

*The 28th International Scientific Conference
“Educational Research and School Practice”*

**THE STATE
PROBLEMS
AND NEEDS
OF THE MODERN
EDUCATION
COMMUNITY**

BOOK OF PROCEEDINGS

Editors

Jelena STEVANOVIĆ

Dragana GUNDOGAN

Branislav RANĐELOVIĆ



Российский университет
дружбы народов



Belgrade, 2022.

Institute for Educational Research, Belgrade, Serbia

28th International Scientific Conference
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December 9th, 2022
Belgrade

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Note. This book was funded by the Ministry of Education, Science, and Technological Development of the Republic of Serbia (Contract No. 451-03-68/2022-14/200018).

CIP - Каталогизација у публикацији
Народна библиотека Србије, Београд

37.091::004(082)
37.018.43:004.738.5(082)
371.13(082)
37.091.33(082)

INTERNATIONAL Scientific Conference "Educational Research and School Practice" (28 ; 2022 ; Beograd)
The State, Problems, and Needs of the Modern Education Community : book of proceedings / 28th International Scientific Conference "Educational Research and School Practice", December 9th , 2022 Belgrade ; editors Jelena Stevanović, Dragana Gundogan, Branislav Randelović. - Belgrade : Institute for Educational Research, 2022 (Beograd: MC Most). - 255 str. ; 24 cm
Tiraž 50. - Napomene i bibliografske reference uz tekst. - Bibliografija uz svaki rad. - Registar.

ISBN 978-86-7447-161-6

- а) Информациона технологија -- Образовање -- Зборници
- б) Школство -- Реформа -- Зборници
- в) Наставници-- Стручно усавшавање -- Зборници
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COBISS.SR-ID 84360457

CONTENT

PLENARY

Daniel Churchill

TRANSDISCIPLINARITY AND WHAT IT MEANS FOR EDUCATION 12

Tímea Mészáro and Vilmos Vass

THE LINKS BETWEEN A CHANGED VISION OF LEARNING
AND PROJECT-BASED TEACHING 20

Slobodanka Antić

LANGUAGE IN THE CLASSROOM: HOW TO SUPPORT
THE DEVELOPMENT OF FUNCTIONAL LITERACY 29

Slavica Ševkušić

PROFESSIONAL INTERESTS OF FINAL GRADE PRIMARY
SCHOOL STUDENTS IN SERBIA: A CASE STUDY 35

Jelena Stevanović

THE STATE MATRICULATION EXAM IN THE REPUBLIC OF SERBIA:
THE HIGH SCHOOL TEACHERS' PERSPECTIVE 45

MODERN APPROACHES TO LEARNING AND TEACHING

Dunja Anđić and Sanja Tatalović Vorkapić

HOW MUCH DO CHILDREN LOVE NATURE? VALIDATION
OF THE BIOPHILIA INTERVIEW AND A REVISED CONNECTEDNESS
TO NATURE INDEX AMONG PRESCHOOL CHILDREN..... 58

Vladeta Milin

STRUCTURING LESSONS OR STRUCTURING KNOWLEDGE
– WHAT DOES IT TELL US ABOUT THE TEACHING PRACTICE? 65

Sanela Hudovernik and Nastja Cotič

THE IMPLEMENTATION OF MATHEMATICAL ACTIVITIES
IN KINDERGARTEN 71

Dušica Malinić, Ivana Đerić and Slavica Maksić

“WE HAVE LOST THE COMPASS
OF WHAT EDUCATION SHOULD LOOK LIKE”:
STUDENT CONCERNS ABOUT SCHOOLING DURING
THE COVID-19 PANDEMIC..... 78

Marija Stojanović, Branislava Popović-Čitić,

Lidija Bukvić Branković, Marina Kovačević-Lepojević

COPING STRATEGIES OF PRIMARY SCHOOL TEACHERS
IN SERBIA DURING THE COVID-19 PANDEMIC 84

Marica Travar and Slađana Miljenović

REFORM OF THE FIRST TRIAD IN PRIMARY SCHOOLS
IN THE REPUBLIC OF SRPSKA FROM THE TEACHERS' PERSPECTIVE 91

<i>Olivera J. Đokić and Neda D. Osmokrović</i>	
YOUNG PUPILS' INTUITIVE UNDERSTANDING AND STRATEGIES OF AREA MEASUREMENT	96
 <i>Milica Marušić Jablanović, Jelena Stanišić and Slađana Savić</i>	
PREDICTORS OF PRO-ENVIRONMENTAL BEHAVIOR – THE RESULTS OF A PILOT STUDY ON ENVIRONMENTAL LITERACY	106
 <i>Dunja Anđić and Karin Terzić</i>	
TEACHERS' VIEWS ON THE METHOD OF PRACTICAL WORK IN TEACHING THE SUBJECT OF NATURE AND SOCIETY – THE STATE AND CHALLENGES OF THE PRACTICE.....	114
 <i>Li Ling-E and Wang Xiao-Jun</i>	
RUSSIAN LANGUAGE EXAM AND EDUCATION IN CHINA – A COMPARISON WITH JAPANESE	121
 <i>Irina Tivyaeva and Diana Abdulmianova</i>	
DIGITAL POLITENESS IN DISTANCE AND BLENDED LEARNING: A CASE OF INTERPRETER TRAINING	126
 <i>Emilija Lazarević, Jelena Stevanović and Luka Mijatović</i>	
EDUCATIONAL STANDARDS OF ACHIEVEMENT IN LOWER PRIMARY EDUCATION: CLASS TEACHERS' OPINIONS.....	131
 <i>Nataša Stanković Šošo</i>	
IMPROVING THE READING COMPETENCE OF ELEMENTARY SCHOOL STUDENTS (ON THE EXAMPLE OF THE NOVEL HAJDUCI BY BRANISLAV NUSIĆ)	139

THE PROFESSIONAL DEVELOPMENT AND COMPETENCIES OF EDUCATIONAL WORKERS

Olga B. Mikhailova

STRATEGIES FOR THE DEVELOPMENT OF A MODERN TEACHER:
LEADERSHIP AND INNOVATIVENESS 148

Jelena Stanišić, Dušica Malinić and Ivana Đerić

THE TEACHER AS THE INITIATOR OF CHANGE:
TURNING A BORING TOPIC INTO AN ENGAGING LESSON 153

Renata Čepić

CHALLENGES AND OPPORTUNITIES OF STRENGTHENING TEACHER
IDENTITY IN THE CONTEXT OF PROFESSIONAL DEVELOPMENT 161

Aleksandra Maksimović, Jelena Đurđević Nikolić and Filip Stašević

SCIENCE TEACHERS' PERCEPTIONS
ABOUT THEIR PEDAGOGICAL EDUCATION:
CASE STUDY OF THE FACULTY
OF SCIENCE UNIVERSITY OF KRAGUJEVAC 169

Isidora Korać

TWO DISCOURSES OF UNDERSTANDING HORIZONTAL LEARNING..... 176

Zorana Matićević

TEACHERS' ATTITUDES TOWARDS TITLE PROMOTION
AS AN INTEGRAL PART OF PROFESSIONAL DEVELOPMENT..... 181

Nina Sungurova and Yulija Akimkina

STUDENTS' ACADEMIC MOTIVATION
IN CONDITIONS OF BLENDED LEARNING 188

THE STATE MATRICULATION EXAM IN THE REPUBLIC OF SERBIA: THE HIGH SCHOOL TEACHERS' PERSPECTIVE⁸

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Introduction

Over the last few decades, changes have become one of the defining features of the modern age and present in various spheres of life. The interest of researchers in the study of changes in different scientific disciplines has increased significantly, “which is why the perceptions of different actors in different systems in majority of countries are becoming a very important subject of study” (Đević, Anđelković & Marušić, 2011: 12).

In modern societies, education is often seen as a key factor for economic and technological development (Triventi *et al.*, 2016). The emphasis on individual achievement and the ideal of equal educational opportunities have dominated contemporary school reform debates and political agendas across the world (OECD, 2004).

In order for the education system in Serbia to be improved and aligned with modern European educational policies and practices, a number of reform initiatives have been launched at almost all levels of education since 2000. One of the educational changes in our country is certainly the implementation of a new concept of taking the state matriculation exam, i.e. taking the final exams in high school education.

⁸ *Note.* This research was funded by the Ministry of Education, Science and Technological Development of the Republic of Serbia (Contract No. 451-03-68/2022-14/200018).

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Secondary education in the Republic of Serbia is not compulsory and lasts for three or four years, and students usually enrol in it after completing primary school. Secondary education is divided into: general secondary education; secondary artistic education, and secondary vocational education (dual education).

Taking the state matriculation exam in our country is defined by the legal framework, which consists of: Law on the Basics of the Education System; Law on Secondary Education and Pedagogy; Law on Higher Education (Article 100); Rulebook on the General and Artistic Matriculation Program (Official Gazette – Educational Gazette; 11/2017); Rulebook on the Vocational Matriculation and Final Exam Program (Official Gazette – Educational Gazette; 1/2018).

The structure of final exams in secondary education in the Republic of Serbia is presented in Table 1.

Table 1. *General and Vocational Matriculation Exam in the Republic of Serbia: Structure*

Matriculation	Compulsory part			Optional part of general/vocational matriculation
	1.	2.	3.	4.
General Matriculation	<i>Serbian Language and Literature</i>	<i>Mathematics</i> (if a student only listens to it for two years, it can be replaced with another subject from the list, but doesn't have to be)	One of the subjects from the list of general education subjects, by choice: <i>foreign language, history, geography, physics, chemistry, biology, mathematics</i> (if a student did not take it as the second subject)	One or more subjects from the list (depending on the faculty a student wants to enrol in): <i>foreign language, history, geography, physics, chemistry, biology, mathematics</i> (if a student did not take it as the second subject)
Vocational Matriculation			Vocational examination: a) The test for checking professional-theoretical knowledge b) Matriculation practical work	

We would like to mention that *Serbian Language and Literature* and *Mathematics* exams are the same for students of high schools, vocational, and art schools. Moreover, the tests in general education subjects verify the achievement standards at the end of secondary education (the achievement standards are the same for students of all high schools and are defined at three levels: basic, intermediate, and advanced). The List of General Education Subjects includes only the subjects for which the achievement standards are defined. The vocational matriculation exam verifies the achievement of the qualification standard (i.e. learning outcomes, if there is no qualification standard).

The issues of reform processes and the state of education in our country have been discussed so far in various studies (Kovač-Cerović, 2006; Teodorović, 2008; Stanković, 2009; Vujačić *et al.*, 2011; Ivić, Pešikan & Kostić, 2021). However, the research results focusing on the state matriculation exam, primarily its new concept, are quite scarce. Bearing in mind these findings, the aim of this research is to examine the opinion of high school teachers about the new concept of taking final exams in secondary education, i.e. state matriculation exam in the Republic of Serbia, as well as to establish the existence of differences in relation to gender, length of service and type the school where the research participants are employed.

Method

Sample. 364 teachers who teach various subjects in secondary vocational schools and gymnasiums in the Republic of Serbia participated in the research. Moreover, the sample includes the teachers who teach in high schools located in different districts in the Republic of Serbia (City of Belgrade, Bor, Braničevo, Zlatibor, Zapadnobački, Jablanica, Južni Banat, Kolubara, Moravica, Niš, Pomoravlje, Rasina, Šumadija district). The detailed structure of the sample in relation to sociodemographic variables is shown in Table 2.

Table 2. *Structure of the sample in relation to gender, length of service and type of high school*

Gender	N	%
male	81	22.3
female	283	77.7
Length of service	N	%
up to 10 years	93	25.5
up to 11 to 20 years	128	35.2
over 21 years	143	39.3
Type of school	N	%
gymnasium	187	51.4
vocational high school	177	48.6

Instrument. The results of this research were obtained using a questionnaire. The questionnaire was constructed for the purpose of this study. It contained two parts. In the first part, there were questions related to the sociodemographic characteristics of the respondents (gender, length of service, and type of school – gymnasium or secondary vocational school). The second part of the questionnaire consisted of four closed questions and one open-ended question. Namely, based on the questionnaire, the data were obtained on the familiarity of high school teachers with the new concept of the state matriculation exam and its introduction, which was evaluated on a Likert scale with five statements (from 1 – I am not familiar at all to 5 – I am completely familiar). Afterwards, they expressed their opinion on the justification of this reform on a Likert scale (from 1 – not justified at all to 5 – completely justified). Then, the teachers' assessment of their own readiness to introduce the new concept of the state matriculation exam (from 1 – I am not ready at all to 5 – I am fully ready), as well as their assessment of the readiness of students and parents when it comes to this concept of taking of the final exam, which they also expressed on a Likert scale with five alternatives of agreement (from 1 – they are not ready at all to 5 – they are completely ready). The last question, which is open-ended, referred to the teachers' opinion about what should be changed regarding the new way of taking the state matriculation exam.

Research flow. The questionnaire was distributed electronically. High school teachers completed the questionnaire individually, they participated voluntarily, and completing the questionnaire was anonymous. The research was conducted in the first term of the

2022/23 school year. The obtained data were processed using the methods of descriptive and inferential statistics, while qualitative content analysis was applied regarding the last research question (Titscher et al., 2000; Schilling, 2006; Schreier, 2012).

Results and Discussion

Regarding whether they are familiar with the new concept of the state matriculation exam, the largest percentage states that they are mostly or completely familiar with this concept (72%), while only 6.9% of the respondents are completely or mostly unfamiliar with it. A fifth of the high school teachers believe that they are partially familiar with the concept of the state matriculation exam. Gender differences were not perceived, as well as differences in relation to length of service (the results of the Chi-square test are not statistically significant). However, the teachers employed in high schools significantly more often state that the new concept of the state matriculation exam is more familiar to them ($\chi^2=9.06$, $df=2$, $p<.01$). Hence, we could say that gymnasium teachers are perhaps more familiar with the new concept of the state matriculation exam, since their students enrol faculties more often than students of secondary vocational schools, and considering that it is planned that the state matriculation exam will replace the entrance exams for admission to faculties.

This finding is quite expected and confirms that high school teachers are informed and interested in changes in education, primarily because of the population of students they teach. Moreover, “in the program documents of almost every comprehensive educational reform, the key role of teachers is underlined” (Stanković, 2009: 316), because teachers are perceived as most important consumers of external changes (Fullan, 1993).

The teachers' opinion on the extent to which the introduction of the new concept of taking the state matriculation exam is justified is not uniform: approximately a third of the teachers (31.6%) believe that it is completely or mostly unjustified, a third is undecided on the matter (33.8%), while an equal number mostly or fully justifies the introduction of this concept (34.6%). The respondents' opinion is not related to gender, nor to the length of service, but it is related to the type of the school: the teachers employed in gymnasiums more often believe that there is justification for the

introduction of the new concept of the state matriculation exam ($\chi^2=9.90$, $df=2$, $p<.01$) compared to their colleagues from secondary vocational schools.

Regardless of the fact that, they claim to know very well the new way of taking the state matriculation exam, most teachers are not entirely sure whether this reform is justified. One of the possible reasons for this can be found, among other things, in the results of the research, the focus of which was the representations of the key actors about educational changes in the period 2000-2010 in Serbia (Pavlović, 2011). Namely, the findings indicate that chaoticity and instability accompanied the changes from the point of view of the key actors, as well as that the final effects of the educational changes were, on the whole, unsatisfactory. Therefore, it could be said that until today, a process of change that was carefully and properly conceived and led “from above” (the competent ministry) and “from below” (schools, i.e. primarily teachers) has not been initiated in Serbia (Fullan, 1994).

About half of the respondents express their personal readiness for the introduction of the new concept of the state matriculation exam (52.7%), one fifth is mostly not or completely not ready to switch to the new way of taking the matriculation exam, and one quarter is undecided on the matter (26.4%). There are no gender or length of service differences in terms of respondents' readiness for the introduction of the new concept of the state matriculation exam. The chi-square test indicates the existence of a significant connection between the type of the school and the readiness to switch to a new way of realizing the state matriculation: the teachers employed in gymnasiums express a greater willingness regarding this reform ($\chi^2=8.81$, $df=2$, $p<.01$).

The teachers also evaluated the extent to which the students and their parents are ready for the transition to the new way of taking the state matriculation exam. For the two-thirds majority of the respondents (64.6%), students and their parents are not at all or not sufficiently ready for the introduction of the new concept of the state matriculation exam, only 7.7% of the teachers have the complete opposite opinion, i.e. that there is a willingness among parents and students for a new way of taking the matriculation exam, while the percentage of those who are undecided on the matter is not negligible (27.7%). The chi-square test indicates a correlation between gender and the assessment of the readiness of parents and students for the introduction of the state matriculation exam: the female respondents more often estimate that students and parents are not ready, while the males are more inclined to estimate students and their parents as ready for this situation ($\chi^2=17.35$, $df=2$, $p<.001$). Additionally, the teachers

working in gymnasiums more often state that parents and students are willing to switch to a new way of taking the state matriculation exam ($\chi^2=8.83$, $df=2$, $p<.05$). Differences in relation to length of service are not noticed.

Furthermore, we asked the teachers to indicate what should be changed in connection with the new way of taking the state matriculation exam. 92.6% of the research participants answered this question. Teachers' suggestions are grouped into categories according to similarity. Table 3 shows the categories ranked according to frequency of occurrence, as well as the narratives of high school teachers.

Table 3. *Categories and teachers' narratives*

Category	Excerpts from the teachers' narratives
<i>Do not apply the new concept of the state matriculation exam</i>	<ul style="list-style-type: none"> • <i>To remain as before. The concept of education should not be formed on the basis of the state matriculation exam, but the other way around.</i> (a female teacher; gymnasium); • <i>Take the matriculation exam according to the good old pattern, but only when the importance and reputation of the teaching profession is restored.</i> (a male teacher; secondary vocational school)
<i>Agreement with universities - necessary and mandatory</i>	<ul style="list-style-type: none"> • <i>Postpone the introduction of the new concept of taking the state matriculation exam until everything is precisely established and agreed with the faculties.</i> (a female teacher; secondary vocational school); • <i>Faculties will never agree that the matriculation exam replaces the admission exam.</i> (a female teacher; secondary vocational school)
<i>Preparations for students and teachers</i>	<ul style="list-style-type: none"> • <i>Preparations should be organized and the collection of tasks should be created (like those that elementary school pupils have).</i> (a male teacher; gymnasium); • <i>Much more work needs to be done on teachers' education.</i> (a female teacher; gymnasium)
<i>Method of implementation</i>	<ul style="list-style-type: none"> • <i>Organize it on neutral ground, in another school in order to avoid the possibility of any abuses.</i> (a female teacher; gymnasium); • <i>Not to be done in the same school that the students attended and that monitoring should be entrusted to special persons who possess the same (but to be the high one) level of strictness.</i> (a teacher; secondary vocational school)
<i>Teaching and learning programs</i>	<ul style="list-style-type: none"> • <i>Before the introduction, allow all students the same number of hours of subjects to be taken and the same curriculum...</i> (a female teacher; gymnasium);
<i>Transparency</i>	<ul style="list-style-type: none"> • <i>Much more transparent and reliable information for both teachers and students.</i> (a male teacher; secondary vocational school); • <i>We don't have enough information.</i> (a male teacher; gymnasium)

The most dominant category *Do not apply the new concept of the state matriculation exam*, indicates that the high school teachers and those who teach in gymnasiums, and the teachers of four-year vocational secondary schools do not have a positive reaction to the new concept of taking final exams in secondary education as an instrument for improving the quality of education based on external assessment of the quality of school work through student results. This finding is somewhat expected considering the previous experiences of the key actors in the field of educational reform initiatives in the Republic of Serbia (Stanković, 2009; Pavlović & Vujačić, 2011). On the other hand, this approach is not in agreement with the results on the importance of the state matriculation exam in the researchers conducted in other countries, such as the Republic of Croatia and the United States of America (Beketa, Dedić & Jokić, 2020; Berry & Sackett, 2009), in which the key actors fully support the realization of the final exam.

Moreover, the teachers who participated in our research indicate that without the consent of the university, the new concept of the state matriculation exam will not be adequate, nor efficient, that is, purposeful. Therefore, it is necessary that in the future the development and implementation of the new concept of the state is fully based on the principle of cooperation of all interested parties and that a consensus is established among them, that is, complete agreement in this regard. Otherwise, from the current perspective of high school teachers, the state matriculation exam will only be an unnecessary burden for teachers, students, and their parents.

In addition, the teachers underline that it is necessary for both students and teachers to be much better prepared for the implementation of the new concept of the matriculation exam. Therefore, any good education reform cannot only mean merely changing regulations (Birello, 2012), but it is necessary, first of all, that its most important implementers have quality education, professional preparation, as well as quality teaching aids. In the aforementioned reform in the Republic of Serbia, according to the high school teachers, these very important aspects were scarce.

Although transparency is one of the six principles on which this concept is based, the research participants point to the exact opposite, i.e. non-transparency. Moreover, the results of the previous research confirm that the adoption of modern ideas in education is especially slow, since the reforms of the education system were initiated

“from the top”, imposed and insufficiently transparent (Jerković and Damjanović, 2007; Vujačić et al., 2011).

Conclusion

Various factors affect the effectiveness of any reform, including educational reform as well, some of which are: socio-political and economic conditions, scientific and technological progress of the country, etc. In fact, the context in which educational reforms take place can influence whether they are very successful or fail completely (Fullan, 2007; Hargreaves, 2010; Teodorović, 2008).

Education reform in the Republic of Serbia was stimulated, first of all, by the overall effort of the country to get closer to the European Union, while the internal need to fundamentally change something in the education system was rather weakly expressed. A review of the previous reform processes, it could be said, indicates that frequent changes in the direction in which educational reforms move, as well as frequent the initiation of new initiatives and failure to evaluate the success of implementing older reform moves can lead to fatigue and saturation of educational workers with reforms (Hargreaves, 2004).

The results of our research, which is dedicated to the new concept of the state matriculation exam, almost completely coincide with the opinion of both practitioners and researchers in the field of education when considering the current reforms of the education system in Serbia. Namely, the results of this research show that neither the teachers (gymnasium ones and those who teach in secondary vocational schools), nor students and their parents are fully ready/prepared to take the final exam in secondary education in a way specified in the new concept of the state matriculation exam. In this regard, it is necessary that the implementation of this reform should be more detailed and comprehensive, first of all, prepared and presented to all interested parties, taking into account the perspective of high school teachers. The respondents pointed out unequivocally that the new concept is not entirely in agreement with the concept of education as a whole, but also with the attitude of the state and society towards education and the status of educational workers. Therefore, it can be concluded that the high school teachers are very aware of the shortcomings of the reforms implemented so

far, that it is indisputable that they recognize the potential that they carry and therefore suggest a more careful approach in the implementation of this new educational reform.

This should be a clear signal to educational policy makers that teachers, as direct bearers of the implementation of reform, need to be an integral part of future reforms, because without their proactive role, such a process cannot be successfully implemented. The examples from practice show that exactly these efforts contributed to the success of systemic reforms (Levin, 2008) and ensured better education for future generations.

Key words: the state matriculation exam, the Republic of Serbia, the education system, the high school teachers, school reform.

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BOOK OF PROCEEDINGS

28th International Scientific Conference
“Educational Research and School Practice”

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OF THE MODERN EDUCATION COMMUNITY**

Publisher

Institute for Educational Research

For the publisher

Nikoleta Gutvajn

Editors

Jelena Stevanović
Dragana Gundogan
Branislav Randelović

Proofreader

Aleksandra Ilić

Copy Editor

Ivana Đerić

Print run

50

Cover design

Branko Cvetić

Graphic processing

Branko Cvetić

Printed by

Kuća štampe plus

<https://www.ipisr.org.rs/images/naucni-skupovi/book-of-proceedings.pdf>

ISBN 978-86-7447-161-6



ISBN 978-86-7447-161-6