet. Separate schools could be set up for the population of different religions in each district, and the cost of maintaining the schools was then distributed accordingly. Inspectors of public schools (several in each district) were appointed by the state and depended solely on it, whether they were secular or clerical; the latter could, however, be only additional or honorary inspectors, and their appointment could always be revoked. There were still local inspectors, monitoring the district's schools, as assigned by the local school administration.

It is important to note that the clergy had the right to supervise the teaching of the Scripture knowledge in public schools, the choice of textbooks on the subject and the degree of religious training of teachers.

All the primary public schools of the German Empire were divided into the following categories: multi-grade schools, schools with two teachers and schools with a single teacher, which in turn were divided into one-grade schools and the so-called half-day schools. One-grade schools were divided into three departments: the junior one for children of six-eight years, the secondary one for children of eight-ten years and the senior one for the children of ten-fourteen years; there should have been no more than 80 students there. If there were more of them and it was impossible to invite a second teacher to the school, a queue is arranged for the students, and some of them were coming to school in the morning and others in the evening. It was mandatory to have two classrooms in schools with two teachers, and if there were more than 120 students, a third classroom should have been arranged. Gender disaggregation of students was considered desirable only in multi-grade schools.

The following subjects were required to be taught in all German public schools: religion, mother tongue, reading, writing, arithmetic, introduction to geometry, drawing, geography and science, gymnastics (for boys), needlework (for girls), singing. Public school compulsory attendance existed in Prussia for all children between the ages of six and fourteen whose parents



could not provide them with appropriate education at home; in respectful cases the inspector could release them from this obligation. Free tuition existed in the German Empire only in some cities; in other locations, parents of all children enrolled in the school were required to pay the school fee to the community fund. However, the poor could be released from it almost everywhere. Teachers' allowance was composed of tuition fees, community funds, school capital income and government subsidies; its minimum size was set by law at 810 Marks, with a furnished apartment with lighting; allowance standards for assistants were slightly lower. On average, a village teacher received about 900 Marks in Prussia, while a city teacher received about 1,200 Marks. Attending a private school released the student from the public school compulsory attendance. Throughout the German Empire in the early 1890s there were 56,563 public schools with 120,032 teachers (including 13,750 female teachers) and 7,925,688 students. Thus, there were an average of 140 students per public school. As per the number of grades, the public schools were distributed as follows: 16,600 one-grade schools, 9,474 two-class schools (of which 5,878 were half-day), 4,447 three-grade schools, 1,553 four-grade schools, 692 five-grade schools, 1,551 sex-grade schools, 425 seven-grade and multi-grade schools ([Brokgaуз i Efron, 1890–1907](#)).

In 1911 the German Empire had about 24 thousand schools with a single teacher and 10 thousand schools with several teachers. Although the Compulsory School Education Act required compulsory education to cover 8 years of study, only 677 schools out of 34,000 had all 8 grades. 809 schools had seven grades, other schools had fewer grades than seven ([Bim-Bad, 2015: 143](#)).

## 5. Conclusion

In conclusion, it should be noted that the Reformation and the emergence of Protestantism played an important role in the development of public education in Prussia and later in Germany. It was Protestantism that would bring the cause of schooling to a fundamentally new level and create conditions for the German pedagogy establishment. Ultimately, German teachers-innovators would create a rationalist school, which in turn would be focused on the diverse knowledge formation in a student, and this would allow to create a foundation for the entire advanced German science in the future.

## References

- [Abramov, 1893](#) – *Abramov V.Ya.* (1893). *Pestalotstsi: Ego zhizn' i pedagogicheskaya deyatel'nost'* [Pestalozzi: His life and teaching]. SPb. [in Russian]
- [Abramova, 2004](#) – *Abramova, L.G.* (2004). *Filosofskoe istolkovanie evropeiskoi pedagogiki vtoroi poloviny XVIII – nachala XX veka: Monografiya* [A philosophical construal of European pedagogy of the period between the 2nd half of the 18th and the early 20th centuries: A monograph]. Kaliningrad, Russia: BIEF. [in Russian]
- [Belyavskii, 1887](#) – *Belyavskii, A.V.* (1887). *Istoricheskii ocherk razvitiya elementarnoi shkoly, v biografiiakh zamechatel'neishikh pedagogov i po ustavam pravitel'stv* [A historical essay on the development of the elementary school system – based on the biographies of eminent pedagogues and the statutes of governments]. Glukhov, Russia: Pechatnya Shumitskogo. [in Russian]
- [Bezrogov, 2018](#) – *Bezrogov, V.G.* (2018). *Die un/sichtbare Welt: Retsepsiya Orbis Sensualium Pictus Ya.A. Komenskogo v Rossii 1-i pol. XVIII v.: Obrazovatel'nye praktiki i rannie perevody* [Die un/sichtbare Welt: The reception of Orbis Sensualium Pictus by J.A. Komensky in Russia in the 1st half of the 18th century: Educational practices and early translations]. *Detskie Chteniya*, 13(1): 220-284. [in Russian]
- [Bim-Bad, 2015](#) – *Bim-Bad, B.M.* (2015). *Istoriya gosudarstvennoi shkoly v Germanii (XVIII – pervaya tret' XX veka)* [History of a public school in Germany (XVIII – first third of the XX century)]. *Istoriko-pedagogicheskii zhurnal*. № 1. Pp. 140-151. [in Russian]
- [Brokgaуз i Efron, 1890–1907](#) – *Entsiklopedicheskii slovar' Brokgaуз i Efron* [Encyclopedic Dictionary of Brockhaus and Efron]. V 86 t. SPb., 1890–1907. [in Russian]
- [Clark, 2006](#) – *Clark, Christopher: Preußen. Aufstieg und Niedergang, 1600–1947, übersetzt aus dem Engl. Erste Ausgabe in England 2006.* [in German]
- [Demkov, 1912](#) – *Demkov, M.I.* (1912). *Istoriya zapadnoevropeiskoi pedagogiki* [The history of Western European pedagogy]. Moscow, Russia: Tovarishchestvo I.D. Sytina. [in Russian]

[Fischer, 1912](#) – *Fischer, F.* (1912). Basedow und Lavater: In ihren persönlichen und literarischen Beziehungen zueinander auf Grund ihres unveröffentlichten Briefwechsels und Tagebuch-Aufzeichnungen Lavaters. Straßburg, Germany: J.H.E. Heitz. [in German]

[Hamann, 1993](#) – *Hamann, B.* (1993). Geschichte des Schulwesens.

[Ignatovich, 1869](#) – *Ignatovich, V.* (1869). Elementarnoe obuchenie v Prussii, v ego istoricheskom razvitii i sovremennom sostoyanii [Elementary education in Prussia, in its historical development and present state]. *ZhMNP*. № 3. Pp. 1-49. [in Russian]

[Ignatovich, 1869a](#) – *Ignatovich, V.* (1869). Elementarnoe obuchenie v Prussii, v ego istoricheskom razvitii i sovremennom sostoyanii [Elementary education in Prussia, in its historical development and present state]. *ZhMNP*. № 4. Pp. 98-130. [in Russian]

[Ignatovich, 1869b](#) – *Ignatovich, V.* (1869). Elementarnoe obuchenie v Prussii, v ego istoricheskom razvitii i sovremennom sostoyanii [Elementary education in Prussia, in its historical development and present state]. *ZhMNP*. № 5. Pp. 46-64. [in Russian]

[Jakobi, 1916](#) – *Jakobi, F.* (1916). Lohn und Strafe bei J. B. Basedow. Munich, Germany: Kempten. [in German] Krenenberg, 1896 – Krenenberg, G. (1896). Gotthilf Salzmann und seine Bedeutung für unsere Zeit. Frankfurt, Germany: Moritz Diesterweg. [in German]

[Jeismann, 1996](#) – *Jeismann, Karl-Ernst* (1996). Das preußische Gymnasium in Staat und Gesellschaft, Bd. 1. [in German]

[Künoldt, 1897](#) – *Künoldt, E.* (1897). Caradeux de la Chalotais und sein Verhältnis zu Basedow. Oldenburg, Germany: Schulze. [in German]

[Kareev, 1894](#) – *Kareev N.I.* (1894). Istoriya Zapadnoi Evropy v novoe vremya. Konsul'stvo, imperiya i restavratsiya XIX vek [The history of Western Europe in modern times. Consulate, empire and restoration of the 19th century]. Konsul'stvo, imperiya i restavratsiya, T. 4, SPb. [in Russian]

[Krevin, 1915](#) – *Krevin, E.P.* (1915). Russo – istochnik noveishikh techenii v nemetskoj pedagogike [Rousseau, a source of novel currents in German pedagogy]. Petersburg, Russia: Tipografiya M.M. Stasyulevicha. [in Russian]

[Mamadaliyev et al., 2019](#) – *Mamadaliyev, A.M., Gordeev, I.A., Miku, N.V., Médico, A.* (2019). Teacher training for the system of primary education in Switzerland in the mid-nineteenth century. *European Journal of Contemporary Education*, 8: 222-228.

[Mamadaliyev et al., 2019a](#) – *Mamadaliyev, A.M., Ludwig, S.D., Miku, N.V., Médico, A.* (2019). The German System of Public Education in the Period between the 15th and early 20th centuries. Part 1. *European Journal of Contemporary Education*, 8(2): 445-453.

[Mamadaliyev et al., 2019b](#) – *Mamadaliyev, A.M., Svechnikova, N.V., Miku, N.V., Médico, A.* (2019). The German System of Public Education in the Period between the 15th and early 20th centuries. Part 2. *European Journal of Contemporary Education*, 8(3): 646-654.

[Marchukova, 2011](#) – *Marchukova, S.M.* (2011). O preemstvennosti pedagogicheskikh sistem Ya.A. Komenskogo i S.I. Gessena [On the continuity of the pedagogical systems of J.A. Komensky and S.I. Hessen]. *Vestnik Russkoi Khristianskoi Gumanitarnoi Akademii*, 12(2): 190-197. [in Russian]

[Novikov, 1873](#) – *Novikov, N.* (1873). Elementarnaya shkola v Germanii [Elementary school in Germany]. *ZhMNP*. № 1. Pp. 1-35. [in Russian]

[Obraztsova, 1999](#) – *Obraztsova, L.V.* (1999). Filantropizm i reformatorstvo v nemetskoj pedagogike: Monografiya [Philantropinism and reformation in German pedagogy: A monograph]. Marburg, Germany: Izdatel'stvo Marburgskoi Laboratorii. [in Russian]

[Paulsen, 1908](#) – *Paulsen, F.* (1908). Istoricheskiy ocherk razvitiya obrazovaniya v Germanii [A historical essay on the development of education in Germany] (N.V. Speranskii, Trans.). Moscow, Russia: Tovarishchestvo I.D. Sytina. [in Russian]

[Piskunov, 1960](#) – *Piskunov, A.I.* (1960). Ocherki po istorii progressivnoi nemetskoj pedagogiki kontsa XVIII – nachala XIX v. [Essays on the history of progressive German pedagogy of the late 18th – early 19th centuries]. Moscow, USSR: APN RSFSR. [in Russian]

[Polyakova, 2017](#) – *Polyakova, M.A.* (2017). Reglamentatsiya shkol'nogo dela v nemetskiykh ustavakh konfessional'noi epokhi i pervye nemetskie shkoly v Moskve [Regulation of schooling in German statutes of the confessional era. The first German schools in Moscow]. *Religiya. Tserkov'. Obshestvo*, 6: 318-343. [in Russian]

[Rajović et al., 2018](#) – *Rajović, G., Zuev, M., Vazerova, A.G., Trailovic, M.* (2018). Development of primary public education system in Serbia in 1832-1882. *European Journal of Contemporary Education*. 7(3): 623-629.

[Rajović et al., 2018a](#) – *Rajović, G., Bratanovskii, S.N., Vazerova, A.G., Trailovic, M.* (2018). Development of the secondary-level education in Serbia from 1808 to the 1870s. *European Journal of Contemporary Education*. 7(4): 927-934.

[Rekhnevskii, 1860](#) – *Rekhnevskii, Yu.S.* (1860). Oчерk istorii narodnykh uchilishch v Germanii (okonchanie) [An essay on the history of public schools in Germany (the final part)]. *Zhurnal Ministerstva Narodnogo Prosveshcheniya*, 12: 117-156. [in Russian]

[Sergienko, 2017](#) – *Sergienko, I.A.* (2017). Nemetskie avtory – russkim detyam: Opyt bibliografii detskoi knigi vtoroi poloviny XVIII v. [German authors – for Russian children: The experience of children's literature of the 2nd half of the 18th century]. *Detskie Chteniya*, 12(2): 382-411. [in Russian]

[Speranskii, 1898](#) – *Speranskii, N.V.* (1898). Oчерk istorii srednei shkoly v Germanii [An essay on the history of the German secondary school system]. Moscow, Russia: Izdatel'stvo M. i S. Sabashnikovykh. [in Russian]

[Statisticheskie svedeniya, 1863](#) – Statisticheskie svedeniya o narodnom obrazovanii v Prussii [The statistical data on public education in Prussia]. *ZhMNP*. 1863. № 4. Pp. 57-65. [in Russian]

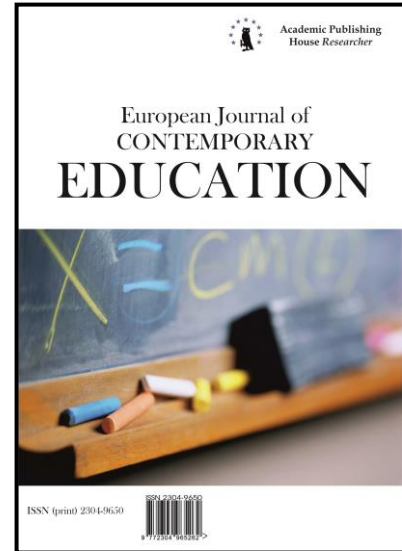
[Voeikov, 1873](#) – *Voeikov, P.N.* (1873). Istoriya klassicheskogo obrazovaniya v Evrope [The history of classic education in Europe]. Saint Petersburg, Russia: Tipografiya M.O. Ettingera. [in Russian]

[Weimer, 1913](#) – *Weimer, H.* (1913). Istoriya pedagogiki [The history of pedagogy] (K.A. Tyuleliev, Trans.). Saint Petersburg, Russia: Tovarishchestvo M.O. Wolf. [in Russian]



Copyright © 2019 by Academic Publishing House Researcher s.r.o.  
All rights reserved.  
Published in the Slovak Republic  
European Journal of Contemporary Education  
E-ISSN 2305-6746  
2019, 8(4): 951-963  
DOI: 10.13187/ejced.2019.4.951  
[www.ejournal1.com](http://www.ejournal1.com)

**WARNING!** Article copyright. Copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of the violation of the author(s) rights will be pursued on the basis of international legislation. Using the hyperlinks to the article is not considered a violation of copyright.



## The Relationship of Education and Economic in the Don Host at the 1890

Artyom Yu. Peretyatko <sup>a, b, \*</sup>

<sup>a</sup> Southern Federal University, Russian Federation

<sup>b</sup> East European History Society, Russian Federation

### Abstract

The question of the possible relationship between the level of education of the Cossacks and the degree of their well-being has not been raised by historians to date. Meanwhile, “His Imperial Majesty’s Commission to analyze the causes that damaged the economic life of the Don Host, and to formulate measures to restore its economic well-being” (“N.A. Maslakovets’ Commission”) in 1899 confidently stated that it was the shortcomings of the education system in the Don Host Land that entail the impoverishment of the Cossacks.

The author, on the basis of the protocols of the commission and the materials of its activities, preserved in archives (the State Archive of the Rostov Region, the Russian State Military Historical Archive and the Manuscripts Department of the Russian National Library), shows that the commission did not have unity in considering educational issues. Nevertheless, prevailing was P.G. Mordvintsev’s point of view, according to which education in the Cossack regions was to ensure the universal literacy of male Cossacks and their mastery of the special technical knowledge necessary for effective agriculture. Prior to achieving this goal, according to the members of the commission, it was impossible to implement many other measures they proposed aimed at restoring the well-being of the Don farms. However, War Minister A.N. Kuropatkin rejected the commission’s proposals, relying on the opinion of the most conservative part of the Cossacks, who believed that education discouraged Cossacks from hard work.

**Keywords:** the Don Host Land, Don Cossacks, Don economy, N.A. Maslakovets’ Commission, impoverishment of Don Cossacks in the late XIXth century, N.A. Maslakovets, M.S. Markov, Kh.I. Popov, A.N. Kuropatkin.

### 1. Introduction

“In the matter of the low productivity of their agricultural activities, the Cossacks certainly bear an involuntary retribution for the lack of intellectual energy in it. But how to blame it for the

---

\* Corresponding author

E-mail addresses: [ArtPeretatko@yandex.ru](mailto:ArtPeretatko@yandex.ru) (A.Y. Peretyatko)



fact that those who should carry this out, not only did not give it the necessary special schools, but did not give a sufficient number of literacy schools, so far half of the male population remains illiterate, not to mention the female” (Protocols, 1899: 176). The quote is taken from “His Imperial Majesty’s Commission to analyze the causes that damaged the economic life of the Don Host, and to formulate measures to restore its economic well-being”, or as it is more commonly named by historians “N.A. Maslakovets’ Commission”. The idea that an insufficient educational level is one of the reasons of the impoverishment of the Don Cossacks has been repeatedly expressed by its members. Moreover, as we will see below, completely strangers sent letters to N.A. Maslakovets, arguing that it is the improvement of the education system in the Don Host Land that can serve as an impetus for the development of the local economy. Although in recent years several articles have been published examining the activities of the commission of N.A. Maslakovets (Peretyatko, 2018; Skorik, 2014), it was precisely those aspects of its work that were related to education that did not attract the attention of researchers. Meanwhile, the commission’s materials contain a number of interesting authors’ assessments of both: the situation in Don education at the end of the XIXth century and the impact of this situation on the development of the Don economy – assessments belonging to persons of completely different positions and status, from retired officers to the War Minister inclusive. In our article we would like to provide these assessments to the attention of modern historians and educators, as well as to carry out at least their most general analysis.

The results of this analysis will be especially in demand now, when historians have clearly increased their interest in studying the features of education in various regions of the Russian Empire (Cherkasov et al., 2019; Cherkasov et al., 2019a; Magsumov et al., 2018; Shevchenko et al., 2016). This year, the first post-Soviet article was published that claimed to analyze the evolution of the primary education system in Cossack regions (Molchanova et al., 2019). However, such articles usually do not consider the goals that the government set for itself, conducting educational reforms, allocating money to create new schools, or, conversely, reducing funding for education in specific provinces and areas. On the other hand, the reasons for the impoverishment of the Cossacks at the end of the XIXth century were often considered simplistically both by contemporaries and by later historians, and the main reason for this impoverishment was the decrease in Cossacks’ land units allotments (Volvenko, 2017: 147-149). Even the question of the influence of the degree of education of Cossacks’ masters on their level of well-being has not yet been raised in historiography.

So, what do the materials of the commission of N.A. Maslakovets tell us about whether the Cossacks needed education to improve their well-being, and, if so, what kind of education?

## **2. Materials and methods**

We hasten to add, that we do not plan to analyze the entire vast amount of statistical information about Don education, which was collected by the commission of N.A. Maslakovets. We will be precisely interested in the opinions of its members on the relationship between the level of well-being of the Cossacks and the educational system in the Don Host Land expressed by them during their work. Therefore, we will not turn to the final report of the commission (Maslakovets, 1899), but to its protocols (Protocols, 1899). In relation to this approach, we will also almost not dwell on the reports of the commission members on certain features of Don education, since the facts contained in them are of a special pedagogical nature. We will be more interested in their reports on the economy, that described those aspects of the education system in the Don that hindered its development. In addition to the protocols of the commission, we also turn to archival materials of the State Archive of the Rostov Region (GARO) and the Russian State Historical Archive (RGIA).

The main methods we use are historical-descriptive and historical-comparative methods. Most of the opinions given below were not previously involved in scientific circulation, and therefore we will cite extensive quotes from them. On the other hand, comparing them with each other, we try to understand which of these opinions was closer to reality, and to what extent reforms in education could actually help to solve the economic problems of the Don.

## **3. Discussion and results**

The decision to establish a commission to study the economic problems of the Don Cossacks and the search for ways to resolve them was made in 1898, as a result of a petition from the Don



nobles to Nicholas II (Volvenko, 2017: 120). On June 16, its future chairman was elected: it was Lieutenant-General N.A. Maslakovets, who was at the disposal of the War Minister, a former official of the Don Host Land's administration and the Orenburg ataman, who received orders to leave "for the Don region immediately, to gain on-the-spot understanding of the issues of the forthcoming discussion of the commission" (GARO. F. 410. Op. 1. D. 682. L. 60b). The government official spent the next three months traveling around the villages, figuring out "the current situation of various parts of the population of the Don Host Land" (Protocols, 1899: 1). On the 19<sup>th</sup> of August the Ataman's chancellery submitted for his consideration a memorandum on the causes of the economic decline of the population of the Don Host Land, compiled by retired colonel A.G. Fateev (unfortunately, we did not find any additional information about this person) (GARO. F. 46. Op. 1. D. 3282. L. 230b). This is the earliest analytical document related to the work of N.A. Maslakovets' Commission, which is represented in the archives. And it is symptomatic that its author began his text with a description of the problems of Don education.

A whole section was devoted to these problems, "Overview of the Mental and Moral Development of the Population of the Don Host Land" (GARO. F. 46. Op. 1. D. 3282. L. 14). A.G. Fateev noted that there were no higher educational institutions on the Don at all, and, for instance, in 1897 only 35 people passed a full course of secondary education (13 – in Novocherkassk gymnasium and 22 – in Uryupin and Ust-Medveditsky intermediate schools) (GARO. F. 46 Op. 1. D. 3282. L. 14-140b). Here the author has slightly distorted the reality by not including into the secondary Don educational institutions the gymnasiums and the intermediate schools of Taganrog and Rostov-on-Don. Further A.G. Fateev even more dramatized the situation in Don education, proving that the Cossacks have almost no chance to study at the educational institutions listed by him. He complained that "government officials, merchants and craftsmen, by the very nature of their occupation, live in cities and large centers of the population, and therefore have the opportunity to always find teachers and tutors for preparing children for educational institutions; but where does the Cossack a farmer, a villager, who lives on his own site, take a teacher or a tutor to prepare his children, since there are no lower educational institutions, neither schools near the place of his residence, and therefore his children do not get into secondary schools, or because of poor preparation they are not included in the competition" (GARO. F. 46. Op. 1. D. 3282. L. 15). Although these allegations were probably based on real observations, A.G. Fateev somewhat distorted reality by trying to protect the Don Cossacks from accusations of inertness and unwillingness to get the education. According to the latest assessment of the N.A. Maslakovets' commission, 66 % of male Cossack children got primary education, when the lack of schools was felt mainly in sparsely populated areas (Protocols, 1899: 251-252). However, A.G. Fateev, without citing any statistics, but only on the basis of the maxim cited above, claimed as if "it is safe to say that out of 35 young people who graduated from gymnasiums and intermediate schools in 1897, hardly the half of them were the children of the voiskovoy class" (GARO. F. 46. Op. 1. D. 3282. L. 15).

However, such an exaggerating was necessary for the Don Colonel to prove: if one of the reasons for the impoverishment of the Cossacks was the low educational level of the Cossacks, then the government was solely responsible for this. A.G. Fateev complained, referring to the experience of the already closed Ust-Medveditsky gymnasium, that most of its graduates of Cossack origin "were not serving in the Don Army, despite their desire and efforts to devote their strength to the benefit of their native land" (GARO. F. 46 Op. 1. D. 3282. L. 15-150b). Indeed, it is seen from the tables cited by him, that of approximately 60 graduates of this gymnasium (information about whom it was possible to collect) only about 1/3 remained to serve in the Don (GARO. F. 46. Op. 1. D. 3282. L. 15-150b; 220b-23). Nevertheless, as the retired colonel admitted, there was no lack of people with higher education in the Don Host Land, but most of them were nonresidents (GARO. F. 46. Op. 1. D. 3282. L. 150b). A. Fateev did not even set the question of why allegedly "those Cossacks who want to devote their strength and power to the benefit of their native land" did not return to the Don Host Land after graduating from higher educational institutions. Meanwhile, this issue deserved special attention: for instance, in 1900 A.N. Kuropatkin, when personally visited a number of educational institutions of the Don, noted that the graduates of some of them, in principle, are oriented towards a career in St. Petersburg rather than at home (RGIA. F. 1263. Op. 4. 1901 D. 48. L. 83-84).

However, A.G. Fateev argued that it was precisely the lack of educated Cossacks that was one of the reasons for the decline in welfare in the Don, and that “in the economic sense, the ranks of the voiskovoy estate with a university education would be more useful” (GARO. F. 46. Op. 1. D. 3282. L. 150b). The retired colonel justified this assertion with several facts. First of all, he reminded that there are elective posts in the Don Host Land, but there is essentially no one to be selected at these positions: “For example, we can point out the composition of the justices of the peace of the Ust-Medveditsky district elected for the expiring three-year period. This elected structure consisted of: two medical officers, one technologist, one natural scientist and one who did not finish the course of the secondary school; in the upcoming congress of justices of the peace, a former povytchik\* of the deceased bailiff was elected, he did not get any education, but had only clerical service, thus, there are not a single magistrate with a law education”(GARO. F. 46. Op. 1. D. 3282.L. 16). Nevertheless, there were some pitfalls: lawyers consisted a half of the remaining graduates of the Ust-Medveditsky gymnasium (GARO. F. 46. Op. 1. D. 3282. L. 150b). Thus, the problem was not so much the lack of Cossacks with higher education as the fact that those who had it were in no hurry to occupy elected posts according to their specialty, preferring more profitable jobs. In addition, according to A.G. Fateev, also in non-elected posts Cossacks with higher education would be more useful than nonresidents, having a greater moral impact on local residents. “Indeed, to whom is it most natural to turn to for advice in all sectors of the economy, and especially in the field of rights, to a brother Cossack, uncle, nephew, even a matchmaker, if not to a relative who graduated from a higher education institution? It would be strange if the Cossack began to reveal his soul to another official, a stranger to him both by birth, and by education, and by family structure and by the local spirit itself”(GARO. F. 46. Op. 1. D. 3282. L. 16). This statement was also not indisputable: officials of non-voiskovoy origin accused Cossack officials of a peculiar understanding of their duties, to the extent that ordinary Cossacks were allowed to plunder voiskovoy equipment as “belonging to every Cossack” (Novitsky, 1991: 54). Accordingly, the moral influence of such officials on the Cossack masses could be far from unambiguous.

A.G. Fateev summarized his arguments as follows: “In order to increase the economic well-being of the Region, its own local educated people are needed, therefore, it is necessary to increase the number of secondary schools in the Don. <...>. In addition, to recruit service people in the Don Host Land who, as officials on the one hand and landowners on the other, will at the same time be useful zemstvo leaders and, thus, will have a comprehensive impact on mental, moral and economic development of the entire population, receiving greater trust and authority than officials who do not belong to the voiskovoy estate, who are not familiar with the national life, its spirit, customs and even local names of objects ”(GARO. F. 46. Op. 1. D. 3282. L. 16-160b). Although at first glance this conclusion may seem convincing, as we saw above, proving it, A.G. Fateev made a number of inaccuracies and distortions. He exaggerated the difficulty of getting an education for the Cossacks and diminished the opportunity for them to stay within the Region after getting secondary and higher education. In fact, the colonel wanted to create special conditions for the educated Cossacks, facilitating their career within the Don Host Land. It must be said, such ideas were traditional in the Don educated environment, and back in 1860 one of the local committees suggested that in the region “all positions in educational institutions should be replaced by school ranks of both genders, mainly from the Cossack estate” (Volvenko, 2014: 18). This idea was rejected, and the Minister of the Interior of the Russian Empire P.A. Valuev noted on its account that “there is not even a reservation made here, therefore, a direct conclusion is allowed on the advantage of the less capable, only if they belong to the Cossack estate over the more capable, if the latter, by origin from the natives of the Empire, are not suitable for this condition ”(Volvenko, 2014: 18).

The fact that the note by A.G. Fateev "On the causes of the economic decline of the population of the Don Host Land" was not mentioned in the later materials of the N.A. Maslakovets' commission can be attributed precisely to the similar pro-Cossacks position of its author: the retired colonel described mainly the well-known problems of Don education, and made obvious conclusions from them, but at the same time under the guise of these problems and conclusions tried to suggest N.A. Maslakovets idea about the need to create additional preferences in the Don Host Land for Cossacks who got secondary and higher education.

---

\* An outdated term used to call people in charge of court proceedings.

Evidence of the problems of Don education is proved by personally written by War Minister A.N. Kuropatkin at the beginning of 1899 "Summary to the general review of personal all-submitted reports of voiskovoy nakaznykh and nakaznykh atamans for 1897" (RGVIA. F. 330. Op. 61. D. 2109. L. 93) and "Conclusions of the Minister of War from the reports of voiskovoy nakaznykh and nakaznykh atamans for 1897" (RGVIA. F. 330. Op. 61. D. 2109. L. 96). In the first of these documents, two paragraphs are devoted to Don education, which we will give below. "Literacy in the Don <army> is declining. They ask for allowances from voiskovoy capitals. The amount of money goes to the equipment of the Cossacks. <...>. Explain on the Don region. In 1896, 46 schools were opened. In 1897 - 18. Among these 46 schools 35 were benefited from voiskovoy capitals" (RGVIA. F. 330. Op. 61. D. 2109. L. 95). Sketchy style of A.N. Kuropatkin makes it difficult to fully understand this text, but it is obvious that the situation with the education in the Don did not suit the War Minister. This is also evidenced by the fact that in the conclusion he included among the main goals of the Directorate General of the Cossack Troops "finding ways for sooner resolution of cases <...> to increase the level of education in the troops" (RGVIA. F. 330. Op. 61. D. 2109. L. 97ob).

N.A. Maslakovets' commission itself began its meetings on January 12, 1899 (Protocols, 1899: 1). Already at its second meeting, it was decided to consider in detail the question of "general and professional education in the Don Army"; a report on this topic had to be prepared by a group of M.S. Markov, S.V. Balabin, A.I. Ulyanov, A.D. Trailin and A.S. Yezhov (Protocols, 1899: 3). The most famous of these persons is M.S. Markov, Don leader of the nobility in 1892-1901 and one of the initiators of the creation of the N.A. Maslakovets' commission (Dontsy, 2003: 302-303). Well-educated (back in 1850 he graduated from Kharkov University as a lawyer), M.S. Markov once served as adjutant and government official for special assignments under four Don atamans M.G. Khomutov, P.Kh. Grabbe, A.L. Potapov and M.I. Chertkov (Dontsy, 2003: 301-302). His career was in the era of the Great Reforms, and in 1875 M.S. Markov resigned relatively young, a little older than forty years, with the rank of colonel, due to the need to manage the vast estates inherited (Dontsy, 2003: 302). He acquired great authority among the Don nobility, and held the post of the leader for three terms. It is interesting, that the noble assembly persuaded him to remain in the fourth term even (Dontsy, 2003: 303). Unfortunately, special biographical studies about M.S. Markov has not yet been written, apart from a small essay in the famous collection "Dontsy of the 19th century" (Dontsy, 2003: 301-303). The authors of this collection, who personally knew the leader of the nobility, considered the goals of his social activity "to renew the Don, eliminate its grave needs, develop institutions favorable to its moral and material well-being, and achieve the possible well-being that the Don land was deprived of" (Dontsy, 2003: 303). M.S. Markov was chosen to the N.A. Maslakovets' commission by the nobility of Cherkasy district (OR NLR. F. 1055. Unit. 18. 18. L. 3). It is significant that such an authoritative public figure decided to participate in the drafting of a report on education in the Don, rather than reports on the economy or military service of the Cossacks.

The other two co-authors of the education report, Major General S.V. Balabin and A.D. Trailin, were elected to the N.A. Maslakovets' Commission from the noblemen of 1 and 2 Don districts respectively (OR NLR. F. 1055. Unit. 18. 18. L. 3). According to the extreme scarcity of information about them, they belonged to the number of Don public figures of the second plan, respected in their districts, but almost unknown outside the Don Host Land. There is a small passage in the book of the local amateur historian D.M. Shumakov "Orlov Bakhtin Cadet Corps" about S.V. Balabin. Regarding to it, S.V. Balabin had higher education not a civilian but military one (he graduated from the Mikhailovsky Artillery School), and, like M.S. Markov, in the liberal 1870s held positions in the Don Host Land's administration under M.I. Chertkov, and then served in the elections in the noble assembly, and even was elected as the leader of the noblemen of the 1st Don district (Shumakov, 2017: 32). There is even less information about A.D. Trailin. However, on the website named "Art and Culture of the Russians Abroad", compiled by the D.S. Likhachev's Foundation, it is mentioned that Major General A.D. Trailin was the father of the Cossack emigrant composer S.A. Trailin (Leykind et al., B.G.). A titular adviser A.S. Yezhov was a figure of the same scale, appointed to the N.A. Maslakovets' commission by the Regional Administrative Committee on Zemstvo Affairs (RL NLR. F. 1055. Unit. 18. L. 3). He was an active member of the Don Society of Agriculture, and in 1905-1910 served as chairman of this society (Savelyev, 1913: 33-34). During the years of its chairmanship, the "Society" supported the War Ministry in opening agricultural

courses and schools in the Don, and in general did a lot to popularize agronomic knowledge among the Cossacks (Savelyev, 1913: 33). We didn't find any information only about voiskovoy foreman A.I. Ulyanov, delegated to the N.A. Maslakovets' Commission by Don Host Land's headquarters (OR NLR. F. 1055. Unit. 18. L. 3). Probably, this was a fairly ordinary officer, possessing information about the affairs on the Don, but not noted for any vigorous social activity.

Thus, the N.A. Maslakovets' Commission was formed by a representative group of people to prepare a report on the situation in Don education. It included the current leader of the nobility, two generals (apparently retired), a well-known public figure (a member of the local agricultural society) and an official of the Don Host Land's headquarters. At least two of them themselves had higher education. Given the heterogeneity of all these individuals, one could expect that the report they compiled would turn out to be fairly objective and would not contain such obvious distortions and stretches as A.G. Fateev's note. However, disputes about Don education began even before the report was prepared.

The impetus for the beginning of these disputes were the words of N.A. Maslakovets himself, who stated at a meeting on April 6, 1899 that, although he recognizes factors leading to the impoverishment of the Cossacks, such as a decrease in their allotments and an increase in the severity of the Cossack service, "the purpose of establishing this commission and the task of its activity would be far from being fulfilled, <...> if, during its studies, it would have lost the third factor in the life of the Cossack population, which is the personal energy and perseverance of the local population in the field of its agricultural activity" (Protocols, 1899: 135-136). It was in response to this phrase that the representative of the hopper nobles P.G. Mordvintsev (OR NLR. F. 1055. Unit of art. 18. L. 3) said the words that we quoted at the beginning of this article. And now it's time to dwell on them in more detail.

P.G. Mordvintsev in general was perhaps the most mysterious member of the N.A. Maslakovets' commission. In it lists he is mentioned as a "nobleman" (OR NLR. F. 1055. Unit of art. 18. L. 3), that is, obviously, he did not serve as an officer or government official. We did not find information about his social activities. Nevertheless, it was he who was appointed rapporteur on a key issue on the economic situation of the Don Cossacks (Protocols, 1899: 2). Moreover, P.G. Mordvintsev did not just argue with the chairman of the commission, but also prepared a detailed note to him entitled "Reply of the representative of the noblemen of the Khopersky district P.G. Mordvintsev to "considerations" of N. A. Maslakovets" (Protocols, 1899: 173-177). Apart from P.G. Mordvintsev, there was only one member of the commission, A.A. Donetsky, who dared persistently to object N.A. Maslakovets (Protocols, 1899: 156-161), but in his case this was understandable: A.A. Donetsky was a figure of scale M.S. Markov and later represented the Don landowners in the State Council (Figures, 1906: 24). In general, it seems that no matter who P.G. Mordvintsev was, his authority among the Don Cossacks was very great.

Objecting N.A. Maslakovets, P.G. Mordvintsev accused him that the concept of "energy" was interpreted by the chairman of the commission too vaguely (Protocols, 1899: 173). He himself argued that the personal energy of any person should be considered as a combination of the energies of the "muscular-labor" and "neuro-brain" energies (Protocols, 1899: 173). At the same time, the possibilities of developing "muscular-labor energy" P.G. Mordvintsev considered "extremely cramped"; the future, in his opinion, was "neuromuscular energy", "infinite, but determined by a single ratio of the sum of knowledge, general culture" (Protocols, 1899: 173).

It is clear, the terminology used by the Don noble was very primitive, but hiding behind it were quite new ideas for the Don in the second half of the 19th century. In fact, by an increase of "muscular-labor energy" he meant the extensive development of the economy, and by an increase of "neuromuscular energy" – intensive one. P.G. Mordvintsev emphasized that the extensive development of agriculture in the Don can not be denied: in the Don Host Land over the past 20 years, the area for planting for a Cossack family has increased from 5 tithes of land to 12 (Protocols, 1899: 173). However, intensive development was not seen. According to P.G. Mordvintsev: "In the considerations of Mr. Chairman, there is a desire to justify the conclusion with digital data that a large amount of land allotment is not a necessary condition for greater wealth of the agricultural population. <...>. In principle, the validity of such a statement cannot be denied: evidence of its correctness can be found in the enormous productivity of the fields of the Englishman, Danish, Chinese and others. But this approach is true only if, according to the law set forth by us, the productive energy of a person is increased by the corresponding and necessary amount of



knowledge, and therefore this situation cannot be applied to Cossacks” ([Protocols, 1899: 174](#)). And, finishing the discussion about education on the Don and the influence of the level of this education on the welfare of Cossack farms, P.G. Mordvintsev came to different conclusions than A.G. Fateev, and at a much higher level of argumentation of his theses. P.G. Mordvintsev also admitted that the lack of education of the Cossacks impedes the development of the Don economy, and also blamed it solely on the government. “The system when secondary schools are getting closed, and instead, schools that serve to satisfy the needs of the same military service are being opened, this system must take upon itself all the responsibility for only negatively reflecting it in life” ([Minutes, 1899: 176](#)). However, he believed that Don needed not a few "local educated activists people" trained in gymnasiums and intermediate schools, but a general increase in the level of education of ordinary Cossacks, both in "literacy schools" and, especially, in "special schools" so that the Cossacks were able to harvest the same crops from their plots as the "British, Danes, Chinese."

N.A. Maslakovets did not even try to argue with P.G. Mordvintsev. Perhaps the matter was not only the convincingness of the latter's statements, but that his position as a whole turned out to be close to the chairman of the commission, who, being an Orenburg ataman, even in conditions of severe hunger, did not allow closing schools and demanded their material support from the local authorities ([OR NLR. F. 1055. D. 104. L. 10-100b](#)). It is quite possible that the general understood that the Don Host Land administration was really to be blamed for the problems of Don education, and it did not pay enough attention to it (he himself at the end of 1880 in the Orenburg region personally demanded that the Cossack boys go to school and attend schools without permission, allowing use coercive measures for this ([RNLR. F. 1055. D. 104. L. 10](#)). Therefore, the above statements of P.G. Mordvintsev were subsequently considered by the majority of the N.A. Maslakovets' Commission as unconditionally true and direct relationship between the level of education and the development of the economy was not questioning by its members (with one exception, which we will write about below).

A detailed report, or rather, reports on Don education, were prepared by M.S. Markov, S.V. Balabin, A.I. Ulyanov, A.D. Trailin and A.S. Yezhov only by the second half of May 1899. Obviously, to simplify the perception of information, the students prepared three reports: on public schools in the Don, on the dissemination of special knowledge in the Cossack environment, and on military-craft schools. All of them were heard at meetings of the commission on May 20 and 21, 1899. The first two reports were read by A.S. Yezhov, and the last one – by A.I. Ulyanov. Such a choice of the persons who presented the reports was apparently determined by their official position: recalling that A.S. Yezhov represented Zemstvo in the N.A. Maslakovets' Commission, and A.I. Ulyanov represented the Don Host Land's headquarters.

In the “Report on public schools in Cossack settlements”, the authors explicitly questioned “the question of achieving the general literacy of the voiskovoy estate” ([Protocols, 1899: 251](#)). In their opinion, the “general public education” for the Don Cossacks was “desirable and necessary both in the types of religious and moral education of the younger generation and the development of its spiritual and mental strengths, and in the types of success that the commission outlined for a number of events to disseminate between the Cossack population special knowledge of crafts, agricultural knowledge, etc.” ([Protocols, 1899: 251](#)). In other words, the authors of the report (in full accordance with the opinion of P.G. Mordvintsev) believed that without the spread of universal education in the Don it would not be possible to ensure the proper growth of the economy, since the increase in "neuromuscular energy", the intensive development of agriculture, would remain inaccessible to illiterate Cossacks. However, unlike P.G. Mordvintsev and A.G. Fateev, they not only did not allow negative comments to the Don Host Land administration, but also agreed to consider that, on the whole, the Don Host Land, even if it stayed behind the neighboring provinces in the development of education, this lag was not too significant ([Protocols, 1899: 251](#)). Instead, the authors of the Report decided that in order to achieve universal literacy, at least there is a need to open another 453 small schools in sparsely populated areas for the male population, which will cost about 274,000 rubles ([Protocols, 1899: 252](#)). Unfortunately, due to the "general impoverishment of the Cossack population", it was impossible to think that this amount would be taken from the societies of the Cossack villages, and it was supposed to be asked from the Don Host Land administration ([Protocols, 1899: 252](#)). Thus, in the final analysis, the main problem for the development of Don education turned out to be the need to increase funding for Cossack villages from above. The authors of the Report considered the search for internal resources, resources of



the Cossacks to achieve even the most important goal of ensuring universal literacy of the Don Cossacks, impossible. Meanwhile, the Ministry of Finance of the Russian Empire in April 1899 announced that it would oppose the allocation of new subsidies to the Don army, since these subsidies turn out to be “the replenishment of deficiencies in the welfare of the Cossacks by the rest of the population of the Empire” (OR RNB. F. 1055. Ed. xr. 59. L. 4). Significantly less interesting for us is the "Report on the dissemination of technical and craft knowledge among the Cossack population, on general educational institutions in the Don Host Land". It actually lacks a constructive part. Although, its authors wrote that “according to the goals set by the commission for raising the culture of the voiskovoy population of the region, a contingent of educated people equipped with knowledge of various specialties is as necessary for districts as general literacy of the population” (Protocols, 1899: 253). However, they almost did not offer any specifics in this direction. Perhaps the most interesting of the ideas expressed by them was the idea of giving special benefits for serving military service by graduates of craft schools, provided that in return they will replace the positions of craftsmen at the villages (Protocols, 1899: 252-253). It was supposed that in this way two problems could be solved at once: on the one hand, it would be possible to develop the craft in the villages by the graduates of these schools, and, on the other, these graduates would not give up the profession for the sake of other occupations (Protocols, 1899: 252-253). Unfortunately, the matter did not get to more definite proposals in the Report, and neither the number of alleged posts of the village craftsmen, nor their responsibilities to the Don army were even discussed.

Finally, the “Report on military craft schools in the Don region by Ulyanov”, according to its name, was personally prepared by A.I. Ulyanov. In contrast to the collective that prepared the previous reports and included, as we recall, well-known Don public figures, the officer of the Don Host Land’s headquarters chose to avoid the generalizations and declarative statements. Basically, he provided statistical information that is not relevant to the topic of our article. Nevertheless, his report clearly showed how expensive it was to train specific specialists in the necessary army specialties: according to this, in 1896-1898 the training of a Cossack artisan for combat units cost the army about 1,000 rubles (Protocols, 1899: 254). As we can see, he returned to the key question that without appropriate funding all projects for the development of Don education were doomed.

Unfortunately, the details of the discussion of the three reports described above were not recorded. The least controversy, apparently, was caused by the "Report on public schools in Cossack settlements." A majority of 12 votes to 2 N.A. Maslakovets’ Commission adopted a resolution “not only on desirability, but also on the need to find measures to meet the growing needs for universal education of the Cossack population” (Protocols, 1899: 258). Five proposals for the dissemination of craft and technical knowledge in the Cossack environment were more ambiguous: some of them were approved unanimously in general, and others by a relatively small majority of 9 against 6 votes (Protocols, 1899: 258-259). It was proposed to improve funding for craft schools in the region; to review their programs, paying more attention to crafts useful in Cossack life; to leave only 2 military artisan schools, transforming the rest of these institutions into civilian ones; to prohibit the collecting in these schools the equipment for Cossacks who was going to serve (obviously it was made to make students concentrate on the development of civilian crafts); and, finally, to allow Cossacks who graduated from the course of craft schools to enroll in a merchant society, which gives exemption from service by the dowry (Protocols, 1899: 258-259). But worst of all by officials was met the decision on the need to develop not only primary and special, but also general education in the Don: although the N.A. Maslakovets’ Commission recognized the opening of 2 gymnasiums (male and female), an intermediate school, several other gymnasiums and even a new “agricultural-industrial educational institution”, this initiative has passed by a majority of only one vote, 8 votes to 7 (Protocols, 1899: 259).

As we see the members of the N.A. Maslakovets’ Commission considered the development of primary and technical education in the Don as “not only desirable, but also necessary”. In their opinion, only on condition of universal literacy of at least male population all their proposals in other areas could be reached. The development of general and higher education, to which A.G. Fateev paid so much attention, was evaluated by them much more ambiguously, and was not included in the number of priorities. Because of P.G. Mordvintsev rational and modern attitude to education prevailed in the commission not as an end in itself, but as a necessary condition for the development of “neuromuscular energy” in a Cossack environment.

One of the “special opinions”, submitted by those disagreeing with the majority of the members of the N.A. Maslakovets’ Commission, was made in this way. It belonged to another well-known Don public figure, Kh.I. Popov. He, unlike most representatives of the Don elite, came from a simple Cossack family, and did not receive any education (Dontsy, 2003: 408). Having made a career due to his own talent and hard work, Kh.I. Popov is still known as the founder of the Don Museum (now the Novocherkassk Museum of the History of the Don Cossacks) (Dontsy, 2003: 410). Already in 1860 he became a prominent figure in the camp of the Don Conservatives, or, as they were usually called, “Cossackomani” (Volvenko, 2015: 199). In 1863, in one of his articles, a novice public figure demanded that the government to “increase funds for education” and even to “open a university” in the Don (Volvenko, 2015: 199). In the future, the political views of Kh.I. Popov, if they were displaced, only further to the right, and at the beginning of the 20th century he joined the Black Hundreds (Kornienko, 2013: 41-43). Don conservative got into the mainly liberal N.A. Maslakovets’ Commission under curious circumstances: two people, alternately elected to the commission from the Ust-Medveditsky nobility, eventually refused to leave for Novocherkassk, citing illness, and on February 7, 1899 in the midst of the commission’s work, Kh.I. Popov was finally elected as its member from the Ust-Medvedsky nobility (GARO. F. 410. Op. 1. D. 682. L. 149).

As a matter of principle, the Don conservative agreed with the opinion of the liberal majority of the N.A. Maslakovets’ Commission on the need for universal primary education. However, he considered it unacceptable that the commission clearly preferred schools of the Ministry of Education over diocesan schools. Kh.I. Popov, on the contrary, wrote about the latter: “The relatively recent existence of them for only fifteen years has already shown such results that give them the right to be on an equal footing with the schools of the Ministry of Education” (Protocols, 1899: 259). And, given the ever-increasing role of these schools and their extremely constrained financial situation, Kh.I. Popov called for providing them with at least minimal assistance from the voiskovoy budget (Protocols, 1899: 260). In our opinion, in fact, the Don conservative was right, but the problem once again rested on the impoverishment of the Cossacks, who, without additional fees, could not cope with the burden of their duties, and the reluctance of the Ministry of Finance to “replenish the shortcomings in the welfare of the Cossacks,” allocating additional subsidies to the Donskoy Army. There was no place to take money from to support church schools in the Don, and perhaps most of the N.A. Maslakovets’ commission did not support Kh.I. Popov precisely because of the apparent impracticability of the proposals of the latter; however, it cannot be ruled out that Don liberals were closer to schools that are more independent from the church.

The second special opinion was filed by voiskovoy foreman I.G. Folimonov, who was also not included in the initial composition of the N.A. Maslakovets’ Commission and included in it already in the course of the meetings (OR NLR. F. 1055. Unit. 18. L. 3-30b). Unlike all the persons considered by us above, he represented in the commission not some administrative body, or even the nobility of one of the Don districts, but the Cossack village (stanitsa) societies (Protocols, 1899: 243). Apparently, he, like A.I. Ulyanov and P.G. Mordvintsev was not an active public figure, and we could not find information about him. Probably I.G. Folimonov was one of those who voted against the proposals of the majority of the N.A. Maslakovets’ Commission. He refused to see the postulated by P.G. Mordvintsev relationship between the level of education and the development of the economy, and therefore considered the existing school curricula to be quite sufficient. Let us cite his words on this point: “Teaching, according to the current program, is enough - besides this, residents do not impose secondary requirements on schools, the population appreciates a beautiful letter, fluent reading, perhaps the ability to write a receipt, singing in church, and so on. No agricultural occupations, different types of manual labor are required from the school, and should not be required because children of 8-9 years old go to elementary schools, and graduate being 11-12 years old. According to the calendar, there are 180 school days per year, and there are 540 per 3 years, out of this number, children miss a lot due to various circumstances. With such a limited time, the existing program is hardly implemented. What efforts are required to teach where to put “yat”<sup>\*</sup>. The school should be comprehensive, let the children develop mentally and ennoble morally.

---

\* The latter in Russian alphabet.

An elementary school should set its own task so that a person, upon leaving it, strives to learn and improve all his life” (Protocols, 1899: 261-262).

In a sense, a conceptual similarity can be seen between the texts of A.G. Fateev and I.G. Folimonov. The authors declared the Cossacks' formal desire for education (we omitted the corresponding section from the “special opinion” of I.G. Folimonov, since it does not contain anything fundamentally new (Protocols, 1899: 261), however, the main text referred to certain circumstances (“different accidents”) that prevent them from organizing normal and regular school attendance by children. Even worse, instead of the clear relationship between the economic development and the skills acquired in schools that P.G. Mordvintsev and the majority of the N.A. Maslakovets’ Commission insisted on, I.G. Folimonov, like A.G. Fateev, offered an extremely vague statement about the “usefulness” of education, while education, in its interpretation, was supposed to give Cossacks only status but unnecessary skills for the economy, such as beautiful handwriting spelling and even church singing.

It is not surprising that I.G. Folimonov’s proposals in the field of education were equally bizarre. He did not indicate what amounts would be required to ensure universal education in the Don, and, obviously, hoped to achieve it “free” for the Cossacks. We take this word in quotation marks, because we have in mind the specific Cossack idea of expenses, which N. A. Maslakovets described this way: “He feels the household expenses so much, since he seems to be paid by the owner, to satisfy a particular need, in cash or their corresponding obligations” (RNLR. F. 1055. Unit XR 22. L. 2ob). So, I.G. Folimonov proposed to build schools from the Don Host Land’s forests; they should be engaged in the construction and dispensation of stanitsa societies; he even proposed to buy textbooks for the children of poor Cossacks with the help of trustees (Minutes, 1899: 262). In addition, he proposed transferring all schools to the Russian Orthodox Church, and thus saving 67,600 rubles. salaries to secular teachers (Protocols, 1899: 262). There was only small problem: instead of increasing spending on education, I.G. Folimonov proposed to increase the cost of maintaining the Don clergy in general, so that it would not only commit itself to teaching in schools, but would cease to demand money from the Cossacks for spiritual needs. The necessary amounts significantly exceeded the estimated costs of the treasury to achieve universal literacy in the Don: they should have been at least 442,000 rubles (Protocols, 1899: 263). It is not surprising that not only the liberal majority of the N.A. Maslakovets’ Commission, but also Kh.I. Popov did not support I.G. Folimonov.

#### **4. Conclusion**

We have clearly seen that the materials of the N.A. Maslakovets’ Commission contained a number of expert opinions on the current state of Don education on the eve of the 20th century and on its impact on the region’s economy. Among the authors of these opinions, on the one hand, are famous personalities: War Minister A.N. Kuropatkin, leader of the Don nobility M.S. Markov, the largest Don historian Kh.I. Popov, and on the other - completely forgotten and unknown figures, like retired Colonel A.G. Fateev or voiskovoy foreman I.G. Folimonov. Nevertheless, all these opinions can be divided into three groups, depending on the basic concept presented in them.

The most popular and prevailing in the N.A. Maslakovets’ Commission concept can be considered to be conditionally called “liberal,” in accordance with the general ideological direction of the commission. Initially, it was proposed by P.G. Mordvintsev, and then developed by preparing a report on the education M.S. Markov, S.V. Balabin, A.I. Ulyanov, A.D. Trailin and A.S. Yezhov. In accordance with this concept, education was needed by the Cossacks for the development of “neuromuscular energy”, intensive methods of farming, allowing to sharply increase the yield from existing Cossack allotments. The first step towards achieving this goal was to ensure universal primary education, at least among male Cossacks, and to expand the network of craft schools in the Don, which should have been given a more practical focus. From our point of view, the main provisions of the liberal concept of the development of Don education were quite reasonable and logical, but the problem was that their implementation would require hundreds of thousands of rubles, which the members of the N. A. Maslakovets’ Commission expected to take from voiskovoy sums. However, the Ministry of Finance was negative about the increase in spending on the Don Cossacks, which made it difficult to obtain funding for Cossack schools from above. Going forward, we note that the N.A. Maslakovets’ Commission, in general, considered it possible to solve many Cossack problems through measures requiring government funding, and its final reform project

included an increase in annual government spending on the Don Army by 1,414,591 rubles. (Maslakovets, 1899: 119). However, A.N. Kuropatkin managed to increase the annual government subsidies to the Don Army by only 538,000 rubles (RGIA. F. 1263. Op. 4. 1901 D. 48. L. 4). This money was directed mainly at solving the highest priority goal of the War Minister, at direct financial support for the Cossacks coming to the service (RGIA. F. 1263. Op. 4. 1901 D. 48. L. 57), which, of course, made impossible the implementation of the liberal concept of development of Don education.

The opposite, "reactionary" concept in the framework of the activities of the N.A. Maslakovets' Commission turned out to be essentially marginal. It was represented only by A.G. Fateev in a private letter to N.A. Maslakovets and I.G. Folimonov in the "special opinion" rejected by the commission. Within the framework of this concept, the connection between the development of education in the Don and the problems of the Don economy was postulated in a much more general form, without clear specifics. It was proposed to "improve" the education system, based on the rather conflicting desires of the Cossacks themselves. So, A.G. Fateev argued that the government should specifically "attract" people of voiskovoy estate of higher and secondary education to serve as Don officials, giving them some privileges in comparison with non-voiskovoy officials; I.G. Folimonov went even further, demanding that all elementary schools on the territory of the Don Host Land to be transferred to the church and that no special economic skills should be introduced into them, since the Cossacks themselves find the existing programs "sufficient". We note, that this concept, as well as the liberal one, came from below, from a retired official and a member of the N.A. Maslakovets' Commission elected from the Cossack villages. It shows well why the development of education in the Don was faced with difficulties not only through the fault of the government: the most conservative-minded part of the Cossacks put forward extremely contradictory and non-modern requirements for schools.

Finally, the latter concept can be called "conservative," since it was mainly promoted by government officials (A.N. Kuropatkin, A.I. Ulyanov) and Kh.I. Popov. In our article, we paid little attention to the texts of these persons, since their authors were interested not so much in the Don education system as a whole and its impact on the well-being of Cossack farms, but in the obvious organizational problems of this system. Therefore, these texts are most valuable statistically (with the exception of the works of A.N. Kuropatkin) and contain many specific figures characterizing the situation of Don schools. However, their authors did not make any generalizations and far-reaching conclusions. And the concept contained in their works can be reduced to the fact that, first of all, it is necessary to solve the obvious and most acute problems in the system of Don education. In particular, Kh.I. Popov outlined the question of the need to support church schools, which found themselves in dire financial difficulties due to the inattention of secular authorities; A.I. Ulyanov proposed reforming the military-art schools, based on the experience gained over the last decade of their work. Given the lack of funding for the implementation of the liberal concept of the development of Don education and the obvious archaism of the reactionary concept, it was the conservative concept of solving current problems without far-reaching plans that could be most in demand. However, the materials of the N.A. Maslakovets' Commission show its main weakness: within its framework, education was supposed to be developed insufficiently systematically, with attention to details, but without due attention to the whole.

Our article would not be complete if we had not at least briefly traced the further development of the problem. Unfortunately, the War Ministry was distrustful of the findings of the N.A. Maslakovets' Commission and even sent its final report for discussion to the combat commanders of the Russian army (RGVIA. F. 330. Op. 61. D. 2109. L. 23). In 1900, personally A.N. Kuropatkin visited the Don Army to find out the reasons for the impoverishment of the Cossacks, but they no longer raised the question of the relationship between the level of development of education in the Cossack environment and the welfare of Cossack farms. Moreover, the minister was greatly impressed by the stories of some old Cossacks about the dangers of the existing educational system, close to the peculiar statements of A.G. Fateev and I.G. Folimonov. The most telling situation occurred in the Mikhailovskaya stanitsa, where a certain "experienced Cossack" complained to the minister who believed him that literate girls who had graduated from the local school "shy away from hard work, and ordinary Cossacks are afraid to marry them" (RGIA. F. 1263. Op. 4. 1901 D. 48. L. 44ob). And, alas, A.N. Kuropatkin raised the question not about the fact that the Don Host Land was ready for universal primary education, but about the



fact that it was the schools that caused the Cossacks to “think of themselves as scientists” and “do not want to do the black work” (RGIA. F. 1263. Op. 4. 1901 D. 48. L. 55). In fact, in comparison with these statements by the War Minister, even the ideas of A.G. Fateev and I.G. Folimonov were progressive. In any case, the first of them at least briefly mentioned the need to “increase the number of elementary schools in farms” (GARO. F. 46. Op. 1. D. 3282. L. 17), and the second generally considered useful “the introduction of a urgent universal literacy”, albeit within the framework of his highly specific education system (Protocols, 1899: 262). But A.N. Kuropatkin rejected all opinions expressed in the framework of the activities of the N.A. Maslakovets’ Commission, and, referring to reactionary statements about the harm from the existing education system, he decided not to reform it, but simply not expand it, in the hope that illiterate Cossacks are better capable of “black work”. Perhaps this was one of the reasons why the economic problems of the Cossacks were not resolved until 1917.

## 5. Acknowledgements

The reported study was funded by RFBR (Russian Foundation for Basic Research) according to the research project № 18-39-00009.

## References

- Cherkasov et al., 2019 – Cherkasov A.A., Bratanovskii S.N., Koroleva L.A., Zimovets L.G. (2019). Development of school education in the Vologda governorate (1725-1917). Part 1. *European Journal of Contemporary Education*. 8(1): 208-214.
- Cherkasov et al., 2019a – Cherkasov A.A., Bratanovskii S.N., Koroleva L.A., Zimovets L.G. (2019). Development of school education in the Vologda governorate (1725-1917). Part 2. *European Journal of Contemporary Education*. 8(2): 418-424.
- Deyateli, 1906 – Deyateli Rossii (1906) [Figures: Russian Figures (1906)]. SPb, 340 p. [in Russian]
- Dontsy, 2003 – Dontsy XIX veka [Dontsy: Dontsy of the XIX century]. Rostov-na-Donu, 599 p. [in Russian]
- GARO – Gosudarstvennyi arkhiv Rostovskoi oblasti [State archive of the Rostov region]
- Kornienko, 2013 – Kornienko, B. (2013). Pravyi Don: kazaki i ideologiya nacionalizma (1909-1914) [Right Don: Cossacks and the ideology of nationalism (1909-1914)]. SPb, 232 p. [in Russian]
- Leykind et al. – Leykind O., Makhrov K., Severyukhin D., Trailin S. // <https://artz.ru/articles/1804786866/index.html> [in Russian]
- Magsumov et al., 2018 – Magsumov T.A., Artemova S.F., Balanyuk L.L. (2018). Regional problems of public schools in the Russian Empire in 1869-1878 (using an example of the Vyatka Province). *European Journal of Contemporary Education*, 2018, 7(2): 420-427.
- Maslakovets, 1899 – Maslakovets, N.A. (1899). O zanyatiyakh vysochaishe uchrezhdennoi 16-go iyunya 1898 goda Komissii v oblasti voiska Donskogo i o dostignutykh eyu rezul'tatakh: Doklad sostoyashchego v rasporyazhenii voennogo ministra General'nogo shtaba general-leitenanta Maslakovtza 23 avg. 1899 g. [About the studies of the highest commission established in the field of the Don Army on June 16, 1898 and the results achieved by it: Report of the General Minister of Staff General-Staff Lieutenant-General Maslakovets at his disposal 23 aug. 1899]. SPb., 123 p. [in Russian]
- Molchanova et al., 2019 – Molchanova V.S., Balanyuk L.L., Vidishcheva E.V., Potapova I.I. (2019). The Development of Primary Education on the Cossack Territories in 1803–1917 years (on the Example of the Kuban Region). Part 1. *Bylye Gody*. 53(3): 1049-1058.
- Novitsky, 1991 – Novitsky, V.D. (1991). Iz vospominanii zhandarma [From the memories of a gendarme]. M, 250 p. [in Russian]
- OR RNB – Otdel rukopisei Rossiiskoi nacional'noi biblioteki [The section of manuscripts of the Russian national library]. [in Russian]
- Peretyat'ko, 2018 – Peretyat'ko, A.Yu. (2018). Liberal protiv konservatora: protivostoyanie A.A. Donetskogo i N.A. Maslakovtza, ego ideinie predposylki i rol' v istorii Donskogo kraya [Liberal vs Conservative: the confrontation between A.A. Donetsky and N.A. Maslakovets, its ideological background and role in the history of Don region]. Nauchnaya misl' Kavkaza. №3: pp. 33-40 [in Russian]



[Protokoly..., 1899](#) – Protokoly Komissii po issledovaniyu nuzhd kazach'ego naseleniya Donskoi oblasti [Protocols of the Commission for the study of the needs of the Cossack population of the Don region]. B.m., 1899. 289 p. [in Russian]

[RGIA](#) – Rossiiskiy gosudarstvenii istoricheskii arkhiv [Russian state historical archive].

[RGVIA](#) – Rossiiskiy gosudarstvennii voenno-istorichesky arkhiv [Russian state military-historical archive].

[Savel'ev, 1913](#) – *Savel'ev, E.P.* (1913). Istoricheskii ocherk o zhizni i deyatel'nosti Donskogo obschestva sel'skogo khozyaistva za 25 let. 18 yanv. 1889-18 yanv. 1914 [Historical essay on the life and activity of the Don agriculture society for 25 years. 18 January 1889-18 January 1914]. Novocherkassk. 49 p. [in Russian]

[Shevchenko et al., 2016](#) – *Shevchenko N.A., Vidishcheva E.V., Emelyanova O.V.* (2016). The establishment of the system of public education in the Caucasus (1802-1917 years): The characteristic features. *Bylye Gody*. 40(2): 363-372.

[Shumakov, 2017](#) – *Shumakov, D.M.* (2017). Orlovsky Bakhtina kadetsky korpus [Orlov Bakhtin Cadet Corps]. B.m. 67 p. [in Russian]

[Skorik, 2014](#) – *Skorik, A.P.* (2014). Problemy i protivorechiya tradicionnogo byta donskikh kazakov na rubezhe XIX-XX vv. (o resul'tatakh raboty komissii N.A. Maslakovtza) [Problems and contradictions of the traditional life of Don Cossacks at the turn of the XIX and XX centuries (about the results of the N.A. Maslakovets' Commission work)]. *Modernizatsiya polietnichnogo makroregiona i sopredel'nykh gosudarstv: opyt, problemy, scenariy razvitiya*. Rostov-na-Donu. Pp. 268-273. [in Russian]

[Volvnenko, 2014](#) – *Volvnenko, A.A.* (2014). Donskoe kazachestvo v pravitel'svennoi politike epokhi 'Velikikh reform'. (1860-1870) [Don Cossacks in governmental policy of the 'Great Reforms' epoch. (1860-1870)]. *Izvestiya Samarskogo centra Rossiyskoy akademii nauk*. T. 16. №3, pp. 12-20. [in Russian]

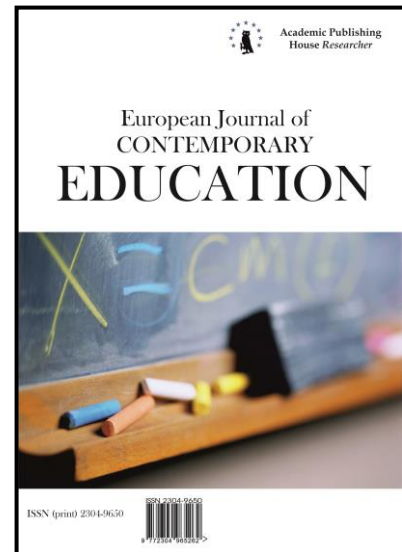
[Volvenko, 2015](#) – *Volvenko A.A.* (2015). Kazakomanstvo. Don case (the 1860th). Part III. *Russkaya Starina*. 15(3): 194-207.

[Volvnenko, 2017](#) – *Volvnenko, A.A.* (2017). Ocherki po istorii donskogo kazachestva v pozdneimperskii period (II pol.XIX – nach. XX vv.) [Essays on the history of the Don Cossacks in the late imperial period (II half XIX – early XX centuries)]. Rostov-na-Donu, 226 p. [in Russian]



Copyright © 2019 by Academic Publishing House Researcher s.r.o.  
All rights reserved.  
Published in the Slovak Republic  
European Journal of Contemporary Education  
E-ISSN 2305-6746  
2019, 8(4): 964-972  
DOI: 10.13187/ejced.2019.4.964  
[www.ejournal1.com](http://www.ejournal1.com)

**WARNING!** Article copyright. Copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of the violation of the author(s) rights will be pursued on the basis of international legislation. Using the hyperlinks to the article is not considered a violation of copyright.



## The History of the Public Education System in Vilna Governorate (the Second Half of the 19th and the Early 20th Centuries). Part 2

Olga V. Natolochnaya <sup>a, b, \*</sup>, Bella A. Bulgarova <sup>c</sup>, Yulia A. Voropaeva <sup>c</sup>, Aleksandr N. Volkov <sup>d</sup>

<sup>a</sup> International Network Center for Fundamental and Applied Research, Washington, USA

<sup>b</sup> Volgograd State University, Volgograd, Russian Federation

<sup>c</sup> RUDN University, Moscow, Russian Federation

<sup>d</sup> Sochi State University, Sochi, Russian Federation

### Abstract

This paper examines the public education system in Vilna Governorate in the period between the second half of the 19<sup>th</sup> century and the early 20<sup>th</sup> century. This part of the paper analyzes the system's development in the period 1880–1908.

In putting this work together, the authors drew upon a pool of statistical data published in Memorandum Books for Vilna Governorate in the period from 1880 to 1913, as well as an array of statistical data on the Vilna Educational District published in the scholarly journal *Zhurnal Ministerstva Narodnogo Prosveshcheniya*. The authors also made use of certain regulatory documents.

The authors conclude by noting that during the period 1880–1908 the region witnessed a gradual increase in the number of educational institutions and students (a definite rise of at least three times). Estates-wise, the period was characterized by a sharp increase in students from rural areas and a drop in those who were the children of nobles and functionaries. In terms of students' religious affiliation, the way was led by Orthodox Christians, followed by Catholics and then Jews.

**Keywords:** Vilna Governorate, public education system, primary schools, secondary education.

### 1. Introduction

Vilna Governorate was an administrative-territorial unit in the Russian Empire, with its capital being the city of Vilna (present-day Vilnius). At present, most of the area is part of Belarus, with the rest of it, including the capital, forming part of Lithuania. This paper examines the

---

\* Corresponding author

E-mail addresses: [incfar.natolochnaya@gmail.com](mailto:incfar.natolochnaya@gmail.com) (O.V. Natolochnaya),  
[bulgarova-ba@rudn.ru](mailto:bulgarova-ba@rudn.ru) (B.A. Bulgarova)

development of the public education system in Vilna Governorate in the period 1880–1908. The year 1908 was chosen as the upper limit for a reason – it is during that specific period that the Russian government introduced several bills aimed at instituting compulsory primary education in Russia.

## **2. Materials and methods**

In putting this work together, the authors drew upon a pool of statistical data published in Memorandum Books for Vilna Governorate in the period from 1880 to 1913, as well as an array of statistical data on the Vilna Educational District published in the scholarly journal *Zhurnal Ministerstva Narodnogo Prosveshcheniya* ([Nizshie uchilishcha, 1878](#); [Nizshie uchilishcha, 1879](#); [Srednie uchebnye zavedeniya, 1896](#); [Sbornik svedenii, 1873](#)). The authors also made use of several regulatory documents (e.g., the Edict on the Establishment of the Educational Districts ([Imennoi ukaz, 27](#))).

In conducting the research reported in this paper, the authors employed both general methods of research, including concretization and summarization, and traditional methods of historical analysis. In addition, use was made of the historical-situational method, with a focus on exploring particular historical facts within the context of the given period in conjunction with various “neighboring” events and facts.

## **3. Discussion**

There is a paucity of historiography on the public education system in Vilna Governorate. Prior to the 1860s, the system is not mentioned even in the memorandum books. However, starting in the 1890s, along with descriptions of the education system in specific years ([O-v, 1895](#); [O-v, 1896](#); [O-v, 1898](#); [Il'in, 1905](#); [Il'in, 1905a](#)), there even emerge some real research studies on the subject. Most researchers regard I.P. Kornilov's ‘The Russian Cause in Northwestern Krai’ as the first ever work of this kind in the pre-revolutionary period ([Kornilov, 1901](#)).

During the Soviet time, the subject was explored in the context of the history of the national republics. For instance, the subject of public education in Belarus was investigated by I.M. Il'yushin and S.A. Umreiko ([Il'yushin, Umreiko, 1961](#)). During the post-Soviet period, the subject was now investigated by scholars from two republics – Lithuania and Belarus ([Aleksandravičius, Kulakauskas, 1996](#); [Sergeenkova i dr., 2008](#); [Ershova, 2006](#)), as well as from the Russian Federation ([Korotkov, 1993](#)).

Of major significance to the analysis of related historiography are works on the development of the public education system in other governorates, like Vologda Governorate ([Cherkasov et al., 2019](#); [Cherkasov et al., 2019a](#)), Vyatka Governorate ([Magsumov et al., 2018](#)), and Don Oblast ([Peretyatko, Zulfugarzade, 2017](#); [Peretyatko, Zulfugarzade, 2017a](#)), as well as the Caucasus ([Natolochnaya et al., 2018](#); [Magsumov et al., 2018](#); [Shevchenko et al., 2016](#)). Coming at it from this angle helps examine the issue through the prism of comparison with various regions in the country.

## **4. Results**

The Vilna Educational District was among the first six educational districts in the Russian Empire created via Emperor Alexander I's edict of January 24, 1803 ([Imennoi ukaz, 27](#)). At the time of its establishment, the district comprised educational institutions in eight governorates: Vilna, Vitebsk, Volyn, Grodno, Mogilev, Minsk, Kiev, and Podolia. The Major Vilna School was made the district's educational and administrative center. It would later be transformed into Imperial Vilna University via an edict of April 4, 1803. During the first 80 years of the operation of the Vilna Educational District, the development of the public education system in Vilna Governorate was a rather complicated process. These complications were associated with (1) the motley ethnic makeup of the region's population and (2) the peasants' stereotyped image of education as useless. Subsequent to the abolition of serfdom and based on the implementation of a series of administrative governance reforms, the situation would ultimately change, with the process of development of the education system gaining new momentum both in the region and throughout the nation.

[Table 1](#) illustrates the development of the public education system in Vilna Governorate during the period 1880–1908.

**Table 1.** Total Educational Institutions and Students in Vilna Governorate in the Period 1880–1908 (Natolohnaya et al., 2019: 661; Pamyatnaya knizhka, 1885: 18; Pamyatnaya knizhka, 1889: 62; Pamyatnaya knizhka, 1892: 124, 126; Pamyatnaya knizhka, 1898: 267-269; Pamyatnaya knizhka, 1901: 26; Pamyatnaya knizhka, 1913: 36)

Year	Total educational institutions	Total students	Average number of students at an educational institution
1861	145	5,728	39.5
1880	330	14,565	44.1
1883	335	16,411	48.9
1884	337	17,597	52.2
1886	738*	22,160	30.0
1888	813	28,070	34.5
1892	783	24,331	31.0
1896	1,545 <sup>†</sup>	49,153	31.8
1900	1,624	55,755	34.3
1902	1,628	62,340	38.2
1903	1,361	62,857	46.1
1904	1,491	65,349	43.8
1905	1,478	62,535	42.3
1906	1,490	63,941	42.9
1907	1,355	63,139	46.5
1908	1,529	71,374	46.6

Note that prior to 1886 the authorities did not keep statistical track of parochial schools, which explains the sharp rise in the number of educational institutions in the region at the time. In 1892, there was a drop in educational institutions and students due to reduced funding. Of note is also the fact that there was a sharp drop in students per school. The thing is that the region's parochial schools and grammar schools, which accounted for about half of all its educational institutions, were distinguished by being underfilled, whereas schools within its public education system numbered by 1908 an average of 100 students.

**Table 2.** Departmental Affiliation of Educational Institutions in Vilna Governorate in the Period 1880–1908 (Pamyatnaya knizhka, 1885: 18; Pamyatnaya knizhka, 1887: 15-16; Pamyatnaya knizhka, 1889: 60-62; Pamyatnaya knizhka, 1892: 124, 126; Pamyatnaya knizhka, 1898: 267-269; Pamyatnaya knizhka, 1901: 26; Pamyatnaya knizhka, 1913: 36)

Year	Directorate for Public Schools	Diocesan clergy	Department of Military Affairs
1884	332	4 <sup>‡</sup>	1
1886	474	263	1
1888	456	356	1
1892	382	399	2
1898	946	598	1
1900	845 <sup>§</sup>	778	1
1902	888	739	1
1903	880	480	1
1904	837	653	1
1905	768	709	1
1906	755	734	1

\* 259 of these being parochial schools (attended by a combined total of 4,326 students)

<sup>†</sup> 62 of these being parochial schools and 530 – grammar schools

<sup>‡</sup> exclusive of parochial schools

<sup>§</sup> inclusive of 563 specialized Jewish institutions

1907	759	595	1
1908	827	701	1

As evidenced by [Table 2](#), about half of all educational institutions in the region at the time were parochial schools and grammar schools.

Of considerable interest is also the development of specialized Jewish education in Vilna Governorate. By departmental affiliation, the region's Jewish schools were part of the Directorate for Public Schools. The distribution of Christian and Jewish schools in Vilna Governorate at the time is illustrated in [Table 3](#).

**Table 3.** Distribution of Christian and Jewish Schools in Vilna Governorate in the Period 1891–1908 ([Pamyatnaya knizhka, 1901: 40](#); [Pamyatnaya knizhka, 1913: 36](#))

Type of educational institution	Total educational institutions across the years														
	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1902	1903	1905	1907	1908
Public schools	187	187	190	190	191	193	194	197	207	221	245	267	278	384	474
Cheders	90	85	78	614	614	638	635	591	545	496	507	480	342	275	255

**Table 4.** Distribution of Students across the Estates in Vilna Governorate in the Period 1884–1898 ([Pamyatnaya knizhka, 1885: 18](#); [Pamyatnaya knizhka, 1889: 63](#); [Pamyatnaya knizhka, 1892: 124-125](#); [Pamyatnaya knizhka, 1898: 264](#))

Estate / Year	1884	1888	1892	1898
Children of nobles and functionaries	2,337	2,621	2,862	3,156
Those in holy orders	562	470	594	567
Urban dwellers	5,422	7,162	7,668	7,947
Rural dwellers	9,128	12,122	11,074	14,397
Those of military rank	29	27	127	82
Foreigners and raznochintsy	119	67	84	76
Total	17,597*	22,469	22,409	26,225

As evidenced from [Table 4](#), during the period between the 1880s and early 1890s about 50 % of all students at schools run by the Directorate for Public Schools were rural dwellers. Around 35 % were urban dwellers, and a little less than 15 % were the children of nobles and functionaries. At the latter end of the 19<sup>th</sup> century, the region witnessed a redistribution of students. Specifically, there was a sharp drop in children of nobles: from 19.5 % in 1898 to 13.9 % in 1899 and to 4.1 % in 1900. There also was a drop in urban dwellers: 1898 – 26.5 %, 1899 – 25.6 %, and 1900 – 11.9 %. At the same time, there was a sharp rise in rural dwellers: 1898 – 54 %, 1899 – 60.5 %, and 1900 – 84 % ([Pamyatnaya knizhka, 1901: 37](#)).

\* Exclusive of students at parochial schools.



**Table 5.** Distribution of Students across the Religions in Vilna Governorate in the Period 1884–1900 (*Pamyatnaya knizhka, 1885: 18; Pamyatnaya knizhka, 1889: 63; Pamyatnaya knizhka, 1892: 125; Pamyatnaya knizhka, 1898: 264; Pamyatnaya knizhka, 1901: 38*)

Religion \ Year	1884	1888	1892	1898	1900
Orthodox Christians	6,464	7,875	8,130	9,619	23,054
Schismatics	108	128	146	245	463
Catholics	6,590	8,187	7,777	9,995	15,341
Protestants and Lutherans	259	263	305	359	467
Jews	4,118	5,953	5,959	15,866	16,351
Karaites	7	9	23	29	434
Muslims	51	54	69	112	36
Total	17,597	22,469	22,409	26,225	55,755

As evidenced from [Table 5](#), during the period spanning the 1880s and 1890s, the numbers of Catholics and Orthodox Christians at schools run by the Directorate for Public Schools were about the same (around 35 % each), with these two groups followed by Jewish students (around 25 %). In [Table 5](#), data for the year 1900 includes students at parochial schools and grammar schools. Based on this, the percentage of Orthodox Christian students in the region reached 40 %.

In the 1880s, wide use was made of Sunday and gala readings. This type of activity could draw up to 200 participants on Sundays and gala days in many of the areas where Orthodox Christians resided. Unfortunately, in some schools situated in areas with a predominantly Roman Catholic population, on account of nonchalance on the part of Roman Catholic clergy, readings of this kind were mainly avoided by the adult population – to only be attended by public school students.

Apart from the region's Directorate-run schools, the cause of public education in the governorate continued to be propelled by parochial schools and grammar schools. These schools, especially at the very outset of their operation, had met with numerous difficulties and challenges. However, thanks to support from the Diocesan School Council and funding from the government, the situation would later improve. As of 1888, the Diocesan School Council was in charge of 352 schools, with 24 of those being two-grade schools and the rest being grammar schools (*Pamyatnaya knizhka, 1889: 65*).

Of definite interest is the issue of school attendance among the region's children of school-going age. [Table 6](#) displays the data for the year 1900.

**Table 6.** School Attendance in Vilna Governorate in 1900 (*Pamyatnaya knizhka, 1901: 38*)

Religion	Total children of school-going age (boys and girls combined)	Of these, total children who went to school	Percentage
Protestants	467	467	100
Karaites	443	443	100
Jews	24,577	16,351	66.5
Orthodox Christians	42,577	23,054	51.9
Schismatics	2,376	463	19.5
Catholics	100,375	15,341	15.3
Moslems	388	36	9.3
Total	170,636	55,755	32.6

Note that in 1893 Vilna Governorate had one public school per every 194 km<sup>2</sup> and every 5,188 residents (males and females combined). As a result, only 8 of the region's children went to school (*O-v, 1895: 3*). In 1896, the figure dropped a little – one school per every 4,798 residents and one student per every 76 residents (*O-v, 1898: 140*).

Considerable attention in public schools in Vilna Governorate, just like across the rest of Russia at the time, was devoted to vocational training. The governorate had in place a system of training in crafts and horticulture.

In terms of extracurricular activities, wide use was made of solemn literary-vocal social gatherings and gala readings. In 1896, the Head of the governorate’s Directorate for Public Schools wrote in a report that gala readings had the greatest success in areas with a predominantly Orthodox Christian population (O-v, 1898: 179). By tradition, of major significance were libraries. At year-end 1896, Vilna Governorate had 89 libraries with a combined collection of 6,552 volumes. In that year, the libraries lent out a total of 8,637 volumes, with most of the readers being literate peasants, former public school students. Most of the literature borrowed was related to religion, history, and natural history (O-v, 1898: 179).

So what were the outcomes achieved by the public education system by 1908? As commonly known, no census was conducted during that period – so the only source covering the matter in 1908 might be a pool of annual military conscription data on total literate recruits\*. Data of this kind are available on Vilna Governorate as well (Table 7).

**Table 7.** Literacy Levels across the Districts within Vilna Governorate in the Period 1902–1908 (based on materials from the Vilna Governorate Office for Military Conscription) (Pamyatnaya knizhka, 1913: 38)

Conscription year	Vilna	District							Across the governorate
		Vilna District	Vileyka District	Dzisna District	Lida District	Ashmyany District	Švenčionys District	Trakai District	
1902	65.7	39.0	61.7	63.9	58.4	45.5	50.3	36.5	50.5
1903	72.1	34.7	46.0	47.6	43.2	45.9	41.2	31.3	43.5
1904	65.2	15.6	51.9	45.9	45.3	51.1	55.8	28.3	50.6
1905	89.5	63.2	78.5	68.0	69.0	78.8	79.5	69.9	74.0
1906	67.1	40.1	63.8	58.7	49.3	54.2	48.3	36.8	52.9
1907	67.1	40.7	69.9	37.5	56.6	55.0	51.7	37.5	51.3
1908	87.1	57.1	72.5	63.2	55.7	57.9	53.9	41.0	60.3

As evidenced by Table 7, the percentage of the literate not only varies significantly across the region’s districts and within a given year but appears to vary sharply for each district as well. A percentage of the literate this impermanent and unstable may be testimony to an unstable public education system in the region, which may have been the case in the region due to the following factors:

- 1) the region’s schools not being distributed evenly enough among its population;
- 2) quite commonly, difficulty enrolling in a school due to its being overfilled.

It should be noted that the above data on literacy rates in the region may lack formal validity, as most were gathered by way of surveys of newly-enrolled learners.

As regards the region’s teaching workforce, the bulk of this group in Vilna Governorate was made up of teacher’s seminary graduates. Specifically, at year-end 1896 teacher’s seminary graduates accounted for 80 % of all teachers in the governorate, with 5.5 % of the workforce being graduates from a secondary educational institution and 14.5 % being certified primary school teachers. There were no teachers with a higher education in the region at the time (O-v, 1898: 156).

\* In 2011, researcher A.A. Cherkasov, too, drew extensively upon the materials on military conscription (when investigating the efficiency of the public education system in the Russian Empire) (Cherkasov, 2011).

## 5. Conclusion

During the period 1880–1908, the region witnessed a gradual increase in the number of educational institutions and students (a definite rise of at least three times). Estates-wise, the period was characterized by a sharp increase in students from rural areas and a drop in those who were the children of nobles and functionaries. In terms of students' religious affiliation, the way was led by Orthodox Christians, followed by Catholics and then Jews.

## 6. Acknowledgements

This publication was produced with support to the Peoples' Friendship University of Russia as part of the Project 5-100 program.

## References

- Aleksandravičius, Kulakauskas, 1996 – Aleksandravičius E., Kulakauskas A. Carų valdžioje: XIX amžiaus Lietuva. Vilnius, 1996.
- Cherkasov et al., 2019 – Cherkasov A.A., Bratanovskii S.N., Koroleva L.A., Zimovets L.G. (2019). Development of school education in the Vologda governorate (1725-1917). Part 1. *European Journal of Contemporary Education*. 8(1): 208-214.
- Cherkasov et al., 2019a – Cherkasov A.A., Bratanovskii S.N., Koroleva L.A., Zimovets L.G. (2019). Development of school education in the Vologda governorate (1725-1917). Part 2. *European Journal of Contemporary Education*. 8(2): 418-424.
- Cherkasov, 2011 – Cherkasov A.A. (2011). All-Russian Primary Education (1894-1917): Developmental Milestones. *Social Evolution & history*. 2(10): 138-149.
- Ershova, 2006 – Ershova, O.I. (2006). Razvitie nachal'nogo narodnogo obrazovaniya v Vilenskom uchebnom okruge v 70–90-e gg. XIX v. [The development of primary public education in the Vilnius school district in the 70–90s. XIX century]. Pratsy gistorychnaga fakul'teta : navuk. zb. Vyp. 1. Redkal.: U.K. Korshuk (adk. red.) [i insh.]. Minsk: BDU, pp. 226-230. [in Russian]
- Il'in, 1905 – Il'in, A. (1905). Vilenskii uchebnyi okrug v 1903 g. [Vilensky educational district in 1903]. *ZhMNP*. 6: 167-195. [in Russian]
- Il'in, 1905a – Il'in, A.A. (1905). Vilenskii uchebnyi okrug v 1903 g. [Vilensky educational district in 1903]. *ZhMNP*. № 2: 45-60. [in Russian]
- Il'yushin, Umreiko, 1961 – Il'yushin, I.M., Umreiko, S.A. (1961). Narodnoe obrazovanie v BSSR [Public education in the BSSR]. Mn. [in Russian]
- Imennoi ukaz, 27 – Imennoi ukaz ot 24 yanvarya 1803 g. «Ob uchrezhdenii uchebnykh okrugov, s naznacheniem dlya kazhdogo osobykh gubernii» [A personal decree dated January 24, 1803 “On the establishment of educational districts, with the appointment of each special province”]. PSZ. T. 27. № 20598. [in Russian]
- Kornilov, 1901 – Kornilov, I.P. (1901). Russkoe delo v Severo-Zapadnom krae. Materialy dlya istorii Vilenskogo uchebnogo okruga, preimushchestvenno v Murav'evskuyu epokhu [Russian business in the Northwest Territory. Materials for the history of the Vilna school district, mainly in the Muravyov era]. SPb. [in Russian]
- Korotkov, 1993 – Korotkov, Yu.N. (1993). Uchebnye okruga [Educational districts]. Gl. red. V.V. Davydov. Rossiiskaya pedagogicheskaya entsiklopediya. M. [in Russian]
- Magsumov et al., 2018 – Magsumov T.A., Artemova S.F., Balanyuk L.L. (2018). Regional problems of public schools in the Russian Empire in 1869-1878 (using an example of the Vyatka Province). *European Journal of Contemporary Education*. 7(2): 420-427.
- Magsumov et al., 2018 – Magsumov T.A., Artemova S.F., Ustinova O.V., Vidishcheva E.V. (2018). Public education system in the Caucasus region in the 1850s: Unification and regulation of educational process. *European Journal of Contemporary Education*. 7(3): 598-607.
- Mamadaliyev et al., 2018 – Mamadaliyev A.M., Gordeev I., Miku N.V., Médico A. (2018). Teacher training for the system of primary education in Switzerland in the mid-nineteenth century. *European Journal of Contemporary Education*. 8(1): 222-228.
- Natolochnaya et al., 2018 – Natolochnaya O.V., Miku N.V., Zulfugarzade T.E., Médico A. (2018). Highland schools in the Caucasus: Historical background. *European Journal of Contemporary Education*. 7(3): 608-614.

[Natolochnaya et al., 2019](#) – *Natolochnaya O.V., Bulgarova B.A., Denisenko V.N., Volkov A.N.* (2019). The History of the Public Education System in Vilna Governorate (the Second Half of the 19th and Early 20th Centuries). Part 1. *European Journal of Contemporary Education*. 8(3): 655-664.

[Nizshie uchilishcha, 1878](#) – Nizshie uchilishcha Vilenskoj gubernii [Lower schools of Vilnius province]. *ZhMNP*. 1878. № 11: 52-81. [in Russian]

[Nizshie uchilishcha, 1879](#) – Nizshie uchilishcha Vilenskogo uchebnogo okruga [Lower schools of the Vilnius educational district]. *ZhMNP*. 1879. № 11: 59-74. [in Russian]

[O-v, 1895](#) – *O-v, N.* (1895). Narodnoe obrazovanie v Vilenskom uchebnom okruge v 1893 g. [Public education in the Vilna school district in 1893]. *ZhMNP*. 1895. № 3: 1-44. [in Russian]

[O-v, 1896](#) – *O-v, N.* (1896). Gorodskie i uezdnye uchilishcha Vilenskogo uchebnogo okruga v 1894 g. [City and County school of the Vilna educational district in 1894]. *ZhMNP*. № 2: 93-109. [in Russian]

[O-v, 1898](#) – *O-v, N.* (1898). Narodnoe obrazovanie v Vilenskom uchebnom okruge v 1896 g. [Public education in the Vilna educational district in 1893]. *ZhMNP*. № 2: 138-190. [in Russian]

[Pamyatnaya knizhka, 1874](#) – Pamyatnaya knizhka Vilenskoj gubernii na 1874 g. [The memorial book of the Vilnius province for 1874]. Vil'na, 1874. [in Russian]

[Pamyatnaya knizhka, 1875](#) – Pamyatnaya knizhka Vilenskoj gubernii na 1875 g. [The memorial book of the Vilnius province for 1875]. Vil'na, 1875. [in Russian]

[Pamyatnaya knizhka, 1876](#) – Pamyatnaya knizhka Vilenskoj gubernii na 1877 g. [The memorial book of the Vilnius province for 1877]. Vil'na, 1876. [in Russian]

[Pamyatnaya knizhka, 1877](#) – Pamyatnaya knizhka Vilenskoj gubernii na 1878 g. [The memorial book of the Vilnius province for 1878]. Vil'na, 1877. [in Russian]

[Pamyatnaya knizhka, 1878](#) – Pamyatnaya knizhka Vilenskoj gubernii na 1879 g. [The memorial book of the Vilnius province for 1879]. Vil'na, 1878. [in Russian]

[Pamyatnaya knizhka, 1879](#) – Pamyatnaya knizhka Vilenskoj gubernii na 1880 g. [The memorial book of the Vilnius province for 1880]. Vil'na, 1879. [in Russian]

[Pamyatnaya knizhka, 1880](#) – Pamyatnaya knizhka Vilenskoj gubernii na 1881 g. [The memorial book of the Vilnius province for 1881]. Vil'na, 1880. [in Russian]

[Pamyatnaya knizhka, 1885](#) – Pamyatnaya knizhka Vilenskoj gubernii na 1886 g. [The memorial book of the Vilnius province for 1886]. Vil'na, 1885. [in Russian]

[Pamyatnaya knizhka, 1887](#) – Pamyatnaya knizhka Vilenskoj gubernii na 1888 g. [The memorial book of the Vilnius province for 1888]. Vil'na, 1887. [in Russian]

[Pamyatnaya knizhka, 1889](#) – Pamyatnaya knizhka Vilenskoj gubernii na 1890 g. [The memorial book of the Vilnius province for 1890]. Vil'na, 1889. [in Russian]

[Pamyatnaya knizhka, 1892](#) – Pamyatnaya knizhka Vilenskoj gubernii na 1893 g. [The memorial book of the Vilnius province for 1893]. Vil'na, 1892. [in Russian]

[Pamyatnaya knizhka, 1898](#) – Pamyatnaya knizhka Vilenskoj gubernii na 1898 g. [The memorial book of the Vilnius province for 1898]. Vil'na, 1892. [in Russian]

[Pamyatnaya knizhka, 1901](#) – Pamyatnaya knizhka Vilenskoj gubernii na 1901 g. [The memorial book of the Vilnius province for 1901]. Vil'na, 1901. [in Russian]

[Pamyatnaya knizhka, 1913](#) – Pamyatnaya knizhka Vilenskoj gubernii na 1913 g. [The memorial book of the Vilnius province for 1913]. Vil'na, 1913. [in Russian]

[Peretyatko, Zulfugarzade, 2017](#) – *Peretyatko A.Y., Zulfugarzade T.E.* (2017). Project of reforms proposed for the don public education in the first half of 1860: A.M. Dondukov-Korsakov, Kh.I. Popov, N.I. Krasnov. *European Journal of Contemporary Education*. 6(4): 817-829.

[Peretyatko, Zulfugarzade, 2017a](#) – *Peretyatko A.Y., Zulfugarzade T.E.* (2017). Higher and secondary education of the don cossacks in the context of the epoch: The time of the great reforms. *European Journal of Contemporary Education*. 6(2): 367-377.

[Rajović et al., 2018](#) – *Rajović G., Zuev M., Vazerova A.G., Trailovic M.* (2018). Development of primary public education system in Serbia in 1832-1882. *European Journal of Contemporary Education*. 7(3): 623-629.

[Rajović et al., 2018a](#) – *Rajović G., Bratanovskii S.N., Vazerova A.G., Trailovic M.* (2018). Development of the secondary-level education in Serbia from 1808 to the 1870s. *European Journal of Contemporary Education*. 7(4): 927-934.

[Sbornik svedenii, 1873](#) – Sbornik svedenii o srednikh uchebnykh zavedeniyakh Vilenskogo uchebnogo okruga [Collection of information about secondary schools of the Vilna school district]. Vil'na, 1873. [in Russian]

[Sbornik, 1868](#) – Sbornik istoriko-statisticheskikh materialov po Vilenskoj gubernii. V 2 ch. [Collection of historical and statistical materials in the Vilna province. In 2 parts]. Ch. 1. Vil'no, 1868. [in Russian]

[Sergeenkova i dr., 2008](#) – *Sergeenkova, V.V., Ershova, O.I., Gulyuk, M.A., Sharaeva, E.I.* (2008). Vilenskii uchebnyi okrug: politika rossiiskogo pravitel'stva v oblasti obrazovaniya (vtoraya polovina XIX — nachalo XX v.) [Vilensky educational district: policy of the russian government in the field of education (second half of XIX — beginning of XX century)]. *Rossiiskie i slavyanskije issledovaniya*. Minsk, Vyp. 3: 57-75. [in Russian]

[Shevchenko et al., 2016](#) – *Shevchenko N.A., Vidishcheva E.V., Emelyanova O.V.* (2016). The establishment of the system of public education in the Caucasus (1802-1917 years): The characteristic features. *Bylye Gody*. 40(2): 363-372.

[Srednie uchebnye zavedeniya, 1896](#) – Srednie uchebnye zavedeniya Vilenskogo uchebnogo okruga v 1896 g. [Secondary educational institutions of the Vilnius educational district in 1896]. *ZhMNP*. 1898. № 1: 54-75. [in Russian]





Copyright © 2019 by Academic Publishing  
House Researcher s.r.o.  
All rights reserved.  
Published in the Slovak Republic  
European Journal of Contemporary Education  
E-ISSN 2305-6746  
2019, 8(4): 973-983  
DOI: 10.13187/ejced.2019.4.973  
[www.ejournal1.com](http://www.ejournal1.com)

**WARNING!** Article copyright. Copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of the violation of the author(s) rights will be pursued on the basis of international legislation. Using the hyperlinks to the article is not considered a violation of copyright.



## The Development of the School Education System in Vologda Governorate (1725–1917). Part 4

Aleksandr A. Cherkasov <sup>a, b, \*</sup>, Sergei N. Bratanovskii <sup>c, d</sup>, Ludmila G. Zimovets <sup>e</sup>

<sup>a</sup> International Network Center for Fundamental and Applied Research, Washington, USA

<sup>b</sup> Volgograd State University, Volgograd, Russian Federation

<sup>c</sup> Plekhanov Russian University of Economics, Moscow, Russian Federation

<sup>d</sup> Institute of State and Law of RAS, Moscow, Russian Federation

<sup>e</sup> Sochi State University, Sochi, Russian Federation

### Abstract

This paper examines the origination and development of the school education system in Vologda Governorate in the period 1725–1917. This part of the set covers the period 1900–1917.

The authors drew upon a set of works covering pre-revolutionary pedagogy, as well as a pool of contemporary Russian scholarly literature.

In conducting the research reported in this paper, the authors employed both general methods of research, including concretization and summarization, and traditional methods of historical analysis. Use was made of the historical-situational method to explore particular historical facts in the context of the era under study in conjunction with various neighboring events and facts.

The authors conclude by noting that from 1900 to 1916 Vologda Governorate enjoyed a period of dynamic development in its public education sector, which had been facilitated by the nationwide process of preparation for the institution of compulsory education. The number of educational institutions in the region had reached as many as 2,000, with significant gains achieved in the quality of the education system as well. In addition to the focus on setting up new educational institutions, considerable attention was devoted to building new schools, ensuring better pay and working conditions for teachers, and preparing the region's teaching workforce. Despite the complex geographical conditions, namely the region's large relatively lowly populated land mass, the Ministry of Public Education had sought to institute compulsory primary education throughout Vologda Governorate by 1920. To do it justice, these plans were being systematically

---

\* Corresponding author  
E-mail: [sochio03@rambler.ru](mailto:sochio03@rambler.ru) (A.A. Cherkasov)

put into effect. As early as 1914, nearly 75 % of the region's school-age children attended school. The bulk of the region's out-of-school children were accounted for by peasant girls whose parents viewed education as being of little use to a female in the countryside.

**Keywords:** public education, Russian Empire, Vologda Governorate, schools, teachers, gymnasia.

### **1. Introduction**

The first educational institutions in Vologda Governorate were established back in the 14<sup>th</sup> century. A prominent figure in this respect is Saint Stephen, the Apostle and Enlightener of Perm, who preached Christianity among local pagans (Popov, 1885: 40). In an effort to reinforce Christianity among the people, Saint Stephen undertook to establish a series of schools at the churches. He personally provided to children instruction in the Prayer Book and other church books (which had been translated into the Zyryan language).

However, after Saint Stephen's death writing in Zyryan would exist in the Perm region for only 100 years or so. It would eventually fade into oblivion, mainly due to pastors switching from Zyryan to the Slavic language. School education in the region would be resumed only under Peter the Great. This, fourth, part of the set is focused on the development of the public education system in Vologda Governorate in the period from 1900 to 1917.

### **2. Materials and methods**

The authors drew upon a set of works covering pre-revolutionary pedagogy, as well as a pool of contemporary Russian scholarly literature.

In conducting the research reported in this paper, the authors employed both general methods of research, including concretization and summarization, and traditional methods of historical analysis. Use was made of the historical-situational method to explore particular historical facts in the context of the era under study in conjunction with various neighboring events and facts.

### **3. Discussion**

The history of public education in Vologda Governorate has been a subject of continued interest among researchers in the history of pedagogy. Initially, the topic was studied in the context of the history of Orthodox Christianity – more specifically, the activity of St. Stephen of Perm in the 14<sup>th</sup> century. This was explored by researchers E.A. Popov (Popov, 1885) and N.K. Otto (Otto, 1866). The subject was also dwelt upon in the work 'On the History of the Vologda School Directorate' (Dlya istorii, 1860).

During the reign of Peter the Great, Russia launched the process of setting up educational institutions across the country. This involved the establishment of numerical schools and theological seminaries, all kinds of small and large schools, gymnasia, and district schools. The subject of public education in Vologda Governorate in the pre-revolutionary period was explored by researchers N.F. Bunakov (Bunakov, 1864) and A. Ivanov (Ivanov, 1879). It was also discussed in 'A Historical Survey of the Activity of the Ministry of National Education, 1902–1902' (Istoricheskii obzor, 1902).

In the modern period, the history of education in Vologda Governorate has been explored by researchers N.S. Vorotnikova (Vorotnikova, 2015; Vorotnikova, 2015a; Vorotnikova, 2016), L.N. Kolos (Kolos, 2015), A.A. Cherkasov (Cherkasov et al., 2019; Cherkasov et al., 2019a; Cherkasov et al., 2019b), and others. At the same time, issues of education in other, central and southern, provinces of the Russian Empire are currently a subject of active research as well (Peretyatko, Zulfugarzade, 2017; Peretyatko, Zulfugarzade, 2017a; Kornilova et al., 2016; Natolochnaya et al., 2018; Magsumov et al., 2018; Shevchenko et al., 2016).

### **4. Results**

Based on the nation's first Census, in 1897 Vologda Governorate had 191 literate individuals per every 1,000 residents, or 19.1 % of its population (Uspenskii, 1914: 4). By 1900, exclusive of children below the age of nine, the figure rose to 30 % (Cherkasov et al., 2019b: 635). With the performance of the public education system regarded as lacking, on May 3, 1908 the government

made the decision to ramp up funding for the primary education system – with a view to instituting compulsory primary education across the nation within a 10-year period. Vologda Governorate was among the 33 governorates (a total of 122 zemstvos) which immediately set to work on implementing the project. From 1908 to October 1, 1910, the government allocated toward compulsory primary education in Vologda Governorate 164,970 rubles and established 423 new school units (each unit numbering 50 students)\* (*Podgotovitel'nye raboty...*, 1911: 52-53). Table 1 illustrates the state of affairs in the region's public education sector in the period 1899–1915.

**Table 1.** Total Educational Institutions in Vologda Governorate in the Period 1899–1915 (*Pamyatnaya knizhka*, 1899: 9; *Ezhegodnik*, 1914: 22)

Year	Total educational institutions	Total students	Average number of students per educational institution
1899	1,046	47,445	45.3
1902	1,628	62,340	38.2
1903	1,361	62,857	46.1
1904	1,491	65,349	43.8
1905	1,478	62,535	42.3
1906	1,490	63,941	42.9
1907	1,355	63,139	46.5
1908	1,529	71,374	46.6
1910	1,705	80,113	46.9
1911	1,837	84,623	46.0
1912	1,921	92,649	48.2
1915	1,917	94,437	49.2

As evidenced from Table 1, by 1915 the school system in Vologda Governorate essentially had reached the required value of a single school unit numbering 50 students. However, in 1915 the region began to witness a slight decline in schools, which was associated with school buildings being used during that time as hospitals throughout the Russian Empire.

In the first three years of implementation of the program (1907–1910), nearly a third of all the work on establishing new schools was completed. A large number of designated buildings were erected for the schools; buildings were erected not only for newly established schools but also for any school that had rented a building or had used a deteriorated one of its own. What is more, state funding made it possible to build stone and brick school buildings in zemstvos where they had never built anything but wooden buildings. Changes were implemented in teacher pay as well. To be specific, whereas prior to the decision on instituting compulsory primary education teachers were paid no more than 20–25 rubles per month, the figure now was 30 rubles per month (*A.Ch.*, 1913: 70).

Just like in previous periods, the majority of public schools in the region were run by the Ministry of Public Education and the Department of Religious Affairs. Table 2 provides a comparison of figures between the two in the period 1899–1913.

As evidenced from Table 2, the early 20<sup>th</sup> century witnessed a continual decline in parochial schools and grammar schools, whereas there was a multifold rise in schools run by the Ministry of Public Education.

As at January 1, 1913, the number of primary schools under the Ministry of Public Education alone was 1,116, of which 53 were urban and 1,063 were rural schools (*Uspenskii*, 1914: 5). There were no private educational institutions in Vologda Governorate at the time. There were 704 parochial schools (one-class and two-class) by January 1, 1912. By 1913, grammar schools ceased to be included in the school network and were no longer entitled to state funding for teachers. Therefore, as the school network was developing, the number of these schools continually declined, starting in 1909. To be specific, as at academic year 1912-13 the number of these schools in Vologda Governorate was 40,

\* Typically, one school unit was synonymous with one school, considering that Vologda Governorate was a lowly populated region.

an increase of 12 on the previous academic year. Note that some of the neighboring governorates (e.g., Olonets Governorate) had no such schools at all (Uspenskii, 1914: 5-6).

**Table 2.** Total Schools under the Ministry of Public Education and under the Department of Religious Affairs in Vologda Governorate in the Period 1899–1913 (Pamyatnaya knizhka, 1899: 9-10; Losev, 1912: 53-54; Ezhegodnik, 1914: 22)

Year	Ministry of Public Education	Department of Religious Affairs
1899	272	756*
1910	777	784
1911	868	769
1912	1,009	741
1913	1,116	726

A key issue that persisted was school buildings. During that period, 264 schools in Vologda Governorate had a building of their own, and 852 schools were leasing a property (Uspenskii, 1914: 6). Most leased buildings were not perfectly suitable for the learning process. This especially was the case in rural areas, where it typically was done at leased peasant houses, most of which were simply not suited for use as a school. To combat this issue, in certain districts within the governorate the zemstvo provided peasants with subsidies toward the lease of buildings for educational purposes.

Suited best as a school's own building were new properties that were warm, light-filled, and spacious and had extra rooms for the night accommodation of students from remote villages in case of inclement weather.

The state of affairs regarding housing was better with the region's parochial schools. To be specific, in 1913 all three of the region's two-class schools had buildings of their own with teacher apartments in them; out of the region's 380 one-class schools, 286 had buildings of their own (74 %) and 361 had teacher apartments in them (Uspenskii, 1914: 11).

Certain schools, both among those under the Ministry of Public Education and among those under the Department of Religious Affairs, had hostels and lodging-houses for students from remote villages. They, for the most part, used these during spring or fall mud seasons and in times of hard frost or snowfall.

A key issue related to education accessibility was the remoteness of schools in the region – the less a student had to walk to the school, the less frequently would they cut class. The 1911 School Census revealed that around 50 % of all students in the region had to walk less than 1 kilometer to get to the school, 29 % – between 1 and 2 kilometers, 10% – between 2 and 3 kilometers, and 8.5 % – over 3 kilometers (Uspenskii, 1914: 13).

It is now time to say a few words about the region's teaching workforce. Female teachers in rural schools within the Saint Petersburg Educational District in 1880 accounted for 24.5 %, in 1894 – 39.1 %, in 1911 – 63.1 %, and in 1913 – 66.3 % (Uspenskii, 1914: 15). In Vologda Governorate the figure was even higher – 71.6 %. Age-wise, the 1880 School Census revealed that the region's teaching workforce was very young, with male teachers older than 40 accounting for just 8.5 %. By 1911, the figure rose to 14 %. While in 1880 female teachers older than 40 accounted for just 3.3 %, in 1911 the figure now was 6.7 %. The highest percentage of young male and female teachers (no older than 25) was recorded in grammar schools, parochial schools, and zemstvo schools. The highest percentage of male teachers older than 40 was recorded in urban, social, parish, industrial, factory, and railroad schools; the highest percentage of female teachers older than 40 was recorded in urban, social, and private third-rate schools.

Based on the 1911 Census, male teachers with a higher education accounted for 0.4 %, and female teachers – for 9.3 %; male teachers with a secondary education accounted for 58.6 %, and female teachers – for 57.6 %; male teachers with an education below secondary accounted for 40.6 %, and female teachers – for 32.4 %. Male teachers whose education level it was not possible to determine accounted for 0.4 %, and female teachers for 0.7 % (Uspenskii, 1914: 16). The average male teacher pay in Vologda Governorate was 359 rubles per year, and the average female teacher

\* Of these, there were 441 parochial schools and 315 grammar schools.



pay was 320 rubles per year. Teacher pay was somewhat lower in parochial schools and grammar schools. To be specific, in 1911 in parochial schools the average male teacher pay was 290 rubles per year, and the average female teacher pay was 310 rubles per year. In grammar schools, male teachers were paid an average salary of 127 rubles per year, and female teachers – 137 rubles per year (Uspenskii, 1914: 16).

The average instructor pay in zemstvo schools with compulsory education was 360 rubles per year. Some zemstvos paid instructors an extra 30–60 rubles per year for a period of five years. In schools where education was not compulsory, instructors were paid around 300 rubles per year.

The Totma Teacher's Seminary was long the only teacher training institution in Vologda Governorate. Subsequent to the government's adoption of the policy of instituting compulsory primary education, there was a sharp increase in the need for instructors. As a result, in 1910 the authorities brought into operation the Nikolsk Male Teacher's Seminary, and in 1911 – the Ustyug Female Teacher's Seminary (Losev, 1912: 118).

Based on the 1911 School Census, during that time Vologda Governorate had 1,647 educational institutions (against a population of 1,651,200). Thus, there was one school per every 1,003 residents. As was the case with many of the central governorates in European Russia, the region's schools were characterized by a gender imbalance. To be specific, the region's schools under the Ministry of Public Education numbered 38,087 boys and 15,114 girls (Uspenskii, 1914: 20). The region's parochial schools numbered 18,966 boys and 7,475 girls (Uspenskii, 1914: 21).

Almost all of the region's primary schools had libraries in them, which typically comprised two major sections: (1) the teacher's section, which stored instructional resources for teaching primary school subjects; (2) the student's section, which stored books for extracurricular reading. Some teacher's sections carried periodicals as well. Note, however, that, most of the time, the student's section in the region's libraries was unable to meet student demand for books, as there were not enough books to accommodate the growing needs of students.

According to the 1911 Census, in the Saint Petersburg Educational District, which incorporated Vologda Governorate as well, one-class schools with a three-year period of study accounted for 73.9 %, and those with a longer period of study – for over 25 %. More specifically, out of the 8,256 schools across the six governorates within the educational district, there were 6,103 schools with a three-year period of study, 1,709 schools with a four-year period of study, 208 schools with a five-year period of study, and 215 schools with a six-year period of study and up (Uspenskii, 1914: 27).

One-class primary schools taught Scripture, reading, writing, and counting. Two-class primary schools, apart from the subjects listed previously, provided instruction also in history, geography, and geometric drawing. This much material was more than enough for those pursuing a three-, four-, or five-year period of study in a one-class school. However, a need was felt in rural society for crafts knowledge. The authorities undertook to meet this need by putting in place crafts courses. In Vologda Governorate, crafts departments and handicraft classes were established in 1912 in 47 schools. Girls were taught handicraft in many parochial schools as well. To be specific, in Vologda Governorate handicraft was taught in 133 parochial schools. The number of those attending this class at the time had reached 3,170. Female teachers provided instruction in handicraft mostly free of charge. The class involved knitting belts, mittens, and stockings, embroidering towels and tray-cloths on canvas, learning to darn stockings, repair clothing, and sew linen, and cutting and sewing dresses (Uspenskii, 1914: 34-35).

Following the Russo-Japanese War, Russian society witnessed an upsurge in patriotic sentiment, which was reflected in an increase in the number of so-called “toy regiments” (Molchanova et al., 2013). During the First World War the patriotic moods of youth reflected in the widescale volunteer movement (Cherkasov et al., 2016).

The state's solicitude for physical education was reflected in the focus on not only promoting play and gymnastics among students but on teaching them military drill. Training learners in gymnastics required a new well-prepared teaching workforce, for this was mainly done by retired soldiers, non-commissioned officers, and other persons without pedagogical training. In Vologda Governorate, gymnastics and drill were taught mainly in urban parish and ministerial schools by visiting instructors who were paid a special salary. In primary zemstvo schools, gymnastics was taught only where the zemstvo provided the funding for the hire of instructors. Gymnastics and drill were taught in parochial schools.



By 1912, out-of-school education was provided in the Saint Petersburg Educational District in an inconsistent fashion. This included public readings and free-access libraries. In Vologda Governorate, public readings with the use of a projector were provided in 242 schools under the Ministry. There were a total of 1,299 public readings, with an audience of 92,411. Thus, public readings were provided in nearly a quarter of the region’s primary schools, with each school drawing an average of 381 listeners and each reading drawing an average of 71 listeners (Uspenskii, 1914: 45). Readings were held in the governorate’s parochial schools too. During the 1912/1913 academic year, readings were organized in 383 parochial schools. Church-based schools held readings on Sundays and holidays, or in the evenings, with projectors employed to display the learning material. A typical reading began, was interspersed, and ended with prayer and chanting. It may be of interest to examine the period’s system of evening and Sunday classes for adults through the example of the city of Vologda. Officially, the course was launched in Vologda on September 18, 1911. The classes were funded by the listeners at a rate of 50 kopecks for males and 25 kopecks for females. These funds covered all the key costs associated with running the class (e.g., rent, heat, and light). Initially, the course drew 160 learners; but, subsequently, 53 of them stopped attending it due to lack of time, in part on account of increased travel time. Consequently, the remaining number of students was 107, with 93 of these being males and 14 females (Losev, 1912: 34). The learners’ age ranged from 17 (the youngest age one was allowed to enroll) to 50. The overwhelming majority of the students (99) were Orthodox Christians, with the rest (8) representing other faiths. The course’s classes were held four times a week: on Tuesdays, Thursdays, and Saturdays from 8:30 p.m. to 10:55 p.m. (three lessons, each 45 minutes long, with two 10-minute breaks); on Sundays from 1:00 p.m. to 4:00 p.m. (four lessons). There were a total of 29 lessons per week. There were three groups of students, with the course having an attendance of 50–70 students per day. Note that in this amount of time the institution typically managed to cover the entire program of study of urban schools, with the instruction method involving lectures and reinforcing discourses about the material covered. In addition, the institution taught methods to maintain a book of accounts in accounting class (Losev, 1912: 35).

In Vologda Governorate, free-access public libraries were in place in 523 primary schools, with a combined book-stock of around 282,000 volumes, a combined membership of over 30,000 subscribers, and a combined total of around 223,000 volumes issued (Uspenskii, 1914: 48).

It is now time to examine some of the key areas in which Vologda Governorate’s public education system achieved success during the period under study. Below is a detailed summary on this as at 1912 (i.e., this covers the results from the first five years since the passage of the law of May 3, 1908).

**Table 3.** State of Affairs in the Public Education Sector in Vologda Governorate as at 1912 (Losev, 1912: 54)

District	Total public schools			Area, km	Population	One school per every	
	Ministry of Public Education	Department of Religious Affairs	Total			square kilometers	residents
Vologodsky	132	81	213	5,306	211,434	25	992
Gryazovetsky	83	76	159	6,901	125,000	43	784
Velsky	81	67	148	21,219	127,859	145	864
Ustyugsky	89	82	171	14,912	173,877	87	1,017
Solvychegodsky	83	73	156	37,253	147,680	238	946
Kadnikovsky	107	89	196	14,500	215,139	74	1,097
Totemsky	118	77	195	20,489	176,871	105	1,133
Nikolsky	163	79	242	32,401	291,445	134	1,204
Ust-Sysolsky	108	54	162	148,775	114,000	918	173
Yarensky	45	63	108	51,005	62,737	473	581
Governorate total	1,009	741	1,750	353,349	1,649,900	202	943

Comparatively not much was needed to institute compulsory primary education in the governorate (Table 4).

**Table 4.** Total Schools and School Units Required to Institute Compulsory Primary Education in Vologda Governorate as at 1912 (Losev, 1912: 55)

District	Total schools	Total school units
Vologodsky	22	84
Gryazovetsky	33	-
Velsky	3	85
Ustyugsky	78	152
Solvychegodsky	-	54
Kadnikovsky	43	65
Totemsky	17	112
Nikolsky	83	239
Ust-Sysolsky	11	41
Yarensky	16	43
Governorate total	351	between 850 and 1,000

The introduction of compulsory education was to take place before 1920 (inclusive). However, there were fears that in certain districts (e.g., Ust-Sysolsky and Solvychegodsky) the measures undertaken would still not result in achieving the objective, considering that the areas were large but lowly populated. The only solution was to have in place an entire network of hostels and lodging-houses at the schools.

Note that in 1912 far from all children of school age (8–11) in the region attended school. Based on reports by public school inspectors, in 1912 out of the region’s 143,508 children of school age, 47,717 attended the schools of the Ministry of Public Education, 27,872 attended the schools of the Department of Religious Affairs, and 66,919 did not attend any school. Out-of-school children accounted for 47 % (Losev, 1912: 71).

Given that the law of May 3, 1908 required that each school unit number 50 students, it is obvious that in 1912 there was a need for at least an additional 1,338 units in order to institute compulsory primary education. The bulk of the region’s out-of-school children were accounted for by girls. This was explained by simple peasant logic: boys were supposed to serve in the army, hold some kind of an office, work in harvesting, etc., while girls were supposed to keep the house in the countryside, where, supposedly, they could well do without schooling. The problem was compounded by the fact that there hardly were in place any hostels and lodging-houses for girls.

In 1913, in light of the establishment of new schools, the situation started to improve, with the need for new school units decreasing by nearly half, down to just 600 units (Ezhegodnik, 1914: 22). That is, by January 1, 1914 the number of schoolchildren in the governorate had to be no less than 100,000. With the start of World War I, the figure started to decrease, and by 1915 it totaled 94,500 students. Thus, there is reason to believe that as at January 1, 1914 Vologda Governorate’s schools were attended by nearly 75 % of its children of school age.

Note that the provision of funding toward primary education in the Russian Empire continued into the early years of World War I. Even in 1916 funding continued to increase – however, the rate at which it increased was now a lot lower than before. The first area to be affected by the war was the nation’s teaching workforce, with a significant number of teachers being called up to join the army or doing so of their own accord. In an attempt to prevent the disruption of the pedagogical process, the Ministry of Public Education undertook to establish an institution of teacher fill-ins. In the conditions of 1916, the Ministry set the objective of preparing the required number of instructors with a view to instituting compulsory primary education in the Russian Empire right after the end of World War I.

Prior to 1912, the Empire had 20 teacher’s institutes and 98 teacher’s seminaries and schools (Iz «Ob"yasnitel'noi zapiski...», 1916: 159). Due to continued shortages of teaching personnel to

staff newly established schools, in the following years the government undertook to set up new educational institutions for teachers. To be specific, in the period 1912–1915 the authorities established an additional 23 teacher's institutes (in 1912 – 6, in 1913 – 6, in 1914 – 6, and in 1915 – 5) and an additional 70 teacher's seminaries (in 1912 – 14, in 1913 – 15, in 1914 – 21, and in 1915 – 20) (Iz «Ob"yasnitel'noi zapiski...», 1916: 159). Despite the more than significant increase in the number of teachers, it still was not enough to accommodate the needs of compulsory primary education. As a result, in 1916 the Ministry undertook to set up five new teacher's institutes and 25 new teacher's seminaries (Iz «Ob"yasnitel'noi zapiski...», 1916: 160). All of the teacher's institutes were for males – there were none for females. In 1916, the Ministry of Public Education brought forward a plan for establishing female teacher's institutes for consideration by the Council of Ministers. What is more, in 1916 the Ministry undertook to work out a draft law on establishing an additional 93 teacher's seminaries in commemoration of the 300<sup>th</sup> anniversary of the reign of the House of Romanov (Iz «Ob"yasnitel'noi zapiski...», 1916: 160-161).

Along with setting up new teacher's seminaries, the Ministry had also sought to put in place, where possible, permanent pedagogical courses for training primary school teachers. During that time, there were 149 two-year and three-year courses of this kind in place (Iz «Ob"yasnitel'noi zapiski...», 1916: 160).

In the period 1912–1915, the Ministry was provided with a special government loan. During that time, it received 25,000,000 rubles toward the purpose of instituting compulsory primary education and 46,416,000 rubles for school construction purposes (Iz «Ob"yasnitel'noi zapiski...», 1916: 165). These funds were used to establish over 20,000 school units, with more schools built to accommodate an additional 20,172 school units. Of note is the way these funds were distributed: in 1912, nine million was allocated toward the purpose of instituting compulsory education, and 10 million toward school construction purposes; in 1913, it was 10 million and 14 million; in 1914, it was three million and 12,416,000; in 1915, it was three million and 10 million (Iz «Ob"yasnitel'noi zapiski...», 1916: 165). In analyzing the statistical data, it is worth remembering that World War I began for Russia quite suddenly, which means that the 1914 budget must have been based on the plans of the Ministry of Public Education and that the slashing of funding for compulsory education in 1914 was not associated with military action but was the result of implementing a pre-established plan. This is also substantiated by the fact that in 1915 compulsory education was funded at the 1914 level. So, why were the authorities so keen on funding school construction work? Here is why –by January 1, 1913, 75 % of the region's schools were housed in buildings that were in an unsatisfactory condition (Ezhegodnik, 1914: 22), which may have been the case across much of the Russian Empire.

By July 1, 1915, the Ministry of Public Education entered into an agreement on instituting compulsory education with 414 district zemstvos and 334 cities, with school networks and financial plans developed for 96 districts in non-zemstvo areas. Among the district zemstvos, which began to develop school networks earlier than the rest of the areas, 15 zemstvos had already finished prep work, providing the population with the required number of schools, with the same result achieved by 33 cities. One gubernial (Voronzhesh) and two district (Nizhny Novgorod and Sterlitamak) zemstvos filed a petition with the Ministry asking for compulsory education to be instituted (Iz «Ob"yasnitel'noi zapiski...», 1916: 165). Thus, in certain regions of Russian Empire the local authorities were ready to institute compulsory education during World War I already.

## **5. Conclusion**

From 1900 to 1916, Vologda Governorate enjoyed a period of dynamic development in its public education sector, which had been facilitated by the nationwide process of preparation for the institution of compulsory education. The number of educational institutions in the region had reached as many as 2,000, with significant gains achieved in the quality of the education system as well. In addition to the focus on setting up new educational institutions, considerable attention was devoted to building new schools, ensuring better pay and working conditions for teachers, and preparing the region's teaching workforce. Despite the complex geographical conditions, namely the region's large relatively lowly populated land mass, the Ministry of Public Education had sought to institute compulsory primary education throughout Vologda Governorate by 1920. To do it justice, these plans were being systematically put into effect. As early as 1914, nearly 75 % of the region's school-age children attended school. The bulk of the region's out-of-school children were

accounted for by peasant girls whose parents viewed education as being of little use to a female in the countryside.

### References

- [A.Ch., 1913](#) – *A.Ch.* (1913). Vvedenie vseobshchego obucheniya i zemskie finansy (do 1910 g.) [A.Ch. The introduction of universal education and Zemstvo finance (until 1910)]. *Zhurnal ministerstva narodnogo prosveshcheniya*. № 9, pp. 279-328. [in Russian]
- [Bunakov, 1864](#) – *Bunakov, N.* (1864). Ocherk narodnogo obrazovaniya Vologodskoi gubernii [Essay on the public education of Vologda province]. *Zhurnal ministerstva narodnogo prosveshcheniya*, 122: 117-132. [in Russian]
- [Cherkasov et al., 2016](#) – *Cherkasov, A.A., Smigel, M., Molchanova, V.S.* (2016). The Glorification of Underage Volunteers in Russian Military Service during World War I. *Propaganda in the World and Local Conflicts*, 5(1): 4-11.
- [Cherkasov et al., 2019](#) – *Cherkasov, A.A., Bratanovskii, S.N., Koroleva, L.A., Zimovets, L.G.* (2019). Development of school education in the Vologda governorate (1725-1917). Part 1. *European Journal of Contemporary Education*. 8(1): 208-214.
- [Cherkasov et al., 2019a](#) – *Cherkasov, A.A., Bratanovskii, S.N., Koroleva, L.A., Zimovets, L.G.* (2019). Development of school education in the Vologda governorate (1725-1917). Part 2. *European Journal of Contemporary Education*. 8(2): 418-424.
- [Cherkasov et al., 2019b](#) – *Cherkasov, A.A., Bratanovskii, S.N., Koroleva, L.A., Zimovets, L.G.* (2019). Development of school education in the Vologda governorate (1725-1917). Part 3. *European Journal of Contemporary Education*. 8(3): 627-637.
- [Cherkasov, 2011](#) – *Cherkasov, A.A.* (2011). All-Russian Primary Education (1894-1917): Developmental Milestones. *Social Evolution & history*, 2(10): 138-149.
- [Dlya istorii, 1860](#) – *Dlya istorii vologodskoi direktsii uchilishch* [For the history of the Vologda school directorate]. *Pamyatnaya knizhka dlya Vologodskoi gubernii na 1860 god*. Vologda, 1860, 65-104. [in Russian]
- [Ermachkov et al., 2018](#) – *Ermachkov, I.A., Koroleva, L.A., Svechnikova, N.V., Gut, J.* (2018). The Plague in the Caucasus in 1801–1815 years: Part I. *Bylye Gody*, 47(1): 120-129.
- [Ermachkov et al., 2018a](#) – *Ermachkov, I.A., Koroleva, L.A., Svechnikova, N.V., Gut, J.* (2018). The Plague in the Caucasus in 1801–1815 years: Part II. *Bylye Gody*, 48(2): 558-569.
- [Ermachkov et al., 2018b](#) – *Ermachkov, I.A., Koroleva, L.A., Svechnikova, N.V., Gut, J.* (2018). General Ermolov and His Role in the Evolution of Public Health Service in the Caucasus. *Bylye Gody*, 49(3): 1037-1045.
- [Ezhegodnik, 1914](#) – *Ezhegodnik Vologodskoi gubernii na 1914 g.* [Yearbook of the Vologda province for 1914]. Vologda, 1914. [in Russian]
- [Istoricheskii obzor, 1902](#) – *Istoricheskii obzor deyatel'nosti Ministerstva narodnogo prosveshcheniya. 1802-1902* [The historic overview of the activities of the Ministry of Education. 1802-1902]. Sost. S.V. Rozhdestvenskii. SPb., 1902. 840 p. [in Russian]
- [Ivanov, 1879](#) – *Ivanov, A.* (1879). Materialy dlya istorii zemskoi deyatel'nosti po narodnomu obrazovaniyu v Vologodskoi gubernii: Sravnitel'no-statisticheskoe obozrenie po narodnomu obrazovaniyu v Vologodskom uezde za 9-letnee sushchestvovanie zemstva v gubernii [Materials for the history of zemstvo activities on public education in Vologda province: Comparative statistical review of public education in Vologda district for the 9-year existence of the zemstvo in province]. *Vologodskii sbornik*. T.1. Vologda. [in Russian]
- [Iz «Ob"yasnitel'noi zapiski...», 1916](#) – *Iz «Ob"yasnitel'noi zapiski k smete ministerstva narodnogo prosveshcheniya na 1916 g.»* (nachal'noe obrazovanie, uvelichenie finansirovaniya v 1915g.!!) [From the “Explanatory Note to the estimate of the Ministry of Education for 1916” (primary education, increased funding in 1915!!)]. *Zhurnal ministerstva narodnogo prosveshcheniya*. 1916. № 8, pp. 289-306. [in Russian]
- [Kobakhidze, 2015](#) – *Kobakhidze, E.I.* (2015). Zakonodatel'stvo 1840–1870-kh gg. v oblasti obrazovaniya kak faktor integratsii kavkazskoi shkoly v rossiiskuyu sistemu narodnogo prosveshcheniya [The legislation of 1840-1870-ies in the sphere of education as a factor of integration of the Caucasian school in the Russian system of public education]. *Istoricheskie*,



*filosofskie, politicheskie i yuridicheskie nauki, kul'turologiya i iskusstvovedenie. Voprosy teorii i praktiki*, 10. Ch. 3. pp. 87-90. [in Russian]

[Kodrlé, 2016](#) – *Kodrlé, S.V.* (2016). Chastnaya shkola dorevolutsionnoi Rossii kak kul'turno-istoricheskii i obshchestvennyi fenomen [The private school of pre-revolutionary Russia as a cultural, historical and social phenomenon]. *Aktual'nye problemy gumanitarnykh i estestvennykh nauk*, 8-2: 129-133. [in Russian]

[Kolos, 2015](#) – *Kolos, L.N.* (2015). Razvitie nachal'nogo zhenskogo obrazovaniya v Vologodskoi gubernii vo vtoroi polovine XIX – nachale XX veka [The development of primary female education in the Vologda province in the second half of the XIX – early XX centuries]. Vologda. [in Russian]

[Kornilova et al., 2016](#) – *Kornilova, I.V., Magsumov, T.A., Shakirov, R.R.* (2016). Female teachers training in educational grades of women's gymnasia in kazan in the last third of the XIX - Early XX centuries. *European Journal of Contemporary Education*. 16(2): 217-228.

[Losev, 1912](#) – *Losev, S.* (1912). O nizshikh uchebnykh zavedeniyakh Vologodskoi gubernii za 1911 god [About the lower educational institutions of the Vologda province for 1911]. Vologda. [in Russian]

[Magsumov et al., 2018](#) – *Magsumov, T.A., Artemova, S.F., Ustinova, O.V., Vidishcheva, E.V.* (2018). Public education system in the Caucasus region in the 1850s: Unification and regulation of educational process. *European Journal of Contemporary Education*. 7(3): 598-607.

[Mamadaliyev et al., 2019](#) – *Mamadaliyev, A.M., Ludwig, S.D., Miku, N.V., Médico, A.* (2019). The German System of Public Education in the Period between the 15th and early 20th centuries. Part 1. *European Journal of Contemporary Education*, 2019, 8(2): 445-453.

[Molchanova et al., 2013](#) – *Molchanova, V., Cherkasov, A.A., Smigel, M.* (2013). Youth and Patriotic Sentiments during the Reign of Emperor Nicholas II. *Bylye Gody*. 30(4): 88-93.

[Natolochnaya et al., 2018](#) – *Natolochnaya, O.V., Miku, N.V., Zulfugarzade, T.E., Médico, A.* (2018). Highland schools in the Caucasus: Historical background. *European Journal of Contemporary Education*. 7(3): 608-614.

[Otto, 1866](#) – *Otto, N.* (1866). Uchilishcha i gramotnost' v Vologodskoi gubernii do otkrytiya gimnazii [Vocational schools and literacy in the Vologda province before the opening of the gymnasiums]. *Zhurnal ministerstva narodnogo prosveshcheniya*, 10: 1-198. [in Russian]

[Pamyatnaya knizhka, 1861](#) – Pamyatnaya knizhka Vologodskoi gubernii na 1861 g. [The memorial book of the Vologda province for 1861 year]. Vologda, 1861. [in Russian]

[Pamyatnaya knizhka, 1864](#) – Pamyatnaya knizhka Vologodskoi gubernii na 1864 g. [The memorial book of the Vologda province for 1864 year]. Vologda, 1864. [in Russian]

[Pamyatnaya knizhka, 1870](#) – Pamyatnaya knizhka Vologodskoi gubernii na 1870 g. [The memorial book of the Vologda province for 1870 year]. Vologda, 1870. [in Russian]

[Pamyatnaya knizhka, 1880](#) – Pamyatnaya knizhka Vologodskoi gubernii na 1881 g. [The memorial book of the Vologda province for 1881 year]. Vologda, 1880. [in Russian]

[Pamyatnaya knizhka, 1893](#) – Pamyatnaya knizhka Vologodskoi gubernii na 1893 i 1894 gg. [The memorial book of the Vologda province for 1893 and 1894 years]. Vologda, 1893. [in Russian]

[Pamyatnaya knizhka, 1899](#) – Pamyatnaya knizhka Vologodskoi gubernii na 1899 g. [The memorial book of the Vologda province for 1899 year]. Vologda, 1899.

[Peretyatko, Zulfugarzade, 2017](#) – *Peretyatko, A.Y., Zulfugarzade, T.E.* (2017). Project of reforms proposed for the don public education in the first half of 1860: A.M. Dondukov-Korsakov, Kh.I. Popov, N.I. Krasnov. *European Journal of Contemporary Education*. 6(4): 817-829.

[Peretyatko, Zulfugarzade, 2017a](#) – *Peretyatko, A.Y., Zulfugarzade, T.E.* (2017). Higher and secondary education of the don cossacks in the context of the epoch: The time of the great reforms. *European Journal of Contemporary Education*. 6(2): 367-377.

[Podgotovitel'nye raboty..., 1911](#) – Podgotovitel'nye raboty po vvedeniyu vseobshchego obucheniya v Rossii [Preparatory work on the introduction of universal education in Russia]. *ZhMNP*. 1911. № 1. Pp. 356-384. [in Russian]

[Popov, 1885](#) – *Popov, E.A.* (1885). Svyatitel' Stefan Velikopermskii [St. Stefan Wielkopermsky]. Perm'. [in Russian]

[Shevchenko et al., 2016](#) – *Shevchenko, N.A., Vidishcheva, E.V., Emelyanova, O.V.* (2016). The Establishment of the System of Public Education in the Caucasus (1802–1917 years): the Characteristic Features. *Bylye Gody*, 40(2): 363-372.



[Sukhomlinov, 1865](#) – *Sukhomlinov, M.I.* (1865). Materialy dlya istorii obrazovaniya Rossii v tsarstvovanie imperatora Aleksandra I [Materials for the history of education of Russia in the reign of Emperor Alexander I]. SPb. [in Russian]

[Uspenskii, 1914](#) – *Uspenskii, M.I.* (1914). Nachal'noe narodnoe obrazovanie v Sankt-Peterburgskom uchebnom okruge: statisticheskii ocherk [The initial public education at the St. Petersburg school district: statistical review]. SPb. [in Russian]

[Vorotnikova, 2015](#) – *Vorotnikova, N.S.* (2015). Istoricheskii opyt nachal'nogo obrazovaniya v derevne Vologodskoi gubernii vo vtoroi polovine XIX – nachale XX veka [The historical experience of primary education in the village of the Vologda province in the second half of the XIX – early XX centuries]. Vologda. [in Russian]

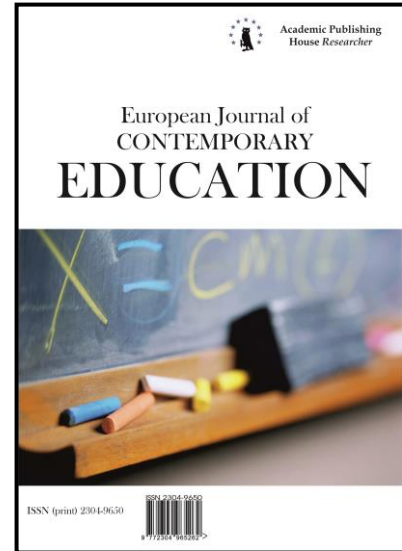
[Vorotnikova, 2015](#) – *Vorotnikova, N.S.* (2015). Ustroistvo sel'skogo obrazovaniya v zemskikh shkolakh vologodskoi gubernii vo vtoroi polovine XIX – nachale XX veka [The device of rural education in Zemstvo schools of the Vologda province in the second half of the XIX – early XX centuries]. *Vestnik Cherepovetskogo gosudarstvennogo universiteta*, 8(69): 118-121. [in Russian]

[Vorotnikova, 2016](#) – *Vorotnikova, N.S.* (2016). Istochnikovedcheskii analiz nachal'nogo obrazovaniya v derevne Vologodskoi gubernii vo vtoroi polovine XIX – nachale XX veka [The source analysis of primary education in the village of the Vologda province in the second half of the XIX – early XX centuries]. *Sovremennaya nauka: aktual'nye problemy teorii i praktiki. Seriya: Gumanitarnye nauki*, 7: 11-18. [in Russian]



Copyright © 2019 by Academic Publishing House Researcher s.r.o.  
All rights reserved.  
Published in the Slovak Republic  
European Journal of Contemporary Education  
E-ISSN 2305-6746  
2019, 8(4): 984-992  
DOI: 10.13187/ejced.2019.4.984  
[www.ejournal1.com](http://www.ejournal1.com)

**WARNING!** Article copyright. Copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of the violation of the author(s) rights will be pursued on the basis of international legislation. Using the hyperlinks to the article is not considered a violation of copyright.



## INCFAR: Characteristics and Challenges (A Fifth Anniversary Tribute)

Vasilii V. Tarakanov<sup>a,\*</sup>, Marina A. Ponomareva<sup>b</sup>

<sup>a</sup> Volgograd State University, Volgograd, Russian Federation

<sup>b</sup> Financial University under the Government of the Russian Federation, Moscow, Russian Federation

### Abstract

This paper examines the diverse activity of the International Network Center for Fundamental and Applied Research (INCFAR) in conjunction with the institution's fifth anniversary. The authors describe the process of creation and reorganization of the INCFAR Laboratories and discuss the Center's cooperation with other research-and-education establishments around the world. The paper includes an analysis of the key areas of research the Center is currently focused on.

The work's materials are grounded in some specialized literature and a body of research literature, as well as certain resources available on the Center's website. In working on this paper, the authors made wide use of the descriptive, statistical, and problem-historical methods, which helped put together a comprehensive picture of the relevant events in their historical sequence.

The authors conclude by stating that today the five-year-old INCFAR is a well-ramified research establishment. In addition to its efficient labs and spectacular publication activity, the Center is distinguished by considerable collaboration activity, possesses resources of its own in the area of dissemination of scholarly information, and runs a resource for indexing scholarly periodicals. All this helps make the outcomes of the Center's scholarly work as visible to the potential reader as possible, which, in turn, helps boost the possibility that these works will be known to wider scholarly and pedagogical communities.

**Keywords:** International Network Center for Fundamental and Applied Research (INCFAR), international scholarly collaboration, science studies, history, pedagogics, military sciences, intellectual capital, pedagogical innovations.

---

\* Corresponding author

E-mail addresses: [v.tarakanov@volsu.ru](mailto:v.tarakanov@volsu.ru) (V.V. Tarakanov)

## 1. Introduction

Today's increasingly global world is changing at a fast pace, which, naturally, is causing change in science and its forms as well. Truly, what just recently seemed immutable can easily change and take on a new form these days. As commonly known, networked collaboration is a practice that has been in wide use worldwide for decades. Yet, creating a networked scientific establishment may well look like something totally novel, as an institution of this kind does not require substantial funding that may be needed to maintain a campus. Let us explore this experience through the example of the International Network Center for Fundamental and Applied Research (INCFAR), a successful establishment which has been in operation for five years now.

## 2. Materials and methods

The work's materials are grounded in the company's business documentation, certain resources available on its website (<http://incfar.net>), a set of international scientometric databases, a set of journals run by Academic Publishing House Researcher s.r.o., some specialized literature, and a body of research literature.

In working on this paper, the authors made wide use of the descriptive, statistical, and problem-historical methods, which helped put together a comprehensive picture of the relevant events in their historical sequence.

## 3. Results

### 3.1. INCFAR's history and symbology

The International Network Center for Fundamental and Applied Research (INCFAR) was founded on July 27, 2014. The objective behind setting up the INCFAR was to bring together researchers based on networked collaboration among those who are united by a single research topic but reside in different regions or countries (networked cooperation), rather than do so based on a territorial principle (e.g., researchers from the same region gathered on one campus).

In the fall of 2014, the Center comprised three labs: (1) Laboratory for World Civilizations (headed by A.A. Cherkasov); (2) Laboratory for Military Research (headed by N.V. Mityukov); (3) Laboratory for Economic and Social Interaction (headed by T.E. Gvarliani). In 2017, the last two labs were joined into a single entity to form the Laboratory for Professional and Pedagogical Training (headed by N.V. Mityukov). As of October of 2019, the Center, formally registered in the US, employs 20 researchers from seven different countries (Russia, Serbia, Slovakia, Spain, Ghana, Ukraine, and Israel). Two of the Center's members are also members of the American Historical Association (USA) (A.A. Cherkasov and A.Yu. Peretyatko). One of its members is also a member of the History of Education Society (UK) (T.A. Magsumov) (Tarakanov, Ludwig, 2019: 915). Another of its members is also a member of the Royal Naval League of Spain (Spain) (N.V. Mityukov). Based on data for October of 2019, the Center has 197 publications in Scopus and 159 publications in WoS. Its h-index in Scopus is 12.

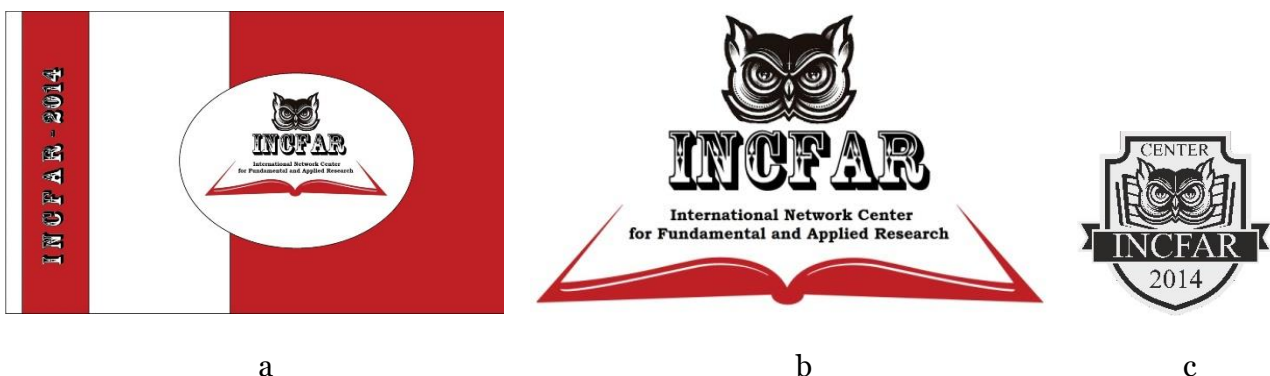
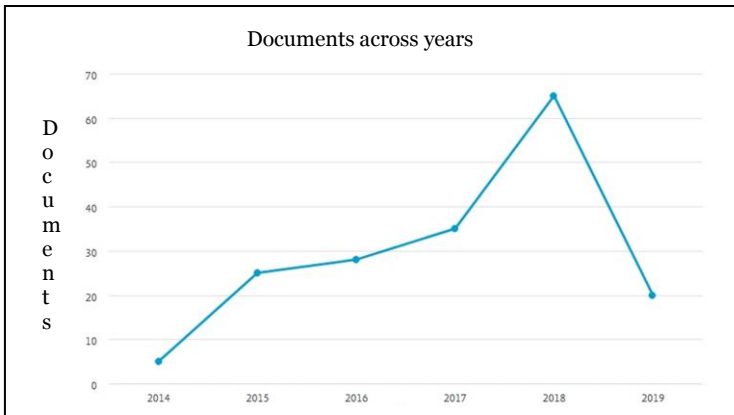
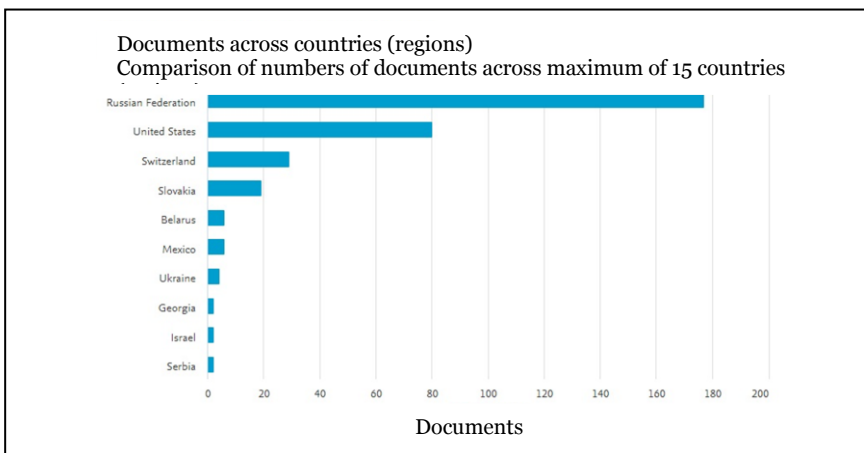


Fig. 1. INCFAR's symbology (a – flag, b – logo, c – badge).



**Fig. 2.** Number of publications by the INCFAR based on Scopus data (as of September of 2019).



**Fig. 3.** Distribution of publications across countries based on Scopus data (as of September of 2019).

During the period 2016–2019, Head of the INCFAR Alexander Cherkasov, Doctor of Historical Sciences, 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. 4.** 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.A. Cherkasov second right).

### 3.2. INCFAR’s publication activity

One of the key indicators of the Center’s performance is its publication activity. During the period 2015–2017, reports on the Center’s research activity included all of its publications released in journals indexed in a variety of scientometric and bibliometric systems, monographs, and

collections of scholarly works. Starting in 2018, the research activity report has covered only works published in journals that are indexed in Scopus and WoS.

Given that the Center currently runs two different labs (Laboratory for World Civilizations and Laboratory for Professional and Pedagogical Training), most of its publication activity, accordingly, is associated with the following two major research areas – history and pedagogics (including the history of pedagogics).

The INCFAR is not just a collaboration effort that brings together 20 researchers from Europe, Asia, and Africa. Most of its staff members are also experienced teacher practitioners engaged in the development and implementation of various innovations in their professional instructing activity. In this regard, the scholarly interests of staff at both of the INCFAR Labs cover relevant issues in pedagogics such as developing new methodologies on teaching various disciplines in secondary school and college and enhancing teachers' skill levels (Neskoromnykh et al., 2017), implementing a value-based approach in the educational process (Degtyarev et al., 2019), developing media education, and many others.

The Laboratory for World Civilizations is mainly focused on exploring issues related to the history of the Caucasus, the history of slavery and slave trade in the Black Sea region, military history (e.g., the Caucasus theater of military action in the period from the 18<sup>th</sup> to the early 20<sup>th</sup> centuries), and some other subjects. The other lab, the Laboratory for Professional and Pedagogical Training, is chiefly concerned with investigating issues of present-day education, as well as the history of development of the education system in the Russian Empire, the USSR, and the countries of Europe, including issues of comparative pedagogics.

Since it may be rather time-consuming trying to examine the Center's entire publication activity in a single paper, it makes sense to just focus on the top 25 most cited INCFAR papers based on Scopus and those based on WoS data. It is worth remembering that far from all of the peer-reviewed journals are indexed concurrently in both of those databases, which leaves room for discrepancies in interpretation.

The Center's most cited papers can be divided into three major groups.

The first group is focused on issues related to the Caucasus War (1801–1864) and the way of life and traditions of the mountaineer community in the Caucasus (with a separate focus on slave trade) (Cherkasov et al., 2013; Cherkasov et al., 2014; Cherkasov et al., 2014a; Cherkasov et al., 2015; Cherkasov et al., 2015a; Cherkasov et al., 2015b; Cherkasov et al., 2016; Cherkasov et al., 2016a; Cherkasov et al., 2016b; Cherkasov et al., 2017; Cherkasov et al., 2017a; Cherkasov et al., 2017b; Cherkasov et al., 2018; Cherkasov et al., 2018a; Cherkasov et al., 2018b; Ermachkov et al., 2018; Ermachkov et al., 2018a; Gvarliani et al., 2017; Ivantsov et al., 2015; Karataev et al., 2016; Magsumov, 2016; Smigel, Cherkasov, 2016).

The second group of papers covers issues related to public education in the Russian Empire, both at its center and on its periphery (Aminov et al., 2018; Cherkasov et al., 2019; Cherkasov, Smigel, 2016; Magsumov, 2014; Magsumov, 2015; Shevchenko et al., 2016; Shevchenko et al., 2018; Magsumov, 2017; Magsumov, 2018a; Magsumov, 2018b; Magsumov et al., 2018; Magsumov, Nizamova, 2015; Magsumov, Nizamova, 2016; Molchanova et al., 2013).

The third group incorporates papers that are focused on the social history of the Don Cossack Host (Peretyatko, 2016; Peretyatko, 2017; Peretyatko, Zulfugarzade, 2017; Peretyatko, Zulfugarzade, 2017a), as well as those dealing with a wide and diverse range of issues, from networked activity (Mingaleva et al., 2017) and cinematography (Fedorov et al., 2017) to historiography (Polyakova, 2015).

Many of the works by the Center's staff members are of an interdisciplinary nature. This, above all, is the case with historical research. In essence, this is vivid testimony to effective interaction between historian researchers and members of other scholarly areas, including economics, law, pedagogics, linguistics, etc. In its scholarly activity the Center actively engages specialists from institutions of higher learning and research organizations in the US, Canada, Switzerland, Ukraine, Russia, Ghana, Slovakia, Belarus, Moldova, and some other countries. Among the institutions partnered with the INCFAR are Geneva University (Switzerland) and Tel Aviv University (Israel). This kind of cooperation has helped take work on many of the scholarly issues within the sphere of the INCFAR's professional interests to a whole new level.



**3.3. The Labs' staff members and their scientometric performance**

Tables 1 and 2 list the staff at the INCFAR Labs and data on their publication activity (data as at October 1, 2019).

**Table 1.** Laboratory for World Civilizations

No.	Name	Position	Scopus			WoS		
			Total papers	Total citations	h-index	Total papers	Total citations	h-index
1	Cherkasov, A.A.	Head of the Lab	45	220	9	92	170	7
2	Smigel, M.	Deputy Head of the Lab	27	136	8	26	72	5
3	Lysenko, Yu.A.	Leading Researcher	14	12	2	12	8	1
4	Ter-Oganov, N.K.	Leading Researcher	6	5	2	6	6	2
5	Degtyarev, S.I.	Leading Researcher	19	13	2	20	12	2
6	Natolochnaya, O.V.	Senior Researcher	13	39	4	18	15	2
7	Mamadaliyev, A.M.	Senior Researcher	16	10	2	20	18	3
8	Taran, K.V.	Senior Researcher	12	21	3	13	14	3
9	Ermachkov, I.A.	Senior Researcher	10	23	3	15	25	3
10	Polyakova, L.G.	Junior Researcher	12	13	2	12	9	2
Overall value for the Lab			174	492	37	234	349	30
Average value per single staff member			17.4	49.2	3.7	23.4	34.9	3

**Table 2.** Laboratory for Professional and Pedagogical Training

No.	Name	Position	Scopus			WoS		
			Total papers	Total citations	h-index	Total papers	Total citations	h-index
1	Mityukov, N.V.	Head of the Lab	23	23	3	25	26	3
2	Magsumov, T.A.	Deputy Head of the Lab	28	168	9	24	20	2
3	Gvarliani, T.E.	Leading Researcher	11	24	3	15	20	3
4	Rajović, G.	Leading Researcher	17	18	3	19	22	2
5	Peretyatko, A.Yu.	Senior Researcher	17	26	4	19	38	4
6	Nizamova, M.S.	Senior Researcher	3	23	2	3	4	1
7	Sarfo, J.O.	Researcher	4	17	1	2	11	1
8	Mitrofanov, A.F.	Researcher	2	3	1	1	3	1
9	Karataev, V.B.	Junior Researcher	12	20	3	12	19	3

10	Shevchenko, N.A.	Junior Researcher	5	19	2	5	18	2
11	Molchanova, V.S.	Junior Researcher	31	151	9	25	109	7
Overall value for the Lab			153	492	40	150	290	29
Average value per single staff member			13.9	44.7	3.6	13.6	26.3	2.6
Average value for the INCFAR			15.5	46.8	3.6	18.2	30.4	2.8

The core of the center’s team is made up of several former instructors of the Department of National History at Sochi State University (A.A. Cherkasov, O.V. Natolochnaya, A.M. Mamadaliev, and K.V. Taran), as well as several members of the Student Science Club For Regional Studies Through History (Ermachkov et al., 2018), run by that department (I.A. Ermachkov, L.G. Polyakova, V.B. Karataev, and N.A. Shevchenko).

**Table 3.** INCFAR’s Current Scopus and WoS Stats

	Scopus	WoS
Authors	20	20
Papers	197	159
Citations	491	219
h-index	12	7

**3.4. Present-day state of affairs at the INCFAR**

Today, five years later, the Center comprises the following four major functional units:

- Laboratory for World Civilizations;
- Laboratory for Professional and Pedagogical Training;
- Academic Publishing House Researcher s.r.o.;
- Scientific Information Department.

The two labs have already been examined above. As regards Academic Publishing House Researcher s.r.o., the start of the institution’s actual publishing experience is credited to Alexander Cherkasov and goes back as early as 1992. The same year is when the publishing house was actually founded (Tarakanov, Ludwig, 2019: 915). At present, the institution runs as many as 52 scholarly journals in Slovakia alone, with two of these indexed in Scopus, three – in WoS, and three – in Chemical Abstracts Service. The publishing house runs several narrowly specialized journals as well, including Propaganda in the World and Local Conflicts (focused on military propaganda), Slavery: Theory and Practice (slavery), and Bylye Gody (the history of modern-era Russia and Europe).

The Scientific Information Department is concerned with the following two major areas:

The first – the technical support of the full-text english-language database Open Academic Journals Index (OAJI). The database indexes open access journals.

Official website: <http://oaji.net>

The 2nd program – Eastern European Scientific Information Agency. EESIA reviews the results of scientific research in the field of history and archeology.

Official website: <https://eesiag.com>

The Open Academic Journals Index database was created on June 11, 2013. At present, it incorporates 2,765 scholarly journals from 113 countries. It currently includes over 150,000 peer-reviewed papers, with its number of authors exceeding 280,000. The database is equipped with functionality that helps perform a broad and inclusive search across papers, journals, and authors (<http://oaji.net/library-oaji.html>). It incorporates a service that automatically calculates the value for a journal based on the CGIJ system. The maximum CGIJ value is 1,000. This value can be achieved if:

The journal, which uploaded more than 10 of its articles, and indexed nowhere – 0, 101

The journal, which uploaded over 100 of its articles and indexed nowhere – 0, 201

The journal, which uploaded more than 500 of its articles and indexed nowhere – 0, 350

The journal is indexed in DOAJ + o, 150 to the CGIJ

The journal is indexed in Scopus + o, 250 to the CGIJ

The journal is indexed in WoS + o, 250 to the CGIJ (<http://oaji.net/>).

The Eastern European Scientific Information Agency project was launched on April 30, 2018. That day saw the publication of the first news item on the information resource. The project aims to familiarize international (above all, English-speaking) audiences with news about Eastern European science. Going forward, the agency's resource is expected to become a resource for national news portals related to issues of science. At present, the agency gathers news only in the area of history, mainly from journals dealing with Eastern European history. In the near future, it may be possible to expand the agency's news feeds to include other sciences as well. The project differs from national news portals in that its resource offers a complete bibliographic description of all news items it carries, styles them in English, and provides an active link to the information source.

### Conclusion

Today, after five years since its foundation, the INCFAR is a well-ramified research establishment. In addition to its efficient labs and spectacular publication activity, the Center is distinguished by considerable collaboration activity, possesses resources of its own in the area of dissemination of scholarly information, and runs a resource for indexing scholarly periodicals. All this helps make the outcomes of the Center's scholarly work as visible to the potential reader as possible, which, in turn, helps boost the possibility that these works will be known to wider scholarly and pedagogical communities.

The implementation of networked research projects has helped bring together a large number of researchers from various countries and regions. This, most importantly, is going to enable researchers from Eastern Europe to finally overcome the state of methodological confusion they have been in for several decades now, with the issue having had a truly negative effect on Russian socio-humanitarian science, resulting in its narrative descriptiveness.

### References

- [Aminov et al., 2018](#) – Aminov, T., Magsumov, T., Sayakhov, R., Nasipov, I., Aitov, V. (2018). Pedagogical potential of muslim religious sources in overcoming physical and mental and psychological trials. *Journal of Social Studies Education Research*. 9(2): 266-282.
- [Cherkasov et al., 2013](#) – Cherkasov, A.A., Ryabtsev, A.A., Menkovsky, V.I., Tarakanov, V.V., Navrotsky, A.V. (2013). By Royal Authority (Investigation Data, Concerning Mines Theft in Fort Navaginsky of the Black Sea Coastal Frontier. 1851). *Bylye Gody*. 27(1): 5-15.
- [Cherkasov et al., 2014](#) – Cherkasov, A.A., Menkovsky, V.I., Ivantsov, V.G., Ryabtsev, A.A., Molchanova, V.S., Natolochnaya, O.V. (2014). The "Nobility" and "Commoners" in Ubykh Society: The Reasons behind the Social Conflict. *Bull. Georg. Natl. Acad. Sci*. 8(3): 64-72.
- [Cherkasov et al., 2014a](#) – Cherkasov, A.A., Šmigel', M., Ivantsov, V.G., Ryabtsev, A.A., Molchanova, V.S. (2014). Hillmen of the Black Sea Province (early XIX century): Geography, demography, antropology. *Bylye Gody*. 32 (2): 150-154.
- [Cherkasov et al., 2015](#) – Cherkasov, A.A., Ivantsov, V.G., Ustinovich, E.S., Kryukova, N.I., Molchanova, V.S. (2015). The Moving of the Ubykhs to the Russian Service as a Result of the Peace Initiatives in the First Half of the 1840s years. *Bylye Gody*. (3). 37: 541-548.
- [Cherkasov et al., 2015a](#) – Cherkasov, A.A., Ivantsov, V.G., Smigel, M., Molchanova, V.S. (2015). The Daily Life and Morals of Circassian Society: A Historical-Comparative Investigation based on sources from the period between the Mid-16th and the First Half of the 19th centuries. *Brukenenthal. Acta Musei*, X. 1: 76-77.
- [Cherkasov et al., 2015b](#) – Cherkasov, A.A., Shmigel, M., Bratanovskii, S.N., Molchanova, V.S. (2015). Jikis and Jiketi in Conditions of War and Peace (1840–1860 years). *Bylye Gody*, 38(4): 888-893.
- [Cherkasov et al., 2016](#) – Cherkasov, A.A., Ivantsov, V.G., Metreveli, R.V., Molchanova, V.S. (2016). The Destruction of the Christian Historical-Cultural Heritage of the Black Sea Area: Trends and Characteristics (the Late 18th and First Half of the 19th centuries). *Annales Ser. hist. sociol.* 26(1): 1-12.
- [Cherkasov et al., 2016a](#) – Cherkasov, A.A., Ivantsov, V.G., Shmigel, M., Molchanova, V.S. (2016). Demographic characteristics of the Aristocratic Abkhazia in 1800–1860 years. *Bylye Gody*, (1). 39: 53-66.

[Cherkasov et al., 2016b](#) – Cherkasov, A.A., Ivantsov, V.G., Smigel, M., Molchanova, V.S. (2016). The Demographic Characteristics of the Tribes of the Black Sea Region in the first half of the XIX century. *Bylye Gody*. (2), 40: 382-391.

[Cherkasov et al., 2017](#) – Cherkasov, A.A., Bratanovskii, S.N., Valleau, A. (2017). The losses of the Russian army in Transcaucasia during the Russo-Turkish war (1828-1829): The historical-statistical study. *Rusin*. 50(4): 38-60.

[Cherkasov et al., 2017b](#) – Cherkasov, A.A., Ivantsov, V.G., Smigel, M., Molchanova, V.S. (2017). The list of captives from the Turkish vessel belifte as a source of information on the slave trade in the north-western caucasus in the early 19<sup>th</sup> century. *Annales-Anali za Istrske in Mediteranske Studije - Series Historia et Sociologia*. 27(4): 851-864.

[Cherkasov et al., 2017a](#) – Cherkasov, A.A., Ivantsov, V.G., Smigel, M., Molchanova, V.S. (2017). The Losses of the Russian army during the Caucasian war (1801-1864): Historical and statistical research. *Bylye Gody*. 43(1): 68-85.

[Cherkasov et al., 2018](#) – Cherkasov, A.A., Koroleva, L.A., Bratanovskii, S.N., Valleau, A. (2018). The Abkhazian and Mingrelian principalities: Historical and demographic research. *Vestnik Sankt-Peterburgskogo Universiteta, Istoriya*. 63(4): 1001-1016.

[Cherkasov et al., 2018a](#) – Cherkasov, A.A., Smigel, M., Bratanovskii, S., Valleau, A. (2018). The Circassian aristocracy in the late XVIII – the first half of XIX centuries: The social structure of society. *Bylye Gody*. 47(1): 88-96.

[Cherkasov et al., 2018b](#) – Cherkasov, A.A., Koroleva, L.A., Bratanovskiy, S.N., Smigel, M. (2018). The Evolution of the Circassians' Oaths in the Context of Changing Religious Views in 1800-1855. *Vestnik Volgogradskogo gosudarstvennogo universiteta. Seriya 4, Istoriya. Regionovedenie. Mezhdunarodnye otnosheniya* [Volgogradskii Gosudarstvennyi Universitet – Vestnik – Seriya 4 – Istoriya, Regionovedenie, Mezhdunarodnye otnosheniya], 23(4): 40-50.

[Cherkasov et al., 2019](#) – Cherkasov, A.A., Bratanovskii, S.N., Koroleva, L.A., Zimovets, L.G. (2019). Development of school education in the Vologda governorate (1725-1917). Part 1. *European Journal of Contemporary Education*. 8(1): 208-214.

[Cherkasov, Smigel, 2016](#) – Cherkasov, A.A., Smigel, M. (2016). Public education in the russian empire during the last third of the XIX century: Parish schools. *European Journal of Contemporary Education*. 18(4): 418-429.

[Degtyarev et al., 2019](#) – Degtyarev, S.I., Zavorodnia, V.M., Slavko, A.S., Polyakova, L.G. (2019). Implementing a Value-Oriented Approach to Training Law Students. *European Journal of Contemporary Education*. 8(3): 677-691.

[Ermachkov et al., 2018](#) – Ermachkov, I.A., Koroleva, L.A., Svechnikova, N.V., Gut, J. (2018). The plague in the Caucasus in 1801-1815 years: Part I. *Bylye Gody*. 47(1): 120-129.

[Ermachkov et al., 2018a](#) – Ermachkov, I.A., Koroleva, L.A., Svechnikova, N.V., Gut, J. (2018). The plague in the caucasus in 1801-1815 years: Part II. *Bylye Gody*. 48(2): 558-569.

[Ermachkov et al., 2018b](#) – Ermachkov, I.A., Ekimov, A.I., Vazerova, A.G. (2018). Students' humanitarian science club activity in 2006-2012. *European Journal of Contemporary Education*. 7(2): 286-290.

[Fedorov et al., 2017](#) – Fedorov, A., Levitskaya, A., Gorbatkova, O., Mamadaliev, A. (2017). Directions, Objectives, and Author's Concepts of Audiovisual Media Interpretations of School and University Theme in the Soviet Cinema of the "Thaw" Period (1956-1968). *European Journal of Contemporary Education*. 7(1): 82-96.

[Gvarliani et al., 2017](#) – Gvarliani, T.E., Koroleva, L.A., Svechnikova, N.V. (2017). The formation of the Russian medical activities in the caucasus in 1736-1799. *Bylye Gody*. 43(1): 39-47.

[Ivantsov et al., 2015](#) – Ivantsov, V.G., Cherkasov, A.A., Tarakanov, V.V., Molchanova, V.S., Natolochnaya O.V. (2015). Russian and foreign authors of the late 18<sup>th</sup> - 19<sup>th</sup> Centuries on the North-West and Central Caucasus (the historiographical and historical aspects): Part 1. *Bylye Gody*. 35(1): 70-80.

[Karataev et al., 2016](#) – Karataev, V.B., Gordeev, I.A., Zimovets, L.G. (2016). Azov cossack host on the territory of the black sea Coastline. *Bylye Gody*. 40(2): 392-397.

[Magsumov, 2014](#) – Magsumov, T.A. (2014). Main approaches to the study of historical and educational process. *Bylye Gody*. 34(4): 720-726.



[Magsumov, 2015](#) – *Magsumov, T.A.* (2015). The additional professional training in the late Russian empire. *Bylye Gody*. 36(2): 327-337.

[Magsumov, 2016](#) – *Magsumov, T.A.* (2016). The Jigets: A great history of a small people. *Rusin*. 45(3): 247-253.

[Magsumov, 2017](#) – *Magsumov, T.A.* (2017). Family and school in Russia at the beginning of the 20th century: Attempts to bridge the gap. *European Journal of Contemporary Education*. 6(4): 837-846.

[Magsumov, 2018a](#) – *Magsumov, T.A.* (2018). Apprenticeship in secondary vocational schools during the economic modernization in late imperial Russia. Part 1. *European Journal of Contemporary Education*. 7(4): 918-926.

[Magsumov, 2018b](#) – *Magsumov, T.A.* (2018). Vocational school and studying youth in the Russian revolution of 1905. *Terra Sebus*. 10: 289-313.

[Magsumov et al., 2018](#) – *Magsumov, T.A., Artemova, S.F., Ustinova, O., Vidishcheva, E.V.* (2018). Public education system in the Caucasus region in the 1850s: unification and regulation of educational process. *European Journal of Contemporary Education*. 3(7): 598-607.

[Magsumov, Nizamova, 2015](#) – *Magsumov, T.A., Nizamova, M.S.* (2015). The country council work on extracurricular enlightenment of adults in the Volga-Ural region. *Bylye Gody*. 38(4): 1001-1010.

[Magsumov, Nizamova, 2016](#) – *Magsumov, T.A., Nizamova, M.S.* (2016). The Zemstvo's activities to guide the primary school teacher resources formation and support. *Bylye Gody*. 41(3): 688-697.

[Mingaleva et al., 2017](#) – *Mingaleva, Zh., Sheresheva, M., Oborin, M., Gvarliani, T.* (2017). Networking of small cities to gain sustainability. *Entrepreneurship and sustainability issues*. 5(1): 140-156.

[Molchanova et al., 2013](#) – *Molchanova, V.S., Cherkasov, A.A., Šmigel', M.* (2013). Youth and patriotic sentiments during the reign of Emperor Nicholas II. *Bylye Gody*. 30(4): 88-93.

[Neskoromnykh et al., 2017](#) – *Neskoromnykh, N.I., Chernenko, N.V., Mamadaliev, A.M., Vorozhbitova A.A.* (2017). Educational-Cognitive Barriers in the Preparation of Future Social Pedagogues for the Prevention of Social Dependencies. *European Journal of Contemporary Education*. 6(1): 57-63.

[Peretyatko, 2016](#) – *Peretyatko, A.* (2016). The dark side of the Emancipation Reform of 1861 on the Don region: the history of the resettlement of one of the peasant community according to the material of atamanskaya kontselyariya. *Bylye Gody*. 39(1): 137-145.

[Peretyatko, 2017](#) – *Peretyatko, A.* (2017). "Before Giving to the Nation or Tribe A New Order, One Must First Ask the People of this Nation whether they Need this Order": the Local Prerequisites for the Reforms of 1860-1870 On the Don. Part I. *Bylye Gody*. 46(4): 1401-1415.

[Peretyatko, Zulfugarzade, 2017](#) – *Peretyatko, A.Y., Zulfugarzade, T.E.* (2017). Higher and secondary education of the Don Cossacks in the context of the epoch: The time of the great reforms. *European Journal of Contemporary Education*. 6(2): 367-377.

[Peretyatko, Zulfugarzade, 2017a](#) – *Peretyatko, A.Y., Zulfugarzade, T.E.* (2017). Project of Reforms Proposed for the Don Public Education in the first half of 1860: A.M. Dondukov-Korsakov, Kh.I. Popov, N.I. Krasnov. *European Journal of Contemporary Education*. 6(4): 817-829.

[Polyakova, 2015](#) – *Polyakova, L.G.* (2015). Black Sea Governorate during World War I: A Historiographical Survey. *Bylye Gody*. 36(2): 366-372.

[Shevchenko et al., 2016](#) – *Shevchenko, N.A., Vidishcheva, E.V., Emelyanova, O.V.* (2016). The establishment of the system of public education in the Caucasus (1802-1917 years): The characteristic features. *Bylye Gody*. 40(2): 363-372.

[Shevchenko et al., 2018](#) – *Shevchenko, N.A., Kucherov, I.A., Shirev, D.A., Miku, N.V.* (2018). Public Education in the Russian Empire at the end of the 19th century. *European Journal of Contemporary Education*. 7(1): 226-231.

[Smigel, Cherkasov, 2016](#) – *Smigel, M., Cherkasov, A.A.* (2016). The Slavery in Circassia and the United States (1850–1860-ies years): General and Special. *Bylye Gody*. 42(4): 1182-1197.

[Tarakanov, Ludwig, 2019](#) – *Tarakanov, V.V., Ludwig, S.D.* (2019). Aleksandr Cherkasov: A Scholar, Publisher, and Organizer of Research Collaborations (to the 20th Anniversary of the Scholar's Research and Pedagogical Activity). *Bylye Gody*. 53(3): 914-920.