



PROBLEMS AND PERSPECTIVES OF CONTEMPORARY EDUCATION

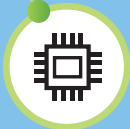
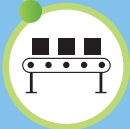


EDITORS

NIKOLETA
GUTVAJN

JELENA
STANIŠIĆ

VERA
RADOVIĆ



Series
„PEDAGOGICAL THEORY AND PRACTICE”

52



PROBLEMS AND PERSPECTIVES OF CONTEMPORARY EDUCATION

Publisher

Institute for Educational Research, Belgrade, Serbia

Co-publishers

Faculty of Philology, Peoples` Friendship University of Russia (RUDN University),
Moscow, Russia

Faculty of Teacher Education, University of Belgrade, Belgrade, Serbia

For publisher

Nikoleta GUTVAJN

For co-publishers

Viktor BARABASH

Danimir MANDIĆ

Editors

Nikoleta GUTVAJN

Jelena STANIŠIĆ

Vera RADOVIĆ

Proofreader

Esther GRACE HELAJZEN

Technical editor

Jelena STANIŠIĆ

Cover design

Branko CVETIĆ

Typeset and printed by

Kuća štampe plus

www.stampanje.com

ISBN 978-86-7447-157-9

Copies

300

COPYRIGHT © 2021 INSTITUTE FOR EDUCATIONAL RESEARCH



PROBLEMS AND PERSPECTIVES OF CONTEMPORARY EDUCATION

Editors

Nikoleta GUTVAJN

Jelena STANIŠIĆ

Vera RADOVIĆ

Belgrade
2021.

INSTITUTE FOR EDUCATIONAL RESEARCH
BELGRADE, SERBIA

FACULTY OF PHILOLOGY, PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA
(RUDN UNIVERSITY), MOSCOW, RUSSIA

FACULTY OF TEACHER EDUCATION, UNIVERSITY OF BELGRADE
BELGRADE, SERBIA

Reviewers

Professor Emeritus **Djuradj STAKIC**

Department of Human Development and Family Studies, Pennsylvania State
University, Philadelphia, USA

Professor **Marina MIKHAILOVNA MISHINA**

Department of Psychology and Pedagogy of Education, Russian State
University for the Humanities, Moscow, Russia

Professor **Teodora STOYTICHEVA STOEVA**

Department of Social, Organizational, Clinical and Pedagogical Psychology,
Faculty of Philosophy, University of Sofia "St. Kliment Ohridski", Sofia, Bulgaria

*Note. This book was funded by the Ministry of Education, Science and Technological Development
of the Republic of Serbia (Contract No. 451-03-9/2021-14/200018).*

UNIVERSITY STUDENTS' MOTIVATION AND LEARNING STRATEGIES FROM THE PERSPECTIVE OF SELF-REGULATED LEARNING¹

Milja VUJAČIĆ

Institute for Educational Research, Belgrade, Serbia

Jelena STANIŠIĆ

Institute for Educational Research, Belgrade, Serbia

Snežana MIRKOV

Institute for Educational Research, Belgrade, Serbia

INTRODUCTION

Education for lifelong learning is one of the primary goals of education in modern society. Each individual is expected to manage their own process of learning and development throughout life. This is why learning to learn is regarded as one of the key competences, whose progress is encouraged all through the educational process (European Commission, 2002). Students who have mastered self-regulation as one of the highest levels of metacognitive activity, can manage learning actively and autonomously, and improve their knowledge (Puustinen & Pulkkinen, 2001). Learning is self-regulated inasmuch as the person is motivationally, cognitively and affectively engaged in this process (Zimmerman, 1986). Self-regulated learning is a key conceptual framework for understanding the cognitive, motivational and emotional aspects of learning (Panadero, 2017). Regulation includes activities like planning, selection and use of strategies, and allocation of sources, whereas monitoring is regarded as a key component of self-regulation (Borkowski, 1996). Metacognitive processes depict the ways in

¹ This research was funded by the Ministry of Education, Science and Technological Development of the Republic of Serbia (Contract No. 451-03-9/2021-14/200018).

which students regulate their learning, while motivation provides an answer to the question of why they do that (Garcia & Pintrich, 1994). Therefore, motivation is perceived as an integral component of self-regulated learning (Zimmerman, 2001).

Over the last few decades, different models of self-regulated learning have been developed, and in empirical research great attention is given both to testing different models and examining the influences of particular self-regulation components on the process and outcomes of learning. The most significant models of self-regulated learning are considered to be models developed by Boekaerts (1996, 1997), Borkowski (1996), Pintrich (2000, 2004), Winne (Butler & Winne, 1995; Winne & Hadwin, 2013) and Zimmerman (Zimmerman & Bandura, 1994). These models were developed on the bases of different theories and they define self-regulated learning in different ways, include different components, and also differ in terms of empirical evaluations (Dent & Koenka, 2016; Hadwin, Nesbit, Jamieson-Noel, Code, & Winne, 2007; Panadero, 2017; Paris & Paris, 2001; Peng, 2012; Perels, Dignath, & Schmitz, 2009; Perry, Phillips, & Dowler, 2004; Postholm, 2011; Puustinen & Pulkkinen, 2001; Torenbeek, Jansen, & Suhre, 2013; Wolters, Pintrich, & Karabenick, 2003; Zimmerman, 2008).

According to some authors, an important and unique contribution to studying self-regulated learning was the one made by Pintrich's model (Panadero, 2017). This model is based on socio-cognitive theory and is characterised by integration of motivational constructs within self-regulation (Garcia & Pintrich, 1994; Pintrich, 2000; Pintrich, 2004; Pintrich & Schunk, 2002; Wolters, 2003, 2011). In line with the general framework set by Pintrich (2000), self-regulated learning occurs in four phases: planning, monitoring, control and reflexion. In each phase, self-regulatory activities occur within four separated areas: cognition (prior content knowledge activation and metacognitive knowledge activation), motivation-affect (goals orientation adoption and efficacy judgements), behaviour (time and effort planning), and context (perception of task and perception of context). Special importance is placed on monitoring, which includes awareness and refers to cognition, motivation, affects, use of time, effort and conditions relating to the task and context. Control activities include selecting and adjusting strategies for managing learning, thinking, motivation and impulse, as well as effort investment. Reflexion includes cognitive judgements, affective reactions, making choices, and evaluation of task and context. So, according to Pintrich, self-regulated learning

is an active, constructive process through which the students set learning goals and then monitor, regulate and control their cognition, motivation and behaviour, led by their own goals and the contextual features of their environment (Dent & Koenka, 2016; Pintrich, 2000). Pintrich's greatest contribution regarding self-regulated learning was made in the following fields: conceptual framework and model of self-regulated learning; the role of motivation in self-regulated learning with a focus on goal orientations; relationships between self-regulated learning, motivation and learning outcomes; the role of classroom context in self-regulated learning and motivation; development of self-regulated learning through empirical studies; and development of an MSLO instrument for measuring self-regulated learning (Schunk, 2005, according to: Panadero, 2017).

Regarding the methods that examine self-regulated learning empirically, empirical research often uses questionnaires and inventories composed for estimations of different components in the models. The most frequently used instrument is MSLO (Motivated Strategies for Learning Questionnaire) developed by Pintrich and associates (Pintrich, Smith, Garcia, & McKeachie, 1991, 1993). This is the most commonly used instrument in research in this field. A number of studies in our country and in the region are also based on this model (Mujagić & Buško, 2013; Stančić & Bulatović, 2017; Radulović, Stančić, & Bulatović, 2019; Zobenica & Oparnica, 2018).

Most of the studies done by Pintrich point to relations between the motivational orientation of students, self-regulated learning, and academic achievement. Pintrich particularly analyses the role of motivation in self-regulated learning, i.e. what the relationship is between orientations focused on mastery and achievement, as well as orientations to approach versus avoidance, and self-regulated learning (Wolters, Yu, & Pintrich, 1996). Even though empirical results may be somewhat contradictory, it is general expected that mastery/approach orientation (due to students' focus on learning, understanding and mastering the task) leads to more positive results compared to other orientations. This is confirmed in a great number of other studies (see Mirkov, 2013).

In the meta-analysis of relationship between self-regulated learning and academic achievement (Dent & Koenka, 2016) it has been confirmed that correlations between use of cognitive and metacognitive strategies, particularly monitoring, control, and academic achievement increase with age. At higher educational levels, a more efficient use of cognitive and metacognitive strategies

is needed to achieve success. Academic tasks become more complex, and lower-level cognitive skills are no longer sufficient for their execution. The results further indicate that changes in the relationship between self-regulated learning and academic achievement are influenced by changes in the students themselves, as well as changes in academic context and methods of assessment.

The effects of interventions aimed at promoting self-regulated learning also vary depending on age (Panadero, 2017). The most powerful motivation factors for students are goal orientations, perseverance, investing an effort, and self-efficacy. The most important predictors of academic success are academic self-efficacy and achievement motivation. On these grounds, it can be concluded that at universities the best results come from interventions which are aimed at motivational and emotional aspects, more precisely on self-efficacy and goal setting. Therefore, models of self-regulated learning which put emphasis on motivation and emotions, Pintrich's model included, can have a stronger influence at higher-level education. Teachers at different levels in the educational system have different approaches to self-regulated learning, whereas what actually occurs in practice is not in line with what the research of application of self-regulated learning at different educational levels implies. In higher education, emphasis is on the content of subjects, which implies that, in comparison with other teachers, university teachers provide limited possibilities for encouraging self-regulated learning. So, a need for teacher training in this field is emphasised (Panadero, 2017).

The results of some research show that metacognitive processes correlate more strongly with achievements in social sciences than those in natural sciences, since the structure of academic tasks in social sciences requires a higher-quality self-regulation in order to attain higher achievement (Dent & Koenka, 2016). Highly structured tasks with very detailed requests, clear linear procedures, single-meaning answers, and precise assessment criteria (as in natural sciences) may require self-regulation to a lesser extent, because a strategic plan, specific goals, and methods of monitoring achievement are already incorporated in the structure of the task. Even students themselves report that they use cognitive and metacognitive strategies less often when completing highly structured tasks. Since less-structured tasks require higher self-regulation to a greater extent in order to achieve success, use of self-regulating strategies is likely to correlate more strongly with academic success in social sciences than in natural sciences.

Research whose focus is identifying differences in self-regulated learning according to gender show that female students use self-regulated learning to a greater extent than male students (Banarjee & Kumar, 2014). As regards individual domains of self-regulation, significant differences have been observed only vis-à-vis regulation of environment, while gender differences have not been identified regarding the regulation of motivation, cognition (use of cognitive and metacognitive strategies) and behaviour. Male students use environment-structuring strategies to a greater extent than female students.

Based on Pintrich's model of self-regulated learning, the goal of this research is to examine relationships between student motivation and learning strategies. Furthermore, our intention was to examine whether student motivation and learning strategies are related to academic achievement (current average grades at exams), fields of studying, and gender.

METHOD

Sample. The research included 520 respondents (85% female, 15% male) aged 19 to 38 ($M = 22.40$). Most of the respondents study in Belgrade (84.6%), followed, number-wise, by students studying in Jagodina (13.1%). The research included only 1.7% of students studying in Kragujevac, 0.4% in Niš, and 0.2% in Novi Sad. Regarding distribution of students according to the field of study, 43.1% of students study social sciences, 45% study natural sciences, and 11.9% attend faculties of art. According to current years of study, we divided the students into three categories: 1) the first and second years of study (26.9%); 2) the third and fourth years of study (56.9%), and 3) the fifth and sixth years of study, and 4) master and doctoral studies (16.2%). The respondents commenced their studies in different school years: 2011 to 2019; the largest number of students (27.9%) commenced their studies in the school year 2016/2017. 46.5% of respondents had finished high school (gymnasium), and 53.5% had finished one of the vocational secondary schools, such as a secondary school of economics, medical, or technical secondary school. The success achieved at university so far, measured by the average grade at exams varies from 6 to 10 [out of 10] ($M = 8.46$, $SD = 0.80$). 37.7% of respondents had an average grade of 8 or lower, while 61.7% reported an average grade higher than 8.

Instrument. We used the Motivated Strategies for Learning Questionnaire (MSLQ) for collecting the data and for the purpose of our research we adapted it linguistically and translated into Serbian language (Duncan, Pintrich, Smith, & McKeachie, 2015). This instrument collects data on motivational orientations, as well as on strategies used when learning. The questionnaire includes 81 items in total and consists of two parts. The first part refers to motivation and includes 31 items grouped into six sub-scales (Intrinsic goal orientation, Extrinsic goal orientation, Task value, Control of learning beliefs, Self-efficacy for learning and performance, and Test anxiety). The second part refers to learning strategies and includes 50 items grouped into nine sub-scales (Rehearsal, Elaboration, Organization, Critical thinking, Metacognitive self-regulation, Time and study environment, Effort regulation, Peer learning, and Help seeking). The introductory part of the original questionnaire was adapted and complemented with additional questions on general, educational, and demographic data of the respondents. In our sample, the reliability of MSLQ scale measured by Cronbach's alpha is very high, equalling $\alpha = .928$.

Variables. We examined students' motivation for learning and the learning strategies they use. Table 1 presents the components of motivation and learning strategies, and provides definitions of variables taken from the Manual for the Use of MSLQ questionnaire (Duncan et al., 2015). In addition to the variables described, this research also includes variables such as academic achievement (current average grade on exams), field of study, and gender.

Data collection method. The data were collected during June and July 2020, via Internet (an online questionnaire). The average time needed for completing the questionnaire was 20-30 minutes.

Data analysis. Data analysis was conducted using statistical software SPSS 27. Statistical analysis included descriptive statistics (frequencies and percentage), parametric (Pearson correlation coefficient) and non-parametric inferential statistics (Mann-Whitney U-tests; Spearman's coefficient; Kruskal-Wallis tests).

Table 1. Components and definitions of motivation and learning strategies subscales (according to: Duncan et al., 2015)

<p style="text-align: center;">MOTIVATION Components and subscale definition</p>	<p style="text-align: center;">LEARNING STRATEGIES Components and subscale definition</p>
<p>Value Component: <i>Intrinsic Goal Orientation</i> concerns the degree to which the student perceives him/herself to be participating in a task for reasons such as challenge, curiosity, and mastery. <i>Extrinsic Goal Orientation</i> concerns the degree to which the student perceives him/herself to be participating in a task for reasons such as grades, rewards, performance, evaluation by others, and competition. <i>Task Value</i> refers to the student's evaluation of the how interesting, how important, and how useful the task is. High task value should lead to more involvement in one's learning.</p> <p>Expectancy Component: <i>Control of Learning Beliefs</i> refers to students' beliefs that their efforts to learn will result in positive outcomes, and that such outcomes are contingent on their own efforts, in contrast to external factors such as the teacher. If students believe that their efforts to study make a difference in their learning, they should be more likely to study more strategically and effectively. <i>Self-Efficacy for Learning and Performance</i> examine two aspects of expectancy: expectancy of success (performance expectations) and self-efficacy (self-appraisal of one's ability to master a task).</p> <p>Affective Component: <i>Test Anxiety</i> has been found to be negatively related to expectancies as well as to academic performance. Test anxiety has a cognitive component (students' negative thoughts that disrupt performance), and an emotionality component (affective and physiological arousal aspects of anxiety).</p>	<p>Cognitive and Metacognitive Strategies: <i>Rehearsal</i> strategies involve reciting or naming items from a list to be learned. <i>Elaboration</i> strategies (paraphrasing, summarizing, creating analogies, and generative note-taking) help students store information into their long-term memory by building internal connections between items to be learned. <i>Organization</i> strategies (clustering, outlining, and selecting the main idea in reading passages) help the learner select appropriate information and also construct connections among the information to be learned. <i>Critical Thinking</i> refers to the degree to which students report applying previous knowledge to new situations in order to solve problems, reach decisions, or make critical evaluations with respect to standards of excellence. <i>Metacognitive Self-Regulation</i> focuses on the control and self-regulation aspects of metacognition (not the knowledge aspect). Three general processes make up metacognitive self-regulatory activities: planning, monitoring, and regulating.</p> <p>Resource Management Strategies: <i>Time and Study Environment</i> Time management involves scheduling, planning, and managing one's study time (effective use of study time and setting realistic goals). Study environment management refers to the setting where the student does her/his class work. <i>Effort Regulation</i> – students' ability to control their effort and attention in the face of distractions and uninteresting tasks which reflects a commitment to completing their study goals, even when there are difficulties or distractions. <i>Peer Learning</i> – Collaborating with one's peers has been found to have positive effects on achievement and can help a learner clarify course material and gain insights s/he may not have attained alone. <i>Help Seeking</i> – Good students know when they don't know something and are able to identify someone to provide them with some assistance.</p>

RESULTS

Table 2 displays values of correlations between the subscales of motivation for learning. The presented values indicate moderate correlations between all subscales. Within motivation subscales, statistically important correlations are recorded between all subscales except between Test anxiety and Intrinsic goal orientation, and Test anxiety and Task value. The highest correlations between motivation subscales are observed between Intrinsic goal orientation and Task value ($r = .576$), as well as between Self-efficacy for learning and performance and Task value subscales ($r = .529$), while somewhat lower correlation values are recorded between Control of learning beliefs and Self-efficacy for learning and performance ($r = .459$); then between Control of learning beliefs and Task value ($r = .442$), as well as between Intrinsic goal orientation and Self-efficacy for learning and performance ($r = .429$). The results show that intrinsic orientation is less connected to Control of learning beliefs ($r = .337$), and that those students who express test anxiety to a greater extent demonstrate weaker tendencies to adopt extrinsic goal orientation and they believe in their abilities less ($r = -.280$).

Table 2. Correlations between motivation subscales

	Intrinsic goal orientation	Extrinsic goal orientation	Task value	Control of learning beliefs	Self-efficacy for learning and performance	Test anxiety
Intrinsic goal orientation	--					
Extrinsic goal orientation	.163**	--				
Task value	.576**	.272**	--			
Control of learning beliefs	.337**	.086*	.442**	--		
Self-efficacy for learning and performance	.429**	.228**	.529**	.459**	--	
Test anxiety	-0.038	.311**	0.030	-.126**	-.280**	--

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

* Correlation is significant at the 0.05 level (2-tailed)

All the obtained correlations between examined learning strategies are positive. As shown in Table 3, the highest correlation ($r = .711$) is recorded between Elaboration and Metacognitive self-regulation subscales. Metacognitive self-regulation correlates with Organization, Rehearsal, as well as with Critical thinking. Furthermore, Metacognitive self-regulation also correlates with Effort regulation and also, to a somewhat lesser degree, with Time and study environment management. The results also show that students who use Organization strategy in the learning process, simultaneously use Elaboration and Rehearsal. In other words, the students who can organize the content they learn, separating the important from the less important, simultaneously use their previous knowledge when learning new contents (paraphrasing, revising and making analogies between old and new learning contents), as well as rehearsal, whose goal is repetition of the material they have learnt. The correlation between Critical Thinking and Elaboration ($r = .594$) is also confirmed. So, students who, in their learning process, use paraphrasing, make analogies, and connect knowledge from different fields, also apply critical thinking, i.e. use the already acquired knowledge for decision making, solving different problems, and critical appraising what they are learning. The connection between Time and study environment management and Effort regulation ($r = .577$) indicates that students who are good at planning the time required for learning and organizing the space in which they learn, at the same time have the ability to complete the task successfully, regardless of the obstacles they encounter in the learning process.

Table 3. Correlations between the learning strategies subscales

	Rehearsal	Elaboration	Organization	Critical thinking	Metacognitive self-regulation	Time and study environment management	Effort regulation	Peer learning	Help seeking
Rehearsal	--								
Elaboration	.465**	--							
Organization	.581**	.615**	--						
Critical thinking	.253**	.594**	.277**	--					
Metacognitive self-regulation	.510**	.711**	.571**	.505**	--				
Time and study environment management	.366**	.421**	.346**	.213**	.480**	--			
Effort regulation	.246**	.432**	.302**	.211**	.541**	.577**	--		
Peer learning	.333**	.405**	.353**	.322**	.344**	.140**	.181**	--	
Help seeking	.213**	.302**	.201**	.187**	.200**	.089*	0.081	.526**	--

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

* Correlation is significant at the 0.05 level (2-tailed)

When observing connections of the subscales from two separate sets, i.e. motivation subscales and learning strategy subscales, the results presented in Table 4 indicate that Elaboration and Intrinsic goal orientation ($r = .578$) correlate most, as well as Metacognitive self-regulation and Task value ($r = .577$). Intrinsic orientation predominantly correlates with Elaboration, Critical thinking and Metacognitive self-regulation. Task value, as expected, correlates significantly with Metacognitive self-regulation and Elaboration, and to a smaller extent with Effort regulation, Time and study environment management strategies, Organization strategies, as well as with Critical thinking. This means that attaching more importance and value to what is being learned influences intensity of effort, better organisation of learning activities, and predominantly, a deeper processing achieved through use of elaboration strategies and, above all, engagement of metacognitive processes using different cognitive strategies. According to the results obtained, Self-efficacy moderately correlates with Metacognitive self-regulation and Effort regulation, and less with Elaboration and Time and study

environment management. This indicates that beliefs regarding students' own capacities to perform tasks set before them during studies, stand as one of the factors that positively influence engagement of those mechanisms which enable managing the learning process, adequate selection and use of cognitive strategies in acquiring knowledge, and fulfilment of obligations during studies.

Table 4. Correlations between motivation and learning strategies subscales

	Intrinsic goal orientation	Extrinsic goal orientation	Task value	Control of learning beliefs	Self-efficacy for learning and performance	Test anxiety
Rehearsal	.257**	.187**	.334**	0.075	.182**	.106*
Elaboration	.578**	.211**	.555**	.183**	.357**	0.012
Organization	.352**	.147**	.406**	.097*	.204**	.103*
Critical thinking	.537**	.181**	.384**	.100*	.281**	0.039
Metacognitive self-regulation	.533**	.193**	.577**	.292**	.462**	-0.031
Time and study environment management	.359**	.214**	.434**	.148**	.334**	-0.054
Effort regulation	.322**	.247**	.463**	.205**	.450**	-.210**
Peer learning	.264**	.230**	.241**	0.053	.208**	0.033
Help seeking	.249**	.160**	.157**	-0.023	.088*	0.026

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

* Correlation is significant at the 0.05 level (2-tailed)

We wanted to examine whether student motivation and learning strategies differ depending on academic achievement (current average grade at exams), field of study, and gender. Table 5 shows the results relating to correlations of academic achievement expressed by average grade during studies with the scores on MSLQ subscales.

As shown on Table 5, the obtained values of Spearman's rho correlation indicate that higher scores on the following subscales of motivation and learning strategies are followed by higher average grades during studies: Effort regulation, Self-efficacy for learning and performance, Extrinsic goal orientation, Time and study environment management, Task value, Metacognitive self-regulation, Intrinsic goal orientation and Elaboration. Obtained correlations are not high, but

they are statistically significant, except for the subscales Control of learning beliefs and Test anxiety. Critical thinking, Peer learning, Help seeking, Organization and Rehearsal do not correlate with success.

Table 5. Correlation between average grade at studies and scores on MSLQ subscales

Subscale	Correlation coefficient	Sig. (2-tailed)
Intrinsic goal orientation	.211**	.000
Extrinsic goal orientation	.310**	.000
Task value	.225**	.000
Control of learning beliefs	.072	.102
Self-efficacy for learning and performance	.347**	.000
Test anxiety	-.069	.117
Rehearsal	-.009	.835
Elaboration	.205**	.000
Organization	.087*	.049
Critical thinking	.183**	.000
Metacognitive self-regulation	.216**	.000
Time and study environment management	.272**	.000
Effort regulation	.375**	.000
Peer learning	.145**	.001
Help seeking	.101*	.022

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

* Correlation is significant at the 0.05 level (2-tailed)

The differences in average scores at MSLQ subscales depending on the field of study were examined by the series of Kruskal-Wallis tests, which are a non-parametric alternative for one-way analysis of variance. Non-parametric alternative was chosen because of the low representation of respondents who study at the faculties of art, compared to faculties of natural and social sciences. The results revealed several subscales where statistically significant differences between these three groups of respondents were recorded. For example, in the case of the Intrinsic goal orientation subscale, a statistically significant difference was observed: $H(2) = 8.73$, $p < .05$ between respondents oriented toward natural sciences ($Mdn = 5.31$) and art-oriented respondents ($Mdn = 5.75$): $U(N_{\text{science}}$

$= 234, N_{art} = 62) = -59.63, z = -2.79, p < .05$ which indicates that students at faculties of art have a more pronounced intrinsic motivation than students from faculties of natural sciences. With regard to learning strategies, statistically significant differences were observed on the subscales Rehearsal $H(2) = 9.87, p < .05$; Critical thinking $H(2) = 9.85, p < .05$ and Time and study environment management $H(2) = 22.91, p < .05$. Students of social sciences, when learning, use Rehearsal to a greater degree than the students of natural sciences ($U = 42.59, z = 3.04, p < .05$). Critical thinking strategy is mostly used by students of art faculties, when compared to the students of natural sciences ($U = -66.76, z = -3.11, p < .05$) and students of social sciences ($U = -58.11, z = -2.70, p < .05$). Students of natural sciences use Time and study environment management strategy least, when compared to the students of social sciences ($U = 64.22, z = 4.58, p < .05$) and students at faculties of art ($U = -60.00, z = -2.80, p < .05$).

Regarding gender of the respondents, the number of male vs. female respondents is very small. For this reason, we conducted the series of Mann-Whitney U-tests which are non-parametric alternative to the t-test for independent samples.

The data in Table 6 indicate that male students have more pronounced self-confidence and belief in their abilities to achieve learning success than female students do, which is confirmed by the data that female students have more pronounced test anxiety, i.e. concern about whether they will achieve satisfactory results in a test. In addition to this, when learning, male students apply critical thinking to a greater extent than female students, so they use previous knowledge in new learning situations as well as in solving problems and decision making. Statistically significant differences in favour of female students were noted in the following subscales: Rehearsal, Elaboration, Organization, Metacognitive self-regulation, Time and study environment management and Peer learning. The results further indicate that statistically significant differences between male and female students have not been observed in the following five subscales: Intrinsic goal orientation, Extrinsic goal orientation, Control of learning beliefs, Effort regulation, and Help seeking.

Table 6. Relation of gender and scores at MSLQ subscales

Subscale	Mean rank		Mann Whitney U-test	Standard- ized Test Statistic	Asymptotic Sig. (2-sided test)
	Female	Male			
Intrinsic goal orientation	259.20	267.86	17812.000	.470	.638
Extrinsic goal orientation	262.03	251.81	16560.500	-.554	.579
Task value	266.18	228.34	14729.500	-2.054	.040
Control of learning beliefs	255.72	287.57	19.348.500	1.733	.083
Self-efficacy for learning and performance	253.88	298.00	20163.000	2.393	.017
Test anxiety	272.26	193.84	12038.500	-4.254	.000
Rehearsal	272.56	192.16	11907.500	-4.365	.000
Elaboration	269.86	207.48	13102.500	-3.384	.001
Organization	274.31	182.22	11132.000	-4.999	.000
Critical thinking	253.40	300.76	20378.000	2.569	.010
Metacognitive self- regulation	267.78	219.26	14021.000	-2.631	.009
Time and study environment management	266.07	228.91	14774.000	-2.015	.044
Effort regulation	263.51	243.43	15906.500	-1.090	.276
Peer learning	266.54	226.28	14568.500	-2.186	.029
Help seeking	263.21	245.14	16040.000	-.981	.327

DISCUSSION

Our research results indicate that within motivation subscales, the highest correlation was determined between the variables Intrinsic goal orientation and Task value, followed by Intrinsic goal orientation and Self-efficacy for learning, as well as between Self efficacy and Task value. These results are in line with research results published in our country as well as in countries in the region (Kuzmanović & Vučetić, 2015; Lončarić, 2014; Mujagić & Buško, 2013; Zobenica & Oparnica, 2018), which also confirmed the highest correlations between these motivation components. This result can be interpreted by the nature of intrinsic motivation which is associated with a positive experience of the whole learning process, i.e. with finding meaning in what is being learned, which is also accompanied with attaching high value to the tasks and learning content.

According to Bandura (Bandura, 1993), motivation occurs under the influence of expectations vis-à-vis the outcomes of actions and perception of self-efficacy. So, the perception of oneself as someone capable of completing a particular task and achieving success is a powerful motivational driver. In addition to this, perception of oneself as an agent of change and personal development, where success is perceived as the result of effort that we invest in the process of learning, also influences our motivation powerfully (Ng, 2008). This result can be commented on in the light of positive development theory, which emphasises the significance of a developmental mind-set playing an important role in the self-regulation of behaviour of an individual and the selection of strategies they use in the learning process, in order to achieve success and contribute to different aspects of personal development (Dweck, 2006).

With regard to learning strategies, results of our research indicate that the highest correlation is obtained between Elaboration and Metacognitive self-regulation subscales. This is in line with the results of previous research (Mirkov, 2014), which indicate that metacognition shows the strongest correlation with those learning strategies focused on deeper understanding of learning material. In other words, a developed awareness and competence for managing one's own learning process enable the connecting of new information with already acquired knowledge when mastering learning material, in the process of constructing a system of knowledge that constantly expands and deepens. Other research (Mirkov, 2014) indicates that different aspects of self-regulation are connected with different orientations in learning, as well as with applying different cognitive strategies. Therefore, managing one's own learning enables the conscious setting of learning goals and, in line with one's own intentions, learning in a way that will lead to success as defined by a student according to their own criteria. In doing so, it is crucial for the student to choose those strategies that are adequate for accomplishing the set goals and to use them efficiently, and this is exactly what metacognitive self-regulation enables them to do. This is particularly important in higher education, taking into consideration the maturity of students when compared to younger students, and also because this is the final level of formal education, after which further learning and education is expected to be organized individually and throughout a lifetime.

The results of our research indicate that, unlike extrinsic motivation, intrinsic motivation has a higher potential for encouraging students to use different

strategies of self-regulated learning, which confirms the results of previous research and theoretical considerations on the importance of intrinsic motivation for the quality of the learning process (Wolters & Rosenthal, 2000). The received result is also in line with the results of previous research which shows that individual forms of motivation had different significance in the prediction of individual self-regulation strategies (Mujagić & Buško, 2013). Personal valuing of tasks and learning content implies, among other things, that a person who is learning finds meaning in it, which is also a significant motivational driver for use of different learning strategies. This result is in line with theoretical considerations within constructivist learning theories which emphasise that for the success of learning it is important for the person to, among other things, find personal meaning in what they are learning (Tomlinson, 2000).

The results of our research indicate that the students who are more intrinsically oriented, who believe that material is interesting and important, and who have high self-efficacy for learning and performance achieve better learning success in comparison with less successful students, which is also confirmed by the results of other studies (Pintrich & Garcia, 1991; Pintrich et al., 1993). The results further indicate that the majority of the offered learning strategies is also in correlation with the success that students achieve at university, so the more successful students use Elaboration, Organization, Critical thinking, Metacognitive self-regulation, Time and study environment management, Effort regulation, Peer learning and Help-seeking to a greater extent than less successful students. These results are in line with the results of other research (Garcia & Pintrich, 1996) which indicates that use of learning strategies is associated with academic success. Therefore, the results of our research confirm that for achieving success in learning it is important for students to be motivated and to achieve a certain level of self-regulation by using different learning strategies. The results of our research indicate that there are no statistically significant differences between successful and less successful students regarding Test anxiety, which is opposed to results of some other researchers conducted on student samples (Pintrich & Garcia, 1991; Pintrich et al., 1993). Namely, our research does not confirm that less successful students express to a greater extent anxiety in testing situations. Test anxiety is not a feature which refers only to successful or less successful students. While with less successful students it can occur as a consequence of their insecurity and insufficient knowledge, in more successful students it can

occur because they care about achieving success and maintaining it over the course of time. With regard to learning strategies, it is noteworthy that, according to our research findings, there are no statistically significant differences between more and less successful students in using Rehearsal strategy. This result is somewhat expected having in mind that, at the age of our respondents, rehearsal as a learning strategy in relation to achieving success does not have the same potential as other learning strategies whose application requires higher levels of cognitive engagement (Panadero, 2017).

One of our research results indicates that students of faculties of art use critical thinking as a learning strategy to a greater extent than the students of natural and social sciences. A possible explanation of this result lies in specific activities and learning contents at art faculties, which to a greater extent require using previously acquired knowledge and skills when learning new contents. The inclination of art students toward critical thinking can be explained by their greater creativity, closely connected with the talent they possess in the field of art they study. This can also be the result of an orientation of the art faculties toward encouraging the artistic identity of students, development of their personal artistic poetics, and creative and critical approaches to problem solving (Vujačić, Vesić, & Joksimović, 2019). The results indicate that students of the faculties of art, when compared to the students of natural sciences, have a more pronounced intrinsic motivation for learning study programs. This result is in line with the generally accepted belief that artists have an intrinsic motivation to deal with artistic work and aspiration to connect personal identity with creative, artistic practice (Bridgstock & Cunningham, 2016). This result is supported by findings of research conducted in our country with its focus on the Faculty of Fine Arts students' visions on their future professional work. The results of this research indicated that "the work of a fine artist implies continuous effort and work, and a clearly underlined initiative followed by self-confidence, self-belief, and belief in the creative potential" (Vujačić, Vesić, & Joksimović, 2019: 353).

The results of some previously published research (Jakšić & Vizek-Vidović, 2008; Patrick, Ryan, & Pintrich, 1999; Pajares, 2002) indicate that, when compared to male students, female students use different learning strategies to a greater extent, which is also confirmed by our research. Namely, it has been established that out of nine learning strategies offered, our female respondents, when compared to male students, use six strategies more often: Rehearsal, Elaboration,

Organization, Metacognitive self-regulation, Time and study environment management, and Peer learning. On the other hand, our results indicate that male students demonstrate higher self-confidence and belief in their abilities, and that female students express a more pronounced test anxiety when compared to male students. This result is in line with the results of previous research which confirmed that female students demonstrate a greater concern about their success and less faith in achieving satisfactory results at tests (Elliot & McGregor, 1999; Schunk & Pajares, 2005).

CONCLUSION

The results obtained in our research confirm the results of previous studies in this field. It was confirmed that for achieving learning success it is important for students to be motivated and to achieve a certain level of self-regulation by using different learning strategies; that individual forms of motivation have importance in predicting different self-regulation strategies; that at University level, rehearsal as a learning strategy has a lower potential of leading to success than learning strategies that require higher levels of cognitive engagement; and that female students, when compared to male students, use different cognitive and metacognitive strategies to a greater extent. The results of our research contribute to this field by pointing out the differences in levels of self-regulation between students of different fields of study, considering that in previous research high correlation values between these variables have not been established. Unlike the results of previous research, it is established that test anxiety is not an exclusive feature for less successful students, which can be of use for further study and an understanding of connections between anxiety and motivation.

We see the key implications of our research in the need for teaching practice at faculties to be based, as much as possible, on modern theories of development and the learning process, based on self-regulation being a necessary aspect of the learning process, personal development, and the success of an individual. The skills of self-regulated learning are developed over the course of time, and can be encouraged in teaching practice by designing situations and activities in which students can practice these skills, as well as by continuous monitoring by teachers and providing adequate feedback (Zimmerman & Kitsantas, 2005). Thus, applying

the formative assessment, which puts emphasis on constructive feedback provided by a teacher to students, is of a great importance as it encourages motivation and the use of different strategies, as well as more efficient regulation of one's own learning process.

In further research in this field it would be useful to examine whether students who have different motivational profiles and who use different learning strategies, achieve success in different ways, in other words, to investigate whether there is one or more different ways to achieve success at studies. This is why the application of cluster analysis can provide an answer to the question of which components of self-regulation could be crucial for different ways of achieving success in the teaching environments included in research. In addition to this, by applying mixed method research it would be interesting to examine which teaching practices at universities lead to higher levels of self-regulated learning in students, and whether they differ depending on the field to which the faculty belongs. In order to attain a more reliable data on effects of different teaching practices, it would be useful to apply a longitudinal approach.

REFERENCES

- ✉ Banarjee, P., & Kumar, K. (2014). A Study of Self-Regulated Learning and Academic Achievement among Science Graduate Students. *International Journal of Multidisciplinary Approach and Studies*, 1(6), 329–342.
- ✉ Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychology*, 28(2), 117–148.
- ✉ Boekaerts, M. (1996). Self-regulated Learning at the Junction of Cognition and Motivation. *European Psychologist*, 1(2), 100–112.
- ✉ Boekaerts, M. (1997). Self-regulated learning: A new concept embraced by researchers, policy makers, educators, teachers, and students. *Learning and Instruction*, 7, 161–186.
- ✉ Borkowski, J. (1996). Metacognition: Theory or chapter heading? *Learning and individual differences*, 8(4), 391-402.
- ✉ Bridgstock, R., & Cunningham, S. (2016). Creative labour and graduate outcomes: Implications for higher education and cultural policy. *International Journal of Cultural Policy*, 22(1), 10–26.
- ✉ Butler, D. L., & Winne, P. H. (1995). Feedback and self-regulated learning: a theoretical synthesis. *Review of Educational Research*, 65(3), 245-281.
- ✉ Dent, A. L., & Koenka, A. C. (2016). The Relation Between Self-Regulated Learning and Academic Achievement Across Childhood and Adolescence: A Meta-Analysis. *Educational Psychology Review*, 28 (3), 425–474. doi: 10.1007/s10648-015-9320-8.
- ✉ Duncan, T., Pintrich, P., Smith, D., & McKeachie, W. (2015). *Motivated strategies for learning questionnaire (MSLQ) manual*. https://www.researchgate.net/publication/280741846_

Motivated_Strategies_for_Learning_Questionnaire_MSLQ_Manual<https://doi.org/10.13140/RG.2.1.2547.6968>. Accessed 20 May 2020.

- 📁 Dweck, C. S. (2006). *Mindset: The New Psychology of Success*. New York: Random House Publishing Group.
- 📁 Elliot, A. J., McGregor, H. A., & Gable, S. (1999). Achievement goals, study strategies, and exam performance: a mediational analysis. *Journal of Educational Psychology*, 91(3), 549-563.
- 📁 European Commission (2002). Key Competencies, A developing concept in general compulsory education. Brussels: Eurydice. Retrieved April 20, 2017. from: https://www.google.rs/url?sa=t&rct=j&q=&esrc=s&source=web&cd=6&ved=0ahUKEwjo2q__8fHUAh-WGXhQKHT5AASkQFghNMAU&url=http%3A%2F%2Fwww.edmide.gr%2FKEI-MENA%2520E.U%2Fkey%2520competences%2520Europe.pdf&usq=AFOjCNGCmFvxYT-pmkGz3LOF6yDSguSYN2A&cad=rja
- 📁 Garcia, T., & Pintrich, P.R. (1994). Regulating motivation and cognition in the classroom: The role of self-schemas and self-regulatory strategies. In D.H. Schunk & B.J. Zimmerman (Eds.), *Self-regulation of learning and performance: Issues and educational applications* (pp. 132-157). Hillsdale, NJ: Lawrence Erlbaum Associates.
- 📁 Garcia, T., & Pintrich, P. R. (1996). The effects of autonomy on motivation and performance in the college classroom. *Contemporary educational psychology*, 21(4), 477-486.
- 📁 Hadwin, A. F., Nesbit, J. C., Jamieson-Noel, D., Code, J., & Winne, P. H. (2007). Examining trace data to explore self-regulated learning. *Metacognition and Learning*, 2(2-3), 107-124.
- 📁 Jakšić, M., & Vizek-Vidović, V. (2008). Ciljevi postignuća, percepcija kompetentnosti, spol i strategije učenja u općem akademskom kontekstu [Achievement goals, perception of competence, gender and learning strategies in general academic context]. *Suvremena psihologija*, 11(1), 7-24.
- 📁 Kuzmanović, B., & Vučetić, M. (2015). Samoregulacija učenja iz perspektive učenika i njena povezanost sa školskim uspehom [Self-regulation of learning from the student perspective and its relation with school success]. *Nastava i vaspitanje*, 64(2), 269-283.
- 📁 Lončarić, D. (2014). *Motivacija i strategije samoregulacije učenja: teorija, mjerenje i primjena [Motivation and self-regulation learning strategies: theory, measuring and application]*. Rijeka: Učiteljski fakultet u Rijeci.
- 📁 Mirkov, S. (2013). *Učenje – zašto i kako [Learning – why and how]*. Beograd: Institut za pedagoška istraživanja.
- 📁 Mirkov, S. (2014). Uloga samoregulacije u različitim pristupima učenju [Role of self-regulation in different approaches to learning]. *Zbornik Instituta za pedagoška istraživanja*, 46(2), 251-276.
- 📁 Mujagić, A., & Buško, V. (2013) Motivacijska uvjerenja i strategije samoregulacije u kontekstu modela samoreguliranoga učenja [Motivational beliefs and self-regulation strategies in the context of self-regulated learning model]. *Psihologijske teme*, 22(1), 93-115.
- 📁 Ng, C. H. (2008). Multiple goals learners and their differential patterns of learning. *Educational Psychology*, 28(4), 439-456.
- 📁 Pajares, F. (2002). Gender and perceived self-efficacy in self-regulated learning. *Theory Into Practice*, 41(2), 116-125.
- 📁 Panadero, E. (2017). A Review of Self-Regulated Learning: Six Models and Four Directions for Research. *Frontiers in psychology*, 8, 422. <https://doi.org/10.3389/fpsyg.2017.00422>
- 📁 Paris, S. G., & Paris, A. H. (2001). Classroom applications of research on self-regulated learning. *Educational psychologist*, 36(2), 89-101.

- ☞ Patrick, H., Ryan, A. M., & Pintrich, P. R. (1999). The differential impact of extrinsic and mastery goal orientations on males' and females' self-regulated learning. *Learning & Individual Differences, 11*(2), 153-172.
- ☞ Peng, C. (2012). Self-Regulated Learning Behaviour of College Students of Art and Their Academic Achievement. *Physics Procedia, 33*, 1451-1455. doi: 10.1016/j.phpro.2012.05.237.
- ☞ Pintrich, P. R. (2000). The role of goal orientation in self-regulated learning. In M. Boekaerts, P. R. Pintrich & M. Zeidner (Eds.), *Handbook of self-regulation: theory, research and applications* (pp. 452-502). San Diego, Ca: Academic.
- ☞ Pintrich, P. R. (2004). A conceptual framework for assessing motivation and self-regulated learning in college students. *Educational Psychology Review, 16*(4), 385-407. doi: 10.40726X/04/1200-0385/0
- ☞ Pintrich, P. R., & Schunk, D. H. (2002). *Motivation in education: Theory, research and applications*. Upper Saddle River, N.J.: Merrill, Prentice-Hall International.
- ☞ Pintrich, P. R., Smith, D. A. F. Garcia, T., & McKeachie, W. J. (1991). *A manual for the use of the motivated strategies for learning questionnaire (MSLQ)*. Michigan: The University of Michigan.
- ☞ Pintrich, P. R., Smith, D. A. F., Garcia, T., & McKeachie, W. J. (1993). Reliability and predictive validity of the Motivated Strategies for Learning Questionnaire (MSLQ). *Educational and Psychological Measurement, 53*, 801-813.
- ☞ Perels, F., Dignath, C. & Schmitz, B. (2009). Is it possible to improve mathematical achievement by means of self-regulation strategies? Evaluation of an intervention in regular math classes. *European Journal of Psychology of Education, 24*(1), 17-31.
- ☞ Perry, N., Phillips, L., & Dowler, J. (2004). Examining Features of Tasks and their Potential to Promote Self-Regulated Learning. *Teachers Collage Record, 106* (9), 1854-1878.
- ☞ Postholm, M. B. (2011). Self-regulated learning in teaching: students' experiences. *Teachers and Teaching, 17*(3), 365 - 382.
- ☞ Puustinen, M. & Pulkkinen, L. (2001). Models of self-regulated learning: A review. *Scandinavian Journal of Educational Research, 45*(3), 269-286.
- ☞ Radulović, L., Stančić, M., & Bulatović, M. (2019). Strategije učenja i postignuće učenika – iskustvo jednog obrazovnog programa [Learning strategies and student achievement – experience of an educational program]. *Inovacije u nastavi – časopis za savremenu nastavu, 32*(1), 1-15.
- ☞ Schunk, D.H., & Pajares, F. (2005). Competence perceptions and academic functioning. In A. J. Elliot, & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 85-104). New York: The Guilford Press.
- ☞ Stančić, M. & Bulatović, M. (2017). Kako razvijati učeničke pristupe učenju - iskustva iz programa zasnovanog na koregulisanom učenju [How to develop student approaches to learning – experiences from the program based on self-regulated learning]. *Zbornik Instituta za pedagoška istraživanja, 49*(2), 170-190. doi: 10.2298/ZIP11702170S
- ☞ Tomlinson, C. A. (2000). Reconcilable differences: Standards-based teaching and differentiation. *Educational Leadership, 58*(1), 6-13.
- ☞ Torenbeek, M., Jansen, E., & Suhre, C. (2013). Predicting Undergraduates' Academic Achievement: The Role of the Curriculum, Time Investment and Self-Regulated Learning. *Studies in Higher Education, 38*(9), 1393-1406. doi: 10.1080/03075079.2011.640996.
- ☞ Vujačić, M., Vesić, D., & Joksimović, A. (2019). Visions of Students of Faculty of Fine Arts of Professional Life and Work. *Journal of the Institute for educational research, 51*(1), 326-365.

- ☞ Winne, P. H., & Hadwin, A. F. (2013). nStudy: Tracing and supporting self-regulated learning in the Internet. In R. Azevedo, & V. Alevan, (Eds.) *International handbook of metacognition and learning technologies* (pp. 293-308). Springer, New York, NY.
- ☞ Wolters, C.A. (2003). Regulation of motivation: Evaluating an underemphasized aspect of self-regulated learning. *Educational Psychologist*, 38(4), 189-205.
- ☞ Wolters, C.A. (2011). Regulation of motivation: Contextual and social aspects. *Teachers College Record*, 113(2), 265-283.
- ☞ Wolters, C.A., Pintrich, P.R., & Karabenick, S.A. (2003). *Assessing academic self-regulated learning*. Paper prepared for the Conference on Indicators of Positive Development: Definitions, Measures, and Prospective Validity, March 2003. Retrieved from https://www.researchgate.net/profile/Stuart_Karabenick/publication/225229608_Assessing_Academic_Self-Regulated_Learning/links/5416daec0cf2bb7347db788a/Assessing-Academic-Self-Regulated-Learning.pdf
- ☞ Wolters, C.A., & Rosenthal, H. (2000). The relationship between students' motivational beliefs and their use of motivational regulation strategies. *International Journal of Educational Research*, 33(7-8), 801-820.
- ☞ Wolters, C.A., Yu, S.L., & Pintrich, P.R. (1996). The relation between goal orientation and students' motivational beliefs and self-regulated learning. *Learning and Individual Differences*, 8(3), 211-238.
- ☞ Zimmerman, B. J. (1986). Becoming a self-regulated learner: Which are the key sub-processes? *Contemporary educational psychology*, 11(4), 307-313.
- ☞ Zimmerman, B. J. (2001). Theories of self-regulated learning and academic achievement: An overview and analysis. In B. J. Zimmerman & D. H. Schunk (Eds.), *Self-regulated learning and academic achievement: Theoretical perspectives* (pp. 1-37). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.
- ☞ Zimmerman, B. J. (2008). Investigating Self-Regulation and Motivation: Historical Background, Methodological Developments, and Future Prospects. *American Educational Research Journal*, 45(1), 166-183. doi: 10.3102/0002831207312909.
- ☞ Zimmerman, B. J., & Bandura, A. (1994). Impact of self-regulatory influences on writing course attainment. *American Educational Research Journal*, 31(4), 845-862.
- ☞ Zimmerman, B. J., & Kitsantas, A. (2005). The Hidden Dimension of Personal Competence: Self-Regulated Learning and Practice. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 509-526). New York: Guilford Publications.
- ☞ Zobenica, M.S., & Oparnica, L.M. (2018). Neke komponente samoregulacije tokom učenja matematike kod studenata Pedagoškog fakulteta u Somboru [Some self-regulation components in learning mathematics at the students of Teacher Education Faculty in Sombor]. *Inovacije u nastavi - časopis za savremenu nastavu*, 31(1), 90-102.

AUTHORS' BIOGRAPHIES



Karina AVAGYAN

PhD, is a linguist, Russian language teacher and translator, Center for Russian Studies, Faculty of Political Science, Belgrade, Serbia. Her fields of research are: cognitive linguistics, ethnic stereotype, contrastive analysis, conceptualisation, associative experiment.

E-mail: karinka2576@mail.ru

Sanja BLAGDANIĆ

PhD, associate Professor of natural and social sciences teaching methodology and vice-dean for Scientific research at the Teacher Education Faculty, University of Belgrade. Her fields of research are: science and history teaching in primary education, pupils' misconceptions, and science literacy.

E-mail: sanja.blagdanic@uf.bg.ac.rs.

Marija BOŠNJAK STEPANOVIĆ

PhD in early science education, associate professor at the Faculty of Education in Sombor, Serbia. Her fields of research are: inquiry-based learning, project-based learning, and science concept development.

E-mail: 96marija.bosnjak@gmail.com

Lidija BUKVIĆ BRANKOVIĆ

MA, is a defectologist, PhD student at the University of Belgrade – Faculty of Special Education and Rehabilitation, Serbia. Her fields of research are: problem behaviour prevention, positive youth development, protective and risk factors in schools.

E-mail: lidija_bukvic@yahoo.com

Ariunsanaa BYAMBAA

PhD, is a microbiologist and a pedagogist, professor of the Department of Microbiology, School of Bio-Medicine, Mongolian National University of Medical Sciences, Ulaanbaatarm Mongolia. Her field of research is qualitative methodology in educational research.

E-mail: ariunsanaa.b@mnums.edu.mn.

Sonja ČOTAR KONRAD

PhD, is a psychologist, associate professor of Psychology at the University of Primorska, Faculty of Education, Koper, Slovenia. Her fields of research are ICT in education, university teaching, teacher competence, and development of preschool children.

E-mail: sonja.cotarkonrad@upr.si

Ivana ĐERIĆ

PhD, is a pedagogist, research associate at the Institute for Educational Research, Belgrade, Serbia. Her research interests are: reflexive practice in professional learning, project-based learning, student motivation and autonomy, and qualitative methodology in educational research.

E-mail: ivana.brestiv@gmail.com

Jelena ĐERMANOV

PhD, associate professor of pedagogy, University of Novi Sad, Faculty of Philosophy, Department of Pedagogy, Serbia. Her fields of research are General and School pedagogy, Pedagogical Axiology (evaluation in education, interactions, communication and interpersonal relations in education, hidden curriculum, class and school climate, school culture).

E-mail: jdjer@ff.uns.ac.rs

Rajka ĐEVIĆ

PhD, is a pedagogist, research associate at the Institute for Educational Research, Belgrade, Serbia. Her fields of research are: inclusive education, social relationships of students with developmental disabilities, teacher professional development, teaching methods.

E-mail: rajkadjevic@gmail.com

Maia GELASHVILI

is a PhD student and research assistant at the Centre for International Higher Education, Boston College, USA. Her fields of research are quality assurance of higher education, international and comparative education, college teaching and assessment.

E-mail: gelashvi@bc.edu

Batbaatar GUNCHIN

Academician Member of Mongolian Academy of Medical Sciences, Doctor of Philosophy Degree in Medicine; Vice president for Academic Affairs at the Mongolian National University of Medical Sciences; President of Mongolian National University of Medical Sciences, Ulaanbaatar, Mongolia. His fields of research are: education development, reference value of physiology, biochemistry, immunology in Mongols, improving medical service by advancing pre-graduate study for fundamental and medical microbiology for medical students and by updating residents and medical doctors in Mongolia.

E-mail: batbaatar@mnums.edu.mn

Nikoleta GUTVAJN

PhD, senior research associate and director of the Institute for Educational Research, Belgrade, Serbia. Her fields of research are: identity, school underachievement, and qualitative methodology in educational research.

E-mail: gutvajnnikoleta@gmail.com

Ljeposava ILIJIĆ

PhD, is a special education teacher, research fellow at the Institute of Criminological and Sociological research. Her fields of interest are a focus on criminological and penological issues, the problems of execution of the prison sentence, treatment and convicts, education and professional training of prisoners, and social reintegration of ex-offenders.

Email: lelalela_bgd@yahoo.com

Tijana JOKIĆ ZORKIĆ

psychologist, is a PhD student and a researcher at the Centre for Education Policy, Belgrade, Serbia. Her fields of research are inclusion and diversity in education, appropriation of education policy, qualitative methodology in educational research.

E-mail: tijana.zjokic@gmail.com

Sergey KOKHAN

Candidate of Medical Sciences, Associate Professor, director of the Regional Center for Inclusive Education, Transbaikal State University, Chita, Russia. His

fields of research are: inclusive education, psychological and pedagogical support of students with disabilities, the development of socio-cultural capabilities and adaptive sports, modern aspects of medical and social rehabilitation.

E-mail: ispsmed@mail.ru

Isidora KORAC

PhD in Pedagogy and PhD in Teaching Methodology. Professor in the scientific field: Pedagogical and Didactic group of subjects at Preschool Teacher Training and Business Informatics College of Applied Studies Sirmium, Sremska Mitrovica, Serbia. Her fields of research are: school and preschool teacher's professional development, class/school and preschool climate, and aesthetic education.

E-mail: oisidora@gmail.com

Marina KOVAČEVIĆ LEPOJEVIĆ

PhD, is a special education teacher, research associate at the Institute for Educational Research, Belgrade, Serbia. She participates in research projects related to students' behavioral problems, positive youth development, socioemotional learning, school, and family climate.

Email: marina.lepojevic@gmail.com

Witold KOWALSKI

Professor WSG: The University of Economics in Bydgoszcz. The fields of his research are: the introduction of health-saving technologies among the younger generation and student youth, especially recreational opportunities that contribute to human longevity.

E-mail: wiciukow@interia.pl

Jason LAKER

PhD, is a professor of counselor education at San José State University, California, USA; and Affiliated Research Faculty with the Center for Research and Education on Gender and Sexuality at San Francisco State University. His fields of research are: international and comparative higher education studies, counseling, student psychosocial development and support programs, and gender studies.

E-mail: jlaker.sjsu@gmail.com

Emilija LAZAREVIĆ

PhD, is a defectologist speech therapist and defectologist for Education and Rehabilitation Hearing Disability Persons, Principal Research Fellow, Institute for Educational Research, Belgrade, Serbia. Her fields of research are: speech-language development, speech-language disorders, early literacy development, reading and writing disorders, specific learning disabilities.

E-mail: elazarevic@ipi.ac.rs

Dušica MALINIĆ

is a research associate at the Institute for Educational Research, Belgrade, Serbia. She has a PhD in education from the University of Belgrade. Her research focus is the causes of students' academic failure, teachers' pedagogical and methodical competence, and leadership in education.

E-mail: malinic.dusica@gmail.com

Marija MALJKOVIĆ

PhD, is a special education teacher, Assistant professor at the University of Belgrade – Faculty of Special Education and Rehabilitation. Her interests are focused on the fields of special education and rehabilitation, treatment of juvenile delinquents, systemic family therapy, addiction, and behavioral disorders.

Email: mara.maljkovic@gmail.com

Milica MARUŠIĆ JABLANOVIĆ

is a psychologist and doctor of andragogy, senior research associate employed at the Institute of Educational Research in Belgrade, Serbia. Her fields of research interest are teacher education and career development, personal values, scientific and environmental education and literacy.

E-mail millica13@yahoo.com, milica.m.jablanovic@gmail.com

Olga MIKHAILOVA

PhD, Assistant Professor of the Department of Psychology and Pedagogy, Faculty of Philology, Peoples' Friendship University of Russia (RUDN University), Moscow, Russia. Her fields of research are: personality development psychology, psychology of innovation, acmeology and adragogy.

E-mail: olga00241@yandex.ru; mikhaylova-ob@rudn.ru

Mihaylo MILOVANOVITCH

is senior policy specialist for system change and lifelong learning with the European Training Foundation, Italy, and a pro-bono affiliate and education integrity expert for the Center for Applied Policy and Integrity, Bulgaria. His current work and publications focus on policy appropriation experiences in education, integrity of education policy and practice, and stakeholder-driven education policy improvement in countries of Eastern Europe, Central Asia and Northern Africa.

Email: mihaylo@policycenters.org

Snežana MIRKOV

PhD, is a pedagogist, research associate at the Institute for Educational Research, Belgrade, Serbia. Her fields of interest are: different aspects of the learning process in academic settings (learning goals, learning strategies, self-regulation, epistemological beliefs), and their relations with the learning effects achieved in the teaching process.

E-mail: smirkov@ipi.ac.rs

Gordana MIŠČEVIĆ

PhD, is a full professor in the field of social, environmental and scientific education (SESE) teaching methodology at the Teacher Education Faculty, University of Belgrade, Serbia. Her fields of research are: environmental education methodology, primary school teacher education (elementary science), preschool teacher education (elementary science), innovative models of work with children in the field of in elementary science, development of pupils' metacognition.

E-mail: gordana.miscevic@uf.bg.ac.rs

Kornelija MRNJAUS

PhD, is associate professor at the University of Rijeka, Faculty of Humanities and Social Sciences, Department of Education, Rijeka, Croatia. Her fields of research are: vocational education and training, career counseling, values education, and intercultural education.

E-mail: kornelija.mrnjaus@uniri.hr

Andreas OIKONOMOU

PhD, is a psychologist, associate professor of the Department of Education at the School of Pedagogical and Technological Education, Thessaloniki, Greece. His fields of research are: educational psychology, developmental psychology, teacher education, environmental education.

E-mail: aoikonomou@aspete.gr

Kristinka OVESNI

PhD, is an andragogist, full-time professor at the Department for Pedagogy and Andragogy, Faculty of Philosophy, University of Belgrade, Serbia. Her fields of research are: human resource development, theories of adult learning, professional development, adult education planning.

E-mail: kovesni@gmail.com; kovesni@f.bg.ac.rs

Jelena PAVLOVIĆ

assistant professor at the Department of Psychology, Faculty of Philosophy, University of Belgrade. Research interests: learning and development in organizations, coaching psychology, qualitative research methods.

Email: jelena.pavlovic@f.bg.ac.rs

Branislava POPOVIĆ-ĆITIĆ

PhD, is a special pedagogist, full professor at the University of Belgrade – Faculty of Special Education and Rehabilitation, Serbia. Her fields of research are: prevention science, positive youth development and school-based prevention programs.

E-mail: popovb@eunet.rs

Vera RADOVIĆ

PhD, is a pedagogist, associate professor at the Teacher Education Faculty, University of Belgrade, Serbia. Her fields of research are: general didactics, professional education, and development of teachers.

E-mail: vera.radovic@uf.bg.ac.rs

Elena ROMANOVA

PhD, Associate professor in the Department of Physical Education, Altai State University, Russian Federation. Her fields of research are: Motivation of young people to engage in physical culture and sports, physical culture and sports at university, inclusive education, modern aspects of medical and social rehabilitation.

E-mail: romanovaev.2007@mail.ru

Mile SRBINOVSKI

PhD, Associate Professor, Faculty of Technical Sciences, Mother Teresa University, Skopje, Republic of North Macedonia. His fields of research are: environmental education, education for sustainability, ecology, environmental protection, biology education.

E-mail: mile.srbinovski@unt.edu.mk

Jelena STANIŠIĆ

PhD, is a pedagogist, research associate at the Institute for Educational Research, Belgrade, Serbia. The fields of her research are: environmental education, science study, teaching methods, and learning strategies.

E-mail: jstanisic@ipi.ac.rs

Jelena STEVANOVIĆ

PhD, is a philologist, senior research associate in the Institute for Educational Research, Belgrade, Serbia. Her fields of research are: language culture/ language competence and functional literacy, Serbian language in primary and high school level, stylistics and orthography of Serbian language, critical literacy and theoretical and empirical research into textbooks.

E-mail: jelena.stevanovic.jelena@gmail.com

Danijela ŠĆEPANOVIĆ

PhD, is Education Policy Analyst and Education Technologist working on research and developmental projects in the area of digital education. She works at the Ministry of Education, Science and Technological Development in Serbia. She is an evaluation expert for the H2020 research program and member of the European Commission ET 2020 Working Groups

related to Digital Education development since 2014 - Digital and Online Learning (2013-2015), Digital Skills and Competences (2015-2017), Digital Education, Learning, Teaching and Assessment (2018-2020).

E-mail: danijela.scepanovic@mpn.gov.rs

Tina ŠTEMBERGER

PhD, is a pedagogist, associate professor of Educational Research and a vice dean research at the University of Primorska, Faculty of Education, Koper, Slovenia. Her fields of research are educational research, alternative research methods, teacher competence, and inclusion.

E-mail: tina.stemberger@upr.si

Milja VUJAČIĆ

PhD, is a pedagogist, senior research associate at the Institute for Educational Research. Her fields of research are: inclusive education, teacher professional development, cooperative learning, school effectiveness.

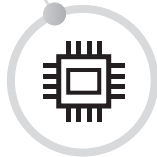
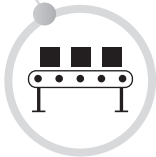
E-mail: mvujacic@ipi.ac.rs

Janja ŽMAVC

PhD, is a linguist, research associate, and the head of the Centre for discourse studies in education at the Educational Research Institute, Ljubljana, Slovenia. Her fields of research are: rhetoric, argumentation, classics, multilingualism, curriculum design, didactics, discourse in education.

E-mail: janja.zmavc@gmail.com

AUTHORS' INDEX



A

Abazi - 354, 357, 362
Abbott - 375
Abd-el-Khalick - 362
Abel - 339
Aczél - 77
Adams - 142
Agnew - 376
Agyeman - 346
Aizer - 375
Ajzen - 339, 346
Akerson - 38
Aleahmad - 175
Alexander - 375
Alexandrova - 261
Alkaff - 353
Allen - 49
Allman - 174
Almeida - 65
Almendarez - 27
Ames - 297
Ananiev - 319, 321, 325
Anderson D.M. - 389
Anderson J. - 236
Anderson W.L. - 203
Andryukhina - 259
Antić - 36, 37, 48, 53
Antonio - 176
Arabatzi - 361
Arba'at - 360
Archer - 297
Arnold - 135
Arnon - 343
Arthur - 396
Ash - 119

Astratova - 259, 262
Atman - 354
Avalos - 63
Avramović Z.- 95
Avramović I.- 135
Ax - 64
Ayas - 38

B

Baggaley - 238
Bahar - 355, 373
Bain - 201
Bajaj - 299
Bakken - 77
Bales - 380
Ball - 210
Ballantyne - 343
Banarjee - 277
Bandura - 274, 287
Banzragch - 238
Banjari - 203
Barcelona - 108
Barke - 361
Barman - 36
Barnett - 54, 55
Barnhart - 213
Barraza - 353, 362
Barron - 64, 65
Barrows - 56
Barthes - 74
Bartlett - 210
Bašić - 375
Batinca - 212, 222
Baumann - 119
Bazić - 10

- Beara - 142, 151
Beavers - 174
Beers - 131
Beijaard - 64
Belacchi - 119
Belawati - 238
Beletzan - 78
Benelli - 119, 120, 122, 129, 135
Benson - 396, 397, 398, 405, 406, 407,
409, 410, 411, 413
Beręsewicz - 213
Berg - 352
Bergdahl - 211, 212, 236, 237, 243
Berger - 65
Berglund - 396
Berk - 380
Berman - 131
Bernadette - 143
Betzer - 57
Biesta - 75, 92
Biggs - 296, 311
Binder - 119
Bishop A. - 119
Bishop K. - 352
Bizzell - 76
Bjerk - 377
Black - 65
Blagdanić - 36, 48, 49, 53
Blaikie - 361
Blake - 346
Blazar - 160
Blieck - 361
Blomberg - 380, 389
Blommaert - 212
Bloom - 131
Blumenfeld - 56, 57, 62, 65, 297
Blyth - 407, 409, 410, 411, 412
Bodenhorn - 353
Bodur - 173, 174, 175, 176, 177
Boekaerts - 274
Boeve - 361
Bogan - 352
Bogner - 343, 353
Boisvert - 297
Bolam - 141, 142
Bond - 211, 237
Bonsignore - 175
Booth - 74
Bordeleau - 297
Borisov - 320, 323
Borko - 64, 173, 174, 175, 176, 177
Borkowski - 273, 274
Bornstein - 131
Borzzone - 131
Bostrom - 361
Bouffard - 297
Bouillet - 386
Boujaoude - 362
Bowen - 54
Box - 54
Boyes - 38
Bracken - 353
Bracy - 377, 380
Bradshaw - 387
Braten - 310
Braun A. - 210
Braun V. - 145
Bredl - 212
Breit - 173
Bridgstock - 289

- Brinkworth - 388
 Bromley - 109
 Brow - 260
 Brown - 203, 327
 Brownell - 119
 Browning - 21, 23, 24, 25, 26, 27, 29
 Bruce - 57
 Buchanan - 57
 Bukvić - 124, 406, 407, 411
 Bulatović - 275
 Bullis - 389
 Bulunuz - 38
 Burke - 76
 Burns - 110
 Bushina - 338
 Bushway - 374, 375, 380
 Buško - 275, 286, 288
 Butenko - 338
 Butler - 274
 Butterworth - 95
 Buttran - 142, 154
- C, Č**
- Caena - 196
 Cafaro - 342
 Cain - 119
 Calvert - 299
 Cancino - 121
 Carlson - 119
 Carmi - 343
 Carpenter - 175, 177, 212
 Carr - 352, 375
 Casotti - 54
 Castro - 38, 40, 47
 Catalano - 375, 396
- Celinska - 377
 Cestnik - 81
 Chalikias - 361
 Chan - 298, 299, 362
 Chen - 174
 Cheng - 56
 Cherdakli - 253
 Chia - 55, 66
 Chin - 55, 66
 Choy - 56
 Christensen - 135
 Chu - 353
 Churchill - 173
 Clark - 61
 Clarke - 145, 387
 Coates - 203
 Cochran-Smith - 200
 Code - 274
 Cohen - 26
 Consiglio - 213
 Conzemius - 32
 Copas - 175
 Coppola - 352
 Crouse - 297, 299
 Culen - 353
 Cunningham - 289, 352
 Cutri - 174
 Cvetek - 200, 201, 202
 Czerniak - 65
 Čekić-Marković - 390
 Čolić - 122
- D, Đ, Dž**
- Dainville - 76
 Danisch - 76

- Darling-Hammond - 63, 64, 65
 Daudi - 352
 Day - 25, 375
 De Brabander - 297
 Deci - 259
 Dede - 173, 174, 176
 De Houwer - 131
 de Jong - 211
 De Laet - 387
 De La Paz - 57
 De Lisi - 135
 DeLisi - 377
 Delserieys - 38
 Denicolo - 159
 Denny - 387
 Dent - 274, 275, 276
 De Temple - 121
 Dewey - 29, 52
 Dickson - 197
 Dierkhising - 389
 Dietz - 336, 339, 340
 Dignath - 274
 Dijkstra - 141, 142, 143
 Dimitrijević - 97
 Dimitriou - 344
 Dimopoulos - 353
 Dochy - 56
 Dong - 212
 Dowler - 274
 Doyle - 375
 Draganić-Gajić - 376
 Dragičević - 97, 108, 109
 Driscoll - 297
 DuBois - 174, 175, 176, 177
 Dubovicki - 203
 Dubrovina - 259, 267
 Duell - 297, 299
 Dülmer - 339
 Duncan - 278, 279
 Dutcher - 342, 347
 Dweck - 169, 287, 296, 297
 Dziubani - 203
 Dzobelova - 259
 Đerić - 58, 59, 63, 64, 143, 151
 Đermanov - 143
 Đević - 64, 164
 Đorđev - 107
 Đorđević - 106
 Đukić - 143
 Džinović - 63, 64, 141, 160, 164
- ## E
- Easter - 298
 Eccles - 259, 388
 Edwards S.I. - 57
 Edwards O.W. - 398
 Efremov - 252
 Elliot - 290
 Elliott - 375, 377
 Enger - 352
 English - 64, 99, 122
 Entwisle - 375
 Entwistle - 295, 311
 Erdogan - 352, 353, 354, 355, 356, 360,
 361, 363, 373
 Erickson - 174
 Erylmaz - 40, 47
- ## F
- Fagan - 377

- Faherty - 237
Farley - 387
Farley Ripple - 142, 154
Farrington - 375, 388
Fauning - 132
Feather - 336
Fenning - 375
Fernandez-Ramirez - 203
Ferry - 76
Fien - 343
Filippatou - 57
Finley - 342
Fischer - 175, 176
Fishbein - 339, 346
Fishman - 69, 174, 175
Fitzgerald - 336
Fontanieu - 361
Forde - 197
Fors - 237
Fox B. - 173
Fox R.A. - 296
Fragkiadaki - 38
Fraser - 55
Freelon - 222
Friedman - 134
Fullan - 67, 160
Furlong - 387
- G**
- Gabler - 78
Galichin - 321, 323
Galyardt - 175
Gao - 296
Garb - 343, 353
Garcia - 274, 275, 288
Gariglietti - 299
Garrison - 353
Geier - 57
Gelman - 95
Gendenjamts - 238
Georgopoulos - 344
Geyer - 203
Ghazali - 339
Gijbels - 55, 56
Gillis - 131
Gini - 119
Given - 142
Glassett - 175
Gojkov - 53
Goldkind - 389
Goldman - 353
Goldstein - 168
Golinkoff - 190
Golley - 353
Golub - 262
Gonzales - 174
Gonzalez - 121
Gonzalez Cabanah - 296, 297
Gorard - 110
Gordeeva - 261, 262, 264, 265
Gottfredson - 375, 377, 388, 389
Gouveia - 78
Govaris - 57
Govekar Okoliš - 204
Grant - 61, 160
Green - 160
Greenhalgh - 177
Gregory - 259
Greiml-Fuhrmann - 203
Grey - 342

Grigorovitch - 38
 Griller Clark - 389
 Gromkova - 318, 325
 Groot - 375
 Gruber - 203
 Grue - 77
 Guagnano - 339
 Gudmundsdottir - 211, 212
 Gunstone - 48
 Gunter - 387
 Guskey - 160, 163

H

Hadwin - 274
 Hakes - 119
 Halverson - 154
 Hansen - 175
 Hansson - 38
 Hargadon - 175
 Hargreaves - 61, 67
 Harlan - 57
 Harlen - 54, 55
 Harlow - 380
 Harris J.M. - 62
 Harris P.R. - 361
 Hart - 361
 Hartman - 203
 Harvey - 61, 63, 260
 Hasani - 357, 360
 Hathaway - 211, 212
 Hattie - 311
 Havel - 389
 Hawkins - 375, 396
 Hebib - 177
 Heckhausen H. - 324
 Heckhausen J. - 261, 323
 Hee - 353
 Henny - 31
 Henriksen - 126, 134
 Hernandez-Ramos - 57
 Herriman - 119
 Hershberger - 43
 Herz - 389
 Herzberg - 76
 Hewitt - 377
 Hill - 203
 Hillman - 212
 Hines - 354, 361, 362, 363
 Hirsch - 389
 Hirschfield - 377, 391
 Hirschi - 323
 Hirsh-Pasek - 190
 Hjalmarsson - 375
 Hodges - 211, 212, 237
 Hofer - 297, 298
 Hoff - 120
 Hoffman - 143
 Hofman - 141, 142
 Hofstede - 338
 Hogan - 160
 Holmberg - 237
 Holmes-Henderson - 77
 Holzer - 362
 Hord - 141, 142
 Horsey - 375
 Houle - 54
 Howe - 143
 Hoyle - 297
 Hsu - 38, 353
 Hu - 174

Huberman - 160, 163
 Huddleston - 175
 Huei-Min - 352
 Hugensford - 343
 Huizinga - 377
 Hungerford - 353, 354, 361, 362, 363
 Hunniger - 212
 Hunt - 28
 Hutter - 297, 299

I

Idrizi - 357
 Iermakov - 237
 Igbokwe - 353
 Ilić M. - 36
 Ilić P. - 104
 Ilić Z. - 375, 376
 Ilyin - 322, 323, 325
 Impedovo - 38
 Inglehart - 338, 339, 345
 Inhelder - 127
 Ipek - 38
 Ismaili - 354, 357, 358, 362
 Ivanov - 237
 Ivić - 53, 124
 Ivković - 97

J

Jack - 387
 Jackson L.W. - 27, 28
 Jackson M. - 202, 206
 Jacobs - 173, 174, 175, 176, 177
 Jagaiah - 131
 Jahng - 176
 Jakšić M. - 289

Jakšić I. - 298
 Jamieson-Noel - 274
 Jank - 84
 Jansen - 274
 Janjić - 97
 Jass Ketelhut - 173
 Javornik Krečič - 205
 Jenkins - 119
 Jenlink - 63
 Jensen - 56, 212
 Jenson - 387, 388
 Jerotijević - 390
 Jianping - 335
 Joaguin - 325
 Johansson - 382
 John - 30, 37, 40, 43, 46, 138
 Johnson - 174, 342
 Johnston - 323
 Jokić - 54, 55, 65, 308
 Joksimović - 289
 Jones - 134
 Jonuzi - 357
 Jošić - 143
 Jovanović - 143, 390
 Joyce - 161, 170

K

Kaldahl - 76
 Kaldi - 57
 Kalof - 339
 Kaltakci - 40, 47
 Kame'enui - 119
 Kampeza - 38
 Kandil Ingeç - 37
 Kanfer - 324

- Kanselaar - 297
Karabenick - 274
Karaçalli - 57
Karimzadegan - 353
Karlberg - 213
Karyanto - 360, 361
Kašić - 119, 131
Kayalvizhi - 66
Kearns - 131
Keles - 353
Kelly - 71, 176
Kett - 380
Khawaja - 362
Khoshaba - 260
Kilpatrick - 53
Kim - 135
Kimmons - 174, 212
King - 32, 173, 203
Kinnucan-Welsch - 63
Kirby - 296
Kiseleva - 262
Kitsantas - 64, 290
Kızılaslan - 356, 373
Kjeldsen - 77
Klafki - 84
Knabb - 54
Knaflič - 97
Knoll - 52, 62
Knutsson - 237
Kock - 76
Kocsis - 353
Kodžopeljić - 122, 136
Koehler - 177
Koellner - 173, 174, 175, 176, 177
Koenka - 274, 275, 276
Kokhan - 237
Kokotsaki - 65
Kollmuss - 346
Kolodner - 53
Kolokoltsev - 237
Konstantinović-Vilić - 377
Kooij - 324
Kopnina - 342
Korać - 142, 143, 152, 153, 154, 155
Korolkov - 254
Korshunova - 259
Kortenkamp - 361
Korthagen - 160
Korur - 57
Kosanović - 142, 143, 155
Kostić - 130
Kostova - 353
Kostović - 142, 143, 155
Kovačević - 108, 112, 131
Kövecses - 108
Kraft - 160
Kraig - 318, 320
Krajcik - 56, 61, 63, 65
Krajcik - 67
Kranželić-Tavra - 375
Kranjčec - 204
Krasny - 174, 175, 177
Kraynik - 237
Krishnakumari - 361
Kristal - 108, 111
Krnjaja - 53, 143, 151, 152
Kromrey - 352
Kruger - 35, 40
Krutka - 175, 177, 212
Kub - 142

- Kubek - 375, 389, 391
Kubitskey - 174
Kudinov - 261, 323
Kuhlemeier - 360, 361, 363
Kumar - 277
Kundačina - 362
Kurland - 120, 121, 128, 129
Kutu - 356
Kuzmanović - 143, 286
Kwan - 57
Kyndt - 142
Kyriakopoulos - 361
- L**
- Ladewski - 61
Lagerweij - 360, 361, 363
Lagutkina - 236
Lai - 343
Lajović - 160
Lam - 56
Lammers - 203
Lang - 382
Lantz-Andersson - 212
Larina - 236
Larouche - 297
Larrabee - 36
Lasen - 142
Laurie - 203
Lavrič - 200, 202
Law - 298, 299
Lawy - 75, 92
Lay - 174, 176
Lazarević - 116, 118, 119, 122, 134
Lebedeva - 338
Lečić-Toševski - 376
Lee - 325, 353
LeeKeenan - 142
Leeming - 353
Le Fevre - 63
Leffert - 397, 399, 407, 410
Le Hebel - 361
Lehtonen - 213
Leontiev - 260, 261, 262
Levinson - 210
Lewis - 55
Li - 119
Liang J.C. - 38
Liang S.W. - 343
Lim - 380
Lin - 296
Lindstrand - 38
Lithoxidou - 344, 345
Liu - 174, 175, 177
Lochner - 375, 389
Lockee - 211, 237
Lodewijks - 297
Loeber - 374
Lonczak - 396
Lončarić - 286
Longobardi - 131
Lopatina - 252
Lorion - 413
Losch - 160
Louws - 174, 176, 177
Loyens - 56, 57
Lozanov-Crvenković - 173
Lu - 260
Lubovsky - 259, 267
Lucangeli - 119
Luloff - 342

Lundin - 212
Ljung-Djarf - 38

M

MacGregor - 203
MacLachlan - 353
Maddi - 260, 262, 263, 265, 266
Magajna - 205
Maguin - 374
Maguire - 210
Makki - 362
Maksić - 106, 110
Malinić - 63, 64, 386
Mancl - 352
Mancosu - 213
Mann - 380
Mannes - 397, 398, 409, 411
Marcer - 143
Marcinkowski - 353
Marcinkowskim - 352
Mardell - 142
Marentič Požarnik - 200, 202, 205
Marinellie - 122
Marin Jerez - 261, 323
Markova - 320, 325
Marković - 98
Martin - 32
Marton - 295, 298, 311
Marušić - 153
Marušić Jablanović - 36, 48, 49, 342,
343
Marx - 62
Maslova - 236
Maslow - 324
Mason - 110

Mates - 325
Matijević - 53, 57
Matović - 144
McBeth - 353
McCall - 174
McCloskey - 173
McGhee-Bidlack - 126, 129
McGinnis - 168
McGregor - 134, 290
McKeachie - 275, 278
McLaughlin - 63
Mc Mahon - 197
McMahon - 141
McManus - 296
Meece - 297
Mee Hee - 353
Meiboudia - 353
Meirink - 174
Memeti - 357, 358, 360
Menard - 377
Menyuk - 119
Menzies - 65
Meredith - 142
Mergendoller - 56
Merrick - 396
Messer - 37, 40, 43, 46
Metioui - 35, 37, 40, 43, 47
Meyer - 53, 84
Meyers - 353
Micić - 96
Mikeseii - 325
Mikhailova - 261, 321, 323
Milin - 143, 151
Milinković - 124
Milkus - 238

Miller - 75, 76, 176, 352
Milošević - 102, 113
Minigan - 66
Miočinović - 122, 127
Mioduser - 57
Mire - 31
Mirkov - 275, 287, 295, 296, 297, 298,
299, 300, 309, 311, 312
Mirzaahmedov - 259
Miščević - 48
Mitchell - 48
Moallem - 56
Močnik - 76
Mohd Zaid - 360
Molle - 63
Montpied - 361
Mony - 353
Moore - 211, 237, 361
Moretti - 389
Morgan - 380
Morrone - 352
Mortensen - 76
Moskal - 203
Moskovljević Popović - 120, 122
Moust - 56
Mrše - 390
Muis - 298, 312
Mujagić - 275, 286, 288
Mukaržovski - 96
Mumford - 398
Murati-Sherifi - 357
Muratović - 37
Murphy - 76, 203
Murray - 197, 198
Mutum - 339

Myers - 54

N

Nagy - 109, 119, 131, 323
Najaka - 375
Nastić-Stojanović - 375
Negev - 343, 353, 360, 361, 363
Nelson - 387
Nesbit - 274
Newman - 134
Newmann - 343
Ng - 287, 352
Nguyen - 339
Nikolić-Ristanović - 377
Nippold - 121, 132
Nissen - 126, 134
Noonan - 174
Norton - 342
Nouri - 211, 212, 236, 237, 243
Novak - 50, 63
Ntanos - 361
Nussbaum - 75

O

Obadović - 173
O'Brennan - 387
O'Brien - 360, 361
O'Connor - 361
O'Donnell - 375
O'Dwyer - 353
Ogunbode - 361
O'Keefe - 297
Olinghouse - 131
Olson - 121
Olsson - 38

- Olympia - 387
 Opačić - 114, 298, 300
 Oparnica - 275, 286
 Orion - 343
 Osborne - 66
 Oshkina - 237
 Osin - 261, 262, 264, 265
 O'sullivan - 237
 Ovesni - 173, 175, 177
- P**
- Pabon - 377
 Packer - 142, 343
 Pahl - 361
 Pais-Ribeiro - 411
 Pajares - 289
 Palmer - 353, 362
 Panadero - 273, 274, 276, 289
 Pantic - 353
 Parakevopoulos - 353
 Paris - 274
 Park - 174, 175, 176, 177
 Parker - 25, 175, 177
 Paternoster - 374, 375, 380
 Patrick - 289
 Pavlin - 76
 Pavlović J. - 159, 160, 161, 162, 163,
 297, 299
 Pavlović V. - 375
 Pavlović Breneselović - 53, 141, 143, 152
 Payne - 388
 Pecore - 56, 62
 Pe'er - 353
 Peguero - 377, 380
 Pejatović - 153
 Pejović-Milovančević - 376
 Peng - 274
 Perels - 274
 Perry - 274, 297
 Persico - 260
 Pešec Zadavec - 76
 Pešikan - 36, 48, 53, 124
 Peter - 396, 407
 Petrovački - 97, 111
 Petrović - 98, 143
 Phan - 298, 299, 309
 Philipsen - 175, 176, 177
 Phillips - 274
 Piatelli-Palmarini - 118
 Piccolo - 342
 Piirto - 382
 Pijaže - 36, 127
 Pine - 37, 40, 43, 46, 55
 Pintrich - 274, 275, 276, 277, 278, 288,
 289, 295
 Piquero - 380
 Pirc - 79
 Plazinić - 300, 308
 Plucker - 338
 Poldrugač - 375, 387
 Pollard R. - 54
 Pollard J.A. - 396
 Pollozhani - 358
 Polshina - 325
 Ponmozhi - 361
 Ponte - 64
 Pope - 159
 Popović - 96
 Popović-Čitić - 375, 406, 407, 411
 Popović-Deušić - 376

- Postholm - 274
 Powell - 173, 174, 176, 177
 Pozo-Munoz - 203
 Pratt - 119
 Primack - 342
 Prince - 213
 Prtljaga - 52, 53, 54, 58, 60
 Psacharopoulos - 27
 Puckett - 30, 31
 Pugachev - 237
 Pulkkinen - 273, 274
 Purdie - 311
 Putnam - 64
 Putnick - 131
 Puustinen - 273, 274
- Q**
 Quintilian - 77, 78, 83, 90
- R**
 Radden - 108
 Radić - 131
 Radlović-Čubrilo - 173
 Radović - 173, 175, 177
 Radulović - 152, 155, 275
 Ramli - 360, 361
 Rasskazova - 260, 261, 262
 Rasulić - 108
 Raven - 352
 Reboloso-Pacheco - 203
 Redditt - 142
 Reed - 375
 Rees - 110
 Regoli - 377
 Reilly - 134
 Reis - 213
 Reyes-Garcia - 353
 Rhodes - 297, 299
 Richardson V. - 63
 Richardson J.T.E. - 295, 298, 373
 Rickinson - 343
 Rieser-Danner - 54
 Rihn - 296
 Rikers - 56, 57
 Ristanović - 58, 60
 Roberts - 353
 Robinson - 238
 Robottom - 361
 Roccas - 336
 Rocco - 142
 Rockcastle - 352
 Rodriguez - 38, 40, 47
 Roehlkepartain - 397, 407, 409, 410, 411, 412
 Roglić - 375
 Rolston - 342
 Romanova - 237
 Romashko - 322
 Rosandić - 108
 Rosenfeld - 61
 Rosenthal - 288
 Ross - 142
 Rossi-Arnaud - 131
 Roth - 352, 354
 Rothstein - 66
 Rovira - 353
 Rud - 375
 Ruggiero - 353
 Ruiz-Mallen - 353
 Rumberger - 380

- Rumble - 237
 Rusljakova - 262
 Russ - 174, 175, 177
 Rutar - 204, 205
 Rutten - 75, 76
 Rutter - 361, 388
 Ryabukhina - 320, 323
 Ryan - 259, 289, 396
 Rynsaardt - 160
 Ryung - 353
- S**
- Sachs - 296, 298, 299
 Sadovnikova - 259
 Sagiv - 336
 Sagy - 343, 353
 Şahin - 38
 Saigo - 352
 Saizmaa - 238
 Sakashita - 238
 Salisbury - 110
 Salzberg - 343, 353
 Saljo - 295, 298, 311
 Sanchez Abchi - 131
 Sander - 203
 Sans - 76
 Santana - 66
 Savanović - 308
 Savery - 55
 Savić - 111
 Scales - 397, 398, 405, 406, 407, 409,
 410, 411, 413
 Schahn - 362
 Schaie - 319
 Schleicher - 95
 Schley - 121
 Schmidt - 56
 Schmitz - 274
 Schnase - 259
 Schoenebeck - 175
 Schommer - 297, 299, 300
 Schommer-Aikins - 297, 298, 299
 Schon - 159
 Schugurensky - 174
 Schultz - 336, 340, 341, 347, 361
 Schulz - 261, 323
 Schumann - 325, 327
 Schunk - 274, 290
 Schwartz - 336, 337, 338, 345
 Scott - 109, 119, 363
 Seegers - 297
 Segedinac - 173
 Segers - 56
 Seifert - 297
 Semenova - 259
 Senechal - 120
 Serra-Roldan - 398
 Sesma - 407
 Shaha - 175
 Shek - 396
 Shevyakova - 254
 Shiang-Yao - 352
 Shin-Cheng - 352
 Shih-Wu - 352, 360, 361
 Shillingford - 398
 Shoreman-Ouimet - 342
 Shores - 387
 Short - 161
 Showers - 161, 170
 Shramko - 407, 410

- Shriberg - 121
Shwom - 336
Sicurella - 375
Silberberg - 375
Silva - 119, 131, 411
Simić R. - 96, 104
Simić N. - 153, 308
Simmons - 352
Simoncini - 142
Sinclair - 389
Skaalvik - 297
Skordoulis - 361
Sladoje Bošnjak - 300
Smith C. -119
Smith D. -275, 278
Smith K. -199
Smolleck - 43
Snow - 120, 121, 128, 129
Soares - 410
Soćanin - 375
Soetaert - 75, 76
Sofroniou - 29
Sokoloff - 413
Soldatović - 143
Somuncuogly - 297
Sözbilir - 356, 373
Spataro - 131
Spiroska - 360
Srbinovski - 353, 354, 355, 357, 358, 359, 360, 361, 362, 363
Srećković-Stanković - 160
Stables - 352
Stahl - 109, 119
Stančić - 111, 275
Stanisstreet - 38
Stanišić - 342, 343, 359, 361
Stanković - 59, 63, 143, 151, 160, 163
Stanojčić - 96
Stanojević - 173, 175, 177
Starkova - 325
Starostina - 237
Stein - 36
Stepanova - 320, 321, 322, 325
Stern - 339, 340
Stevanović - 95, 96, 97, 102, 106, 107, 110, 112, 113, 119, 134
Stevenson - 203
Stoeger - 298
Stojanović - 53
Stojnov - 63, 160, 163
Stoll - 141
Stromso - 310
Suarez Riveiro - 296
Suhre - 274
Sujo de Montes - 174
Sun - 396
Sutton - 210
Sweeten - 374, 375, 380, 389
Swennen - 197, 200
Sychev - 261, 262, 264
Symanyuk - 320, 323
Syvertsen - 405, 409, 410, 411, 413
Szechy - 353
Szerenyi - 353
Šefer - 58, 63, 64, 66, 119
Ševa - 59
Ševkušić - 143
Šipka - 98
Štefanc - 84

T

Taccogna - 398
 Tager-Flusberg - 119
 Tal - 343, 353
 Tamim - 61
 Taneva - 236
 Tanner - 343
 Taraban - 54
 Taşkın - 37
 Taylor - 93, 135, 342
 Tenjović - 106, 110
 Teodorović - 59
 Thomas J.W. - 56, 61, 62, 67
 Thomas S. - 141
 Tighe - 119, 120
 Tindall-Biggins - 375
 To - 119
 Todd - 361
 Tolchinsky - 131
 Tomasello - 131
 Tomera - 354, 361, 362, 363
 Tomlinson - 288
 Tondeur - 175, 176, 177
 Torenbeek - 274
 Torphy - 174, 176, 177
 Tošović - 106
 Treleaven - 212, 222
 Tretyakova - 237
 Trikaliti - 344
 Trivić - 95
 Trudel - 35, 37, 40, 43, 47
 Trust - 211, 212, 237
 Tsai - 38
 Tulman - 380
 Tunmer - 119

Turaga - 361
 Türkmen - 37
 Turner - 215
 Tuul - 238
 Twombly - 142

U

Ültay - 37
 Unruh - 389
 Uşak - 355, 373
 Usta - 37
 Utkina - 259
 Uyanga - 238
 Uzelac - 386
 Uzun - 353

V

Valenčič Zuljan - 205
 Valle Arias - 296
 Van Berkel - 56
 Van Den Bergh - 360, 361, 363
 Van den Bossche - 56
 Van Den Brink - 375
 Van der Klink - 197
 Van der Linden - 297
 Van De Vijver - 338
 Van Driel - 174
 Van Dulmen - 407
 Vangrieken - 142
 Van Klaveren - 375
 Van Petegem - 361
 Van Putten - 297
 Van Tulder - 161
 Van Veen - 174
 Varis - 212

- Varisli - 360
 Vasić - 97, 122, 124, 129, 130, 133
 Vath - 174
 Vavrus - 210
 Veenman - 161
 Vegetti - 213
 Vermunt - 297
 Vescio - 142
 Veselinov - 58, 60
 Veselinović - 390
 Vesić - 289
 Vezeau - 297
 Vigotski - 36, 109
 Villadsen - 76
 Vilotijević - 53, 101
 Vizek-Vidović - 289
 Vladisavljević - 130
 Voeten - 161
 Vogrinc - 205
 Volk - 343, 353
 Voss R. - 203
 Voss H. L. - 375
 Voyer - 110
 Vučetić - 286
 Vujačić - 59, 64, 289
 Vuković - 122, 135
 Vušurović - 390
- W**
- Waintrup - 389
 Walford - 362
 Wallace - 141
 Walsh-Daneshmandi - 353
 Wang B. - 175, 177
 Wang M.T. - 388
 Ward - 375
 Wardani - 360, 361
 Ward-Lonegran - 132
 Washington - 342
 Waterston - 295
 Watson - 121
 Wehlage - 343
 Wehren - 135
 Wei - 63
 Wei-Ta - 352
 Welsh - 388
 Weltzel - 339
 Welzel - 338, 339, 345
 Weston - 342
 Whalen - 211, 212
 Whitehouse - 173
 Wierstra - 297
 Wierzbicka - 108
 Wigfield - 259
 Wiggins - 65
 Wiliam - 65
 Willet - 177
 Williams - 360, 375
 Willits - 363
 Willott - 238
 Wilson - 375
 Winder - 296
 Winne - 274
 Winstead - 210
 Wolf - 55
 Wolfgang - 380
 Wolters - 274, 275, 288
 Wong - 296
 Wood - 259
 Woodhall - 27

Wrosch - 261, 323

Wubbels - 64

X

Xenitidou - 344

Y

Yablochnikov - 259

Yap - 339

Yaşar - 356

Yavetz - 353

Yildirim - 297

Yilmaz - 38

Yopp - 119

Yovanoff - 389

Yu - 275, 352

Z

Zabukovec - 205

Zeer - 320, 323

Zener - 237

Zeng - 352

Zenki - 357

Zhu - 175, 176, 177

Zidar Gale - 79

Zimmerman - 273, 274, 290

Zlatic - 106

Zmeev - 323

Zmeyov - 318

Zobenica - 275, 286

Zsoka - 353

Zubrick - 135

Ž

Žagar - 76, 79, 80

Žmavc - 76, 78, 79, 80

Žunić-Pavlović - 375

CIP - Каталогизација у публикацији
Народна библиотека Србије, Београд

37.014.3(100)(082)

37.091.33(082)

37.018.43:077]:37.091.12(082)

37.015:159.953.5(082)

316.624(082)

PROBLEMS and perspectives of contemporary education / editors Nikoleta Gutvajn, Jelena Stanišić, Vera Radović. - Beograd : Institute for Educational Research : Faculty of Teacher Education ; Moscow : Faculty of Philology, Peoples' Friendship University of Russia, 2021 (Beograd : Kuća štampe plus). - 445 str. : graf. prikazi ; 30 cm. - (Series Pedagogical theory and practice ; 52)

Tiraž 300. - Str. 9-20: Foreword / Nikoleta Gutvajn, Jelena Stanišić, Vera Radović.
- Authors' biographies: str. 417-426. - Napomene i bibliografske reference uz tekst.
- Bibliografija uz svaki rad. - Registar.

ISBN 978-86-7447-157-9 (IPI;)

1. Gutvajn, Nikoleta, 1974- [приређивач, сакупљач] [аутор додатног текста]
2. Stanišić, Jelena, 1981- [приређивач, сакупљач] [аутор додатног текста] 3.
Radović, Vera Ž., 1972- [приређивач, сакупљач] [аутор додатног текста]
а) Образовна политика -- У свету -- Зборници б) Настава -- Иновације -
- Зборници в) Информациона технологија -- образовање на даљину -
- Зборници г) Учење учења -- Зборници д) Дивијантно понашање -- Зборници

COBISS.SR-ID 46560777

FROM REVIEWS

Main aim of the monograph titled *Problems and perspectives of contemporary education*, is to thoroughly explore, critically analyze and elaborate complex, dynamic, multilayers and reciprocal relationship between significant changes in educational social environment and readiness, of educational system to anticipate, recognize, understand and adequately respond to those challenges. All contributing authors enthusiastically embraced the notion that education presents an important and proactive agent of social changes and consequently accepted all challenges as an opportunity for improvement and development of both society and educational system.

Professor Emeritus Djuradj Stakic
Pennsylvania State University, USA

The monograph is dedicated to looking into extremely significant and current concerns within educational policy and educational practice. The selected topic is viewed from the perspectives of contemporary theoretical approaches, but it is also empirically researched. A very large and relevant literature was used both for explaining the selected research subject and discussing the obtained results. A diverse, contemporary methodology was applied in researches, and the authors of works, starting from the existing results, analysed issues at a deeper level and illuminated some aspects that had not been studied thus far.

Professor Marina Mikhailovna Mishina
Russian State University for the Humanities, Russia

The main topics covered by the monograph can be classified as traditional to some extent — related to approaches to learning, language culture etc., and modern — connected with the andragogical view, coaching in teacher training, also the problem of distance learning during the covid pandemic, and models for preventing problem behaviors... The main leitmotif that permeates the content of all presented articles is the topic of the development of key skills, attitudes, experience, creativity — by both subjects in the educational process, and it gives semantic integrity to the monograph.... In view of the new social realities, a reasonable emphasis is placed on the continuing education and development of the teachers themselves, dictated by the accelerated pace of social change.

Professor Teodora Stoytcheva Stoeva
University of Sofia „St. Kliment Ohridsky“, Bulgaria

ISBN 978-86-7447-157-9

