

Pre-service teachers' perceptions of factors contributing to school failure and their relationship to prior personal experience of school success

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Factors that pre-service class and subject teachers perceive as significant in explaining the occurrence of school failure were examined using mixed methods strategy. The qualitative phase of the study ($N = 74$) revealed that pre-service teachers recognize a wide range of causes for school failure (16 distinctive categories). The relative significance of the causes was established in the subsequent quantitative phase. The Scale of school failure causes was constructed, applied to 408 pre-service teachers and subjected to exploratory factor analysis, which pointed to the three latent groups of causes explaining 43% of variance. The lack of ability and motivation in students (1st factor) and the lack of educational support (2nd factor) were perceived as highly contributing to school failure, while moderate importance was attributed to the causes related to family and social context (3rd factor). Compared to pre-service subject teachers, pre-service class teachers were more willing to recognize the teachers' responsibility for the occurrence of school failure. Pre-service teachers' perceptions of different factors were related to prior experiences of school success.

Key words: pre-service teachers, school failure, teachers' beliefs, prior schooling experience

Highlights:

- Pre-service teachers recognize three distinct groups of causes of school failure (individual, educational, and familial/social).
- Lack of ability and motivation in students is perceived as the most important group of causes of school failure.

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- Pre-service class and subject teachers attach different importance to different groups of causes.
- Perceptions of different factors are related to prior personal experiences of school success.

Finding the ways to overcome school failure and to develop support strategies for students at risk of school failure is an important issue for contemporary educational research and educational policy. Even though school failure represents a major social problem, educational researchers and theoreticians have not yet reached a consensus on its meaning. Just as lay people share many different understandings of this phenomenon, in the academic literature school failure also takes many different labels and forms for the purposes of measurement (e.g., school dropout, grade repetition, low-achievement, under-achievement) (Psacharopoulos, 2007). Two contrasting views on the definition of school failure can be found in the literature. The more conventional, individual perspective, defines this phenomenon as a failure of a student in obtaining a minimum necessary standard determined by age/grade model (Faubert, 2012; OECD, 2010). This paper adopts a systemic perspective in which school failure is understood as a failure of a school or educational system to provide appropriate support and assistance to all students to achieve success in actualizing their academic potential (Faubert, 2012).

Guided by different concepts, numerous studies have indicated the existence of a range of factors that may affect the occurrence of school failure. These factors may be grouped into four broad groups: 1) individual factors, 2) family factors, 3) community and societal factors, and 4) school context characteristics (West & Pennell, 2003). Among the school context factors that affect the occurrence of school failure, one group of research studies examined the ways in which teachers contribute to students' low school achievement. These studies mainly focus on teachers' beliefs about low-achieving students, their classroom behavior, pedagogical approaches, expectations for students, etc. (Arroyo, Rhoad, & Drew, 1999; Good & Brophy, 1991; Malinić, 2014; Zohar, Degani, & Vaaknin, 2001). Different interventional and observational studies have shown that adequate educational and emotional support provided by the teachers can significantly reduce the risk of low-achievement and dropout among students who are at risk of school failure (Croninger & Lee, 2001; Hamre & Pianta, 2005).

Teachers' Beliefs about the Causes of School Failure

Teachers' beliefs about the nature and causes of school failure largely affect teachers' behavior towards unsuccessful students (Jones & Myhill,

2004). Based on general definitions of teachers' beliefs (Cook, 2002; Pajares, 1992), beliefs teachers hold about school failure can be defined as personal theories and opinions about the causes and proper treatment of school failure. Studies have shown that teachers tend to attribute students' failure mostly to the factors within the child, first and foremost to their abilities and school commitment or to factors relating to the home environment (e.g., parental support during the learning process, familial issues, poverty) (Giavrimis & Papanis, 2009; Kesterston, 2012; Malinić, 2009; Petersen, 2010; Poulou & Norwich, 2000; Soodak & Podell, 1994; Riley & Ungerleider, 2012). Furthermore, studies indicate that the beliefs teachers hold regarding the causes of failure affect their approach toward low-achievers, the stringency of their assessments (Matteucci & Gosling, 2004), and the goals they pursue through educational practices (Reyna & Weiner, 2001; Weiner, Graham, & Reyna, 1997). Specifically, when relating to academically unsuccessful students, teachers tend to express more compassion and less anger when they attribute students' low achievement to low ability (Georgiou, Christou, Stavrinides, & Panaoura, 2002). However, when teachers attribute low achievement to a lack of commitment or effort, they choose more severe, retributive educational interventions (Matteucci, 2007). In addition, teachers are less willing to accept responsibility for student failure if they believe that the student has not made enough of an effort (Georgiou et al., 2002).

Pre-service Teachers' Beliefs about Causes of School Failure

Teachers' beliefs begin developing spontaneously in early education and are based on personal academic experience. While in the pre-service¹ stage of education, teachers obtain systematic training that aims to develop a belief system that will enable them to adopt appropriate attitudes towards significant issues in education (Kennedy & Kennedy, 1996). If these beliefs are formed on the basis of incorrect assumptions and are not properly addressed at the pre-service stage of teacher training, the academic futures of their students may be jeopardized and may ultimately result in grade repetition or drop out (Beswick, Sloat, & Willms, 2008; Pearson, 2009). In order to change these false beliefs timely, it is of great importance to gain insight into the nature and content of pre-service teachers' beliefs about school failure.

In a number of studies that have dealt with beliefs concerning school failure among pre-service teachers a similar pattern was observed. Studies that have examined pre-service teachers' attitudes towards grade repetition show that pre-service teachers are positive about it as a type of strategy for remedying school failure. On the whole, pre-service teachers perceive students

1 In this paper, following Fessler's definition, pre-service phase of teachers' professional development is seen as a period which typically takes place in a college or university (Fessler, 1995, p. 185).

who repeat their grades as lacking commitment, having reduced abilities, or as being immature. To a lesser extent they also state inadequate family milieus or poor background as the causes of school failure. Pre-service teachers believe that parents' greater involvement in their children's educational development can be an efficient mean to combat school failure (Alkhrisha, 1994; Moynihan, 2008; Range, Yonke, & Young, 2011; Wynn, 2010). A significant difference between reports given by in-service and pre-service teachers is that in-service teachers rarely, or to a lesser extent, point to the factors such as inadequate teacher education and teachers' pedagogical preparation (Petersen, 2010). Pre-service teachers state, however, that their pre-service training curriculum does not provide them with adequate preparation for future work with students who, among other things, have motivational problems with regard to learning, possess false beliefs about school success, or who do not have adequate familial support (Stuart & Thurlow, 2000).

Prior Schooling Experience and Teachers' Beliefs

Having spent thousands of hours in the classroom as students, pre-service teachers inevitably adopt the values, beliefs and practices of their former teachers (Anderson & Piazza, 1996; Lortie, 1975). Different studies show that pre-service teachers enter their professional training with previously held beliefs about teaching and learning, such as what is right and wrong in a classroom and explanations for individual differences in academic achievement (Raths, 2001). Zeichner and Tabachnik (1981) point out that during the pre-service education period these previously held beliefs exist in a latent form but they become stronger once the students enter their own classrooms as trained practitioners. Although many researchers emphasize the importance prior schooling experience has for the development of teachers' beliefs (Bruner, 1996; Kagan, 1992; Kennedy, 1997; Pennington, 1995; Zeichner & Tabachnick, 1981), there is little empirical research examining teachers' memories of their former schooling (Chang-Kredl & Kingsley, 2014; Rothenberg, 1994), the role of previous schooling experiences in the formation of beliefs on teaching or learning among pre-service and in-service teachers.

Two studies examined the relationship between previous schooling experience and teachers' beliefs. Beghetto (2007) found a significant "carry-over effect" of pre-service teachers' past school achievement and goal orientations on their current beliefs about students' goal orientations and achievement behaviors. In addition, differences in teachers' past goal orientations predicted their attributions for student's engagement in achievement behaviors ("laziness" vs. "lack of confidence and support" as the reasons of avoidance). In another study, the same author found that pre-service teachers, who enjoyed their previous schooling less, were more likely to perceive promoting creativity among students as highly important (Beghetto, 2006). The same group of teachers was

significantly more likely to be confident in their ability to promote creativity to their future students.

Context of the Study – Teacher Education in Serbia

Class teachers and subject teachers in Serbia attain their required pre-service education by completing bachelor's and associate master degree programs mostly at state universities². Before gaining practical work experience in the first elementary education cycle (first to fourth grade of primary school), pre-service class teachers are prepared at teacher training faculties. Pre-service subject teachers are prepared at their home faculties by completing modules designed for the teaching profession or by taking teaching courses when specialized modules are not offered. After having completed these studies, subject teachers can work with students during the first cycle (teaching a foreign language or elective courses), during the second cycle of elementary education (from the fifth to the eighth grade in primary school) or at high schools and vocational schools.

The analysis revealed significant difference in the amount of pedagogical and psychological courses in the curriculum for the pre-service education for Serbian language and literature, and Mathematics subject teachers. Compared to the curriculum for the subject teachers' pre-service education program, the pre-service education curriculum for class teachers provides a significantly wider range of literature on psychology and pedagogy as well as teaching practice. Apart from courses on educational sciences³ and general subjects⁴, pre-service class teachers attend courses on teaching all the subjects studied at the lower elementary school level along with subject didactics and professional practice (Kovács-Cerovic, 2006). In addition, pre-service class teachers have the opportunity to broaden their knowledge by attending selected, elective courses in pedagogical/psychological or teaching method subject areas.

In contrast, pre-service Serbian language and literature teachers and pre-service teachers of Mathematics are offered a limited number of mostly single semester courses designed to prepare them for the teaching profession. They only study the vocational material during the first two terms, while courses in psychology, pedagogy, and subject didactics are introduced later on in their studies. The need to improve pre-service teacher training is also substantiated by the recent changes in the legislation. According to the new legislation pre-service subject teachers are obliged to attain 36 ECTS points in the field of teacher education (by taking psychology, pedagogy and subject didactics courses and completing school practice) (*Zakon o osnovama sistema obrazovanja i vaspitanja [Law on the Foundations of the Education System]*, 2018).

2 In exceptional cases, a person who has completed three years of higher vocational education may be recruited as a subject teacher. This mostly happens in vocational schools.

3 Pedagogy, Developmental Psychology, Education Psychology, General Didactics, Sociology of Education, Education Legislation, ICT in education etc.

4 Philosophy, Sociology, etc.

Scope of the Study

The aim of this study is to examine pre-service teachers' perceptions about factors that contribute to the occurrence of school failure. Pre-service teachers' education is supposed to develop a set of skills and beliefs that will later, in their professional work, direct them towards competent actions and decisions that are consistent with the objectives of the educational system (Chong, Wong, & Lang, n.d.). Since one of the universal goals of education systems around the world is to provide equal educational opportunities and reduce the gap in achievement among children, it is important to understand the beliefs (Pajares, 1992) which underlie teachers' attitudes towards school failure and low-achievement.

The context in which this study was conducted enabled us to examine whether different models of pre-service teacher education produced different sets of beliefs about school failure. Accordingly, we examined pre-service class teachers, pre-service Serbian language and literature teachers, and teachers of Mathematics and Computer sciences. It should be noted that teachers' beliefs do not entirely stem from their pre-service training but are also the result of their previous personal experience of school success (Alkhrisha, 1994). In this regard, an additional aim of this study was to analyse the relationship between the perception of factors that contribute to school failure, teachers' previous school achievement and their prior personal experience of school success.

Method

Participants

At the initial, qualitative stage of our research a total number of 74 pre-service class and subject teachers enrolled in three different teacher training faculties at the University of Belgrade were asked to list what they thought were the main causes of school failure. At the second, quantitative stage, another sample of 408 participants from the same population was surveyed. Structure of the sample according to faculty enrolment, gender, and age is presented in the Table 1.

Table 1
Breakdown of the sample according to faculty enrollment, gender, and age

	Qualitative study (N = 74)			Quantitative study (N = 408)		
	Female	Male	Age	Female	Male	Age
Pre-service class teachers						
Teacher Training Faculty, Department of Classroom Teaching	32 (43%)	2 (3%)	M = 21.35 SD = 2.39	158 (39%)	8 (2%)	M = 21.70 SD = 2.18
Pre-service subject teachers						
Faculty of Mathematics, Department of Mathematics Teaching	14 (19%)	0 (0%)	M = 21.45 SD = 2.36	99 (24%)	19 (5%)	M = 21.70 SD = 2.18
Faculty of Philology, Department of Serbian Language and Literature	21 (23%)	4 (5.5%)	M = 22.34 SD = 2.17	114 (28%)	10 (2.5%)	M = 23.13 SD = 2.25

Measurement Tools and Data Analysis

This study employed a mixed methods research approach. Qualitative tools were used to determine which factors were emphasized as causes for school failure by pre-service class and subject teachers. The data were collected using a web-based survey that included one open question: “Could you, please, consider and name what you think the main causes for school failure are? What factors lead to the fact that some children, when compared to their peers, receive poor grades or fail to achieve their full academic potential? Please list all the causes that you can think of.” University faculty members set up the survey hyperlink for the students. The participants answered the latter question in textual form – the average length of the answers was 5 to 18 words. An inductive thematic analysis of the content was employed to analyse the qualitative data (Boyatzis, 1998). Once the thematic patterns were extracted, two independent reviewers classified the answers. Cohen’s Kappa was used as a measure of the inter-rater reliability for all categories.

Quantitative instruments were used on a broader sample of pre-service teachers, with the intention of establishing the structure and order of the perceived causes of school failure. Based on a qualitative analysis of the qualitative data, a thematic scale of school failure causes was constructed. The scale consists of 12 items representing the most frequent⁵ thematic patterns extracted following the above analysis. The participants’ task was to evaluate to what degree each of the causes listed contributed to school failure as defined in the qualitative phase. They were provided with a five-level scale where 1 meant *not at all contributing* and 5 *highly contributing*. The items of the Scale of Factors Contributing to School Failure (FCSF) are presented in Table 2. In addition to the FCSF scale, the participants answered two additional questions on: 1) their average achievement at the end of elementary school (mean of average grades for each elementary school subject – objective measure of achievement); 2) self-perceived school achievement during elementary education (whether they perceived themselves as very unsuccessful, unsuccessful, average, successful, or very successful students – subjective measure of achievement). The questionnaire was in paper form and handed out in separate classes.

Results

Qualitative Study

Inductive analysis of the pre-service teachers’ answers. Through an inductive analysis of the content of the pre-service teachers’ answers about school failure factors, 17 thematic patterns were extracted. In each case the kappa coefficients were significant at a level of .01, demonstrating a good inter-rater reliability in all 17 categories (Table 2).

⁵ Cut-off point: $f^2 > .5$.

Table 2
Thematic patterns of the factors contributing to school failure according to pre-service teachers

Categories with typical answers	Frequency	Percentage	Kappa
1. Students' indifference and lack of motivation to learn "Students are unambitious, even though they can be more satisfied with mediocre results", "Students are uninterested in their education", "Students have low aspirations"	52	16.83%	.93
2. Teachers' use of inadequate pedagogical methods "Insufficient work individualization", "Deficiency of group work", "Lack of teachers' creativity"	36	11.65%	.95
3. Student's insufficient commitment to school and laziness, absence of study habits "Little effort and learning", "Student's laziness", "Insufficiently developed work habits", "Student does not work enough at home", "Postponing of studying and irregular studying"	34	11.00%	.92
4. Lack of parents' commitment to working with their children out of school "Lack of parents' support", "Lack of parents' interest in their child's education", "Parents do not work enough with their children at home"	28	9.06%	.92
5. Socio-emotional problems in the family "Problems in the family", "Family conflicts between parents where children suffer psychological violence", "Divorce", "Poor family relations", "Difficult childhood"	24	7.77%	.91
6. Reduced intelligence in students "Mental retardation", "Lower level of intelligence in students", "Different intellectual abilities of children"	24	7.77%	.89
7. Lack of teacher's interest and work motivation "Teacher's lack of commitment", "The first reason is teacher's negligence toward certain individuals, e.g. to the Roma children or socially disadvantaged students", "Teacher's lack of motivation to do their job responsibly"	20	6.47%	.94
8. Negative family and society attitude to education "Neither society nor family attach any importance to education", "A perception that it is probably futile to put an effort in education in a country where it is not valued the way it should be", "Lately, education is put at the last place, so young people do not bother with school"	20	6.47%	.91
9. Poor financial situation in the family "Poor conditions for studying", "Poverty", "Poor economic circumstances in which the child lives"	13	4.21%	.92
10. Teachers' inadequate education "Teacher's incompetence, i.e. insufficiently educated teacher", "The worst students enter our Teacher Colleges, so the teachers do not expect a lot from them", "Teachers get employed in education because they could not achieve anything else in their life"	11	3.56%	.89

Categories with typical answers	Frequency	Percentage	Kappa
11. Peer rejection “Issues with other students”, “Child’s inability to fit in the social environment”, “Students do not have good relationships with their peers, so they are not interested in learning”	10	3.24%	.95
12. Lack of positive role models and a negative media influence “Media with low-quality and inadequate programs”, “Bad examples in community and society”, “Kitch and trash (Schund) publicized in the mass media, with students spending too much time watching television or on the Internet”	8	2.59%	.85
13. Excessive use of Internet, social networks and video games “The Internet and video games”, “Internet addiction”, “Too many hours in front of the computer”	5	1.62%	1
14. Overly extensive curriculum “Too much studying material”, “Too much unnecessary information”, “Too many subjects”, “Lack of time”	5	1.62%	.88
15. Inadequate education policies “Present education policy”, “Ministry of education”, “New sets of educational laws”, “Too many students in the class”	5	1.62%	.83
16. Poor pre-knowledge and pre-school education “Poor pre-knowledge”, “Pre-school education”	3	0.97%	1
17. Other “Love problems”, “Physical appearance”, “Cheating”, “Reliance on parents’ wealth and influence”, “Differences in cultural identities”	11	3.56%	.93
Total	309	100	

Quantitative Study

Extraction of the latent factors contributing to school failure.

Exploratory factor analysis (EFA) was applied with the intention to explore the latent structure of the scale of school failure causes. Principal axis factoring (PAF) with Promax rotation was used as the method of extraction. The use of oblique rotation was justified by subsequent inspection of factorial scores correlations, which ranged from .28 to .38 (Tabachnick & Fidell, 2007). It is found that different causes contributing to school failure can be grouped into three factors that fully explain 43.50% of variance. The first factor includes societal aspects concerning family and social environment, the second factor consists of factors concerning teachers and parents’ educational support (teachers’ dedication, teachers’ education, work with parents), while the third factor includes personal factors attributed to students (intelligence, commitment, motivation – Table 3). The Cronbach alpha reliability coefficients of the extracted factors ranged from .74 to .78.

Table 3
Descriptive statistics and structure of the factors contributing to school failure

Items	<i>M (SD)</i>	Factors		
		1 (26.66%)	2 (10.73%)	3 (6.14%)
1. Reduced intelligence in students	3.47 (1.01)			.45
2. Student's insufficient commitment and laziness	4.45 (0.74)			.71
3. Students' indifference and lack of motivation	4.38 (0.75)			.71
4. Teachers' indifference and lack of motivation	4.20 (0.88)		.57	
5. Teachers' inadequate education	4.11 (0.96)		.85	
6. Teachers' use of inadequate pedagogical methods	4.07 (0.95)		.74	
7. Lack of parents' commitment to working with their children out of school	3.58 (1.08)	.38	.38	
8. Socio-emotional problems in the family	3.87 (0.95)	.44		
9. Poor financial situation in the family	2.89 (1.04)	.57		
10. Negative family and society attitude to education	3.29 (1.12)	.76		
11. Lack of positive role models and a negative media influence	3.31 (1.09)	.72		
12. Peer rejection	3.29 (1.11)	.66		

Note. Coefficient values under .20 are left out.

Following an exploratory factor analysis, average scores were computed for each of three factors and used in subsequent analyses. Using a two-way mixed analysis of variance (1. pre-service teacher profile – unrepeated factor, 2. factor of failure – repeated factor, the DV is the estimation of the factors' importance for the occurrence of school failure), a significant interaction was established between the unrepeated and repeated factor ($F(2, 396) = 4.41, p = .002$ – Figure 1). Students' personal attributes is the most important factor of failure determined by the students of Mathematics and Serbian language. The lack of teachers and parents' support was also perceived as highly contributing to school failure, while the participants attached moderate importance to factor concerning family and social environment. However, participants from the Teacher's Faculty place more importance on the factor of failure linked to teachers and parents' educational support than the pre-service Mathematics teachers ($p < .001$) and pre-service Serbian teachers ($p = .017$) do. They place it on a par with the student's personal attributes, while they share the opinion with Mathematics and Serbian pre-service teachers that the least important factor is family and social environment.

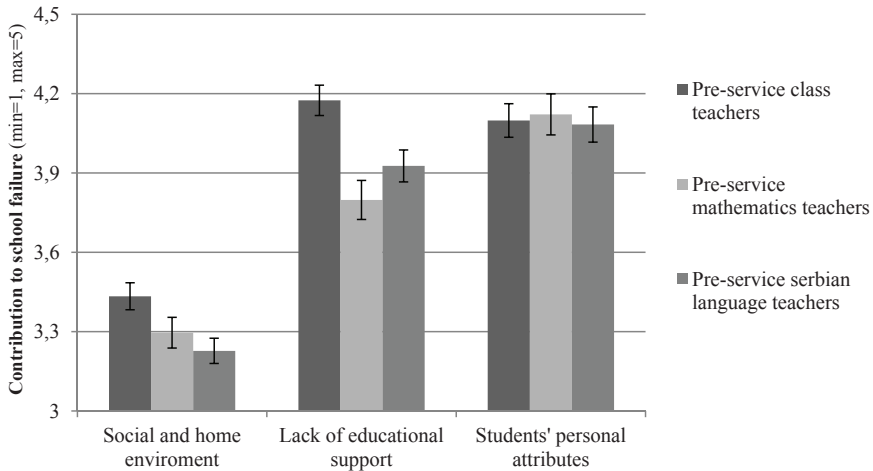


Figure 1. Pre-service teachers estimates of the importance of different factors contributing to school failure.

Table 4

Inter-correlations between self-perceived and achieved academic success during previous education and ratings of factors contributing to school failure on a sample of pre-service class teachers

	Social and home environment	Lack of educational support	Students' personal attributes	Objective academic success
Self-perceived academic success	.06	.25**	.30***	.54***
Objective academic success	-.09	.14	.19*	

Note. $N = 147$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Prior Experiences and Present Perceptions of Factors Contributing to School Failure

Significant correlations between self-perceived and achieved academic success and perceptions of different causes of school failure were found but only within the sample of pre-service class teachers (Table 4). Self-perceived and achieved academic success correlate with the scores on Students personal attributes and Educational support. However, there is a stronger correlation between self-perceived success and the estimates on the above-mentioned factors than between achieved academic success and scores on these factors. Pre-service teachers who thought of themselves as successful during their education attach more importance to Students personal attributes than those teachers who perceived themselves as less successful during their previous education. These regularities cannot be observed in the samples of subject teachers due to

rank restriction. Most pre-service subject teachers achieved excellent academic success and their perceived success is similar (Objective academic success $M_{MATH} = 4.92, SD = 0.40; M_{SL} = 4.81, SD = 0.23$; Self-perceived academic success $M_{MATH} = 4.66, SD = 0.71 M_{SL} = 4.70, SD = 0.58$). In contrast, there is somewhat greater variability in perceived and objective success among pre-service class teachers (Objective academic success $M = 4.69, SD = 0.32$; Self-perceived academic success $M = 4.36, SD = 0.72$).

In order to determine the relative significance of pre-service class teachers' self-perceived and achieved academic success in predicting their perceptions of factors contributing to school failure, two separate hierarchical multiple regressions were carried out for the following factors: Educational support and Student's personal attributes. At the first step of both analyses, the inclusion of objective academic success was examined, while in the second one we investigated the predictive power of self-perceived academic success.

The first analysis examined the contribution of objective and self-perceived success in predicting the perceptions of the factor concerning lack of educational support (Table 5). After the first step, the model was not significant ($F(1, 149) = 3.15, p = .078$), i.e., objective school success was not found to be a significant predictor of attaching importance to the Educational support factor. However, when self-perceived academic success was included, the model achieved statistical significance ($F(2, 148) = 5.31, p = .006$). The only significant predictor was self-perceived academic success ($\beta = .253, p = .008$) explaining almost 7% of variance in evaluation of educational support as the factor for school failure.

Table 5
Multiple regression analysis predicting estimates of lack of educational support as a contributor to school failure on a sample of pre-service class teachers

Step	Predictor	R^2	R^2 change	F change	df	β
1	Objective academic success	.02	.02	3.15	1, 149	.14
2	Self-perceived academic success	.07	.05	7.34*	1, 148	.25

Note. * $p < .01$; R^2 = variance accounted for by predictor variables in the regression equation; R^2 change = variance accounted for by predictor variable at each step of the regression equation; F change = F ratio testing the significance of R^2 change; β = standardized regression coefficient.

The second analysis examined objective and self-perceived success in predicting the perception of the factor concerning students' personal attributes (Table 6). In this case, the model was significant at the first step ($F(1, 149) = 5.76, p = .018$), i.e., objective academic success was found to be a significant predictor of attaching importance to the factor of student's personal attributes ($\beta = .193, p = .018$). However, at the second step ($F(2, 148) = 7.54, p = .001$), when self-perceived academic success was included in the analysis, the significance of objective academic success declined ($\beta = .047, p = .610$), and self-perceived academic success turned out to be the only significant predictor ($\beta = .277, p = .003$). Self-perceived academic success can explain 9% of variance in the evaluation of student's personal attributes for the occurrence of school failure.

Table 6
Multiple regression analysis predicting estimates of students' personal attributes as a contributor to school failure among a sample of pre-service class teachers

Step	Predictor	R^2	R^2 change	F change	df	β
1	Objective academic success	.04	.04	5.76	1, 149	.19
2	Perceived academic success	.09	.05	9.01*	1, 148	.28

Note. * $p < .01$; R^2 = variance accounted for by predictor variables in the regression equation; R^2 change = variance accounted for by predictor variable at each step of the regression equation; F change = F ratio testing the significance of R^2 change; β = standardized regression coefficient.

Discussion

The aim of this research was to examine pre-service teachers' perceptions about factors that contribute to the occurrence of school failure and their relationship to prior personal experience of school success. The first stage involved a qualitative examination of what pre-service teachers listed as important factors linked to the occurrence of school failure. The findings of our qualitative analysis suggest that pre-service teachers attribute a number of different causal factors to school failure. The factors found to be most frequent were students' lack of interest and lack of motivation. Following this were factors such as teachers being unprepared regarding teaching methodologies, students' insufficient commitment, and laziness as well as parents' lack of commitment towards helping their children at home. These findings are, to a certain extent, consistent with other studies related to teachers' perceptions of factors linked to school failure (Georgiou et al., 2002; Petersen, 2010). For example, in a survey conducted among teachers from 31 elementary schools in Serbia, it was concluded that teachers perceived students' lack of interest as one of the key causes of grade repetition. In addition, the majority of teachers (70, 6%) thought that they played a small or no part at all in the occurrence of students' grade repetition. These teachers do not attribute responsibility for failure solely to students but to their parents, peers and life circumstances (Malinić, 2011). Although it cannot be disputed that lack of student motivation can be caused by factors unrelated to the school, the causal factors for school low-achievement that the teachers assert is linked exclusively to students' lack of motivation is unjustified. As Seeley pointed out, when "underachievement is explained simply as 'lack of motivation', the subtle message is to blame the student" (Seeley, 2004, p. 4).

What is specific to our research is the finding that pre-service teachers emphasize the importance of being well prepared for working with low-achievers, thus indicating pre-service teachers' awareness of the significance of methodological knowledge in the teaching process. This finding supports a number of rare studies that also indicated pre-service teachers' concern regarding preparedness for working with low-achievers (Evans & Tribble, 1986; Stuart & Thurlow, 2000; Vaughn, Bos, & Schumm, 1997). The qualitative phase of the study led us to conclude that pre-service teachers are aware of different causes

that may lead to the occurrence of school failure among students. The subsequent quantitative phase enabled us to determine the relative significance that different groups of pre-service teachers attach to different causes of school failure.

In the quantitative phase of the study, The Scale of Factors Contributing to School Failure (FCSF) linked to the 12 most frequent causes of school failure was constructed and tested on a wider sample of pre-service teachers from different educational backgrounds. Following a quantitative analysis of the latent structure of pre-service teacher's perceptions, it was determined that the causes pre-service teachers perceive as significant for the occurrence of school failure can be grouped into three factors: one factor concerned the social and home environment, another related to parents' and teachers' educational support, and another concerned students' personal attributes. These findings suggest that pre-service teachers share awareness of the general groups of causes of school failure that were also recognized by different theoretical perspectives. In addition to the causes emphasized by the individual perspective, pre-service teachers are also aware of different contextual factors, which are key to the systemic perspective of school failure (Faubert, 2012). Interestingly, home/familial causes do not exist as separate factor in pre-service teachers' perceptions, despite being recognized as independent factors by mentioned theoretical perspectives (Malinić, 2009; West & Pennell, 2003). Specifically, these causes were seen as part of educational support or broader social environment. Further analyses showed that all three groups of causes, represented by the three factors extracted, were perceived as important in explaining the occurrence of school failure. Furthermore, pre-service teachers of different profiles agree that students' personal attributes are the most important cause for the occurrence of school failure. These findings are consistent with those identified at the qualitative stage in this research.

The significant differences among pre-service teachers of different profiles are observed only when it comes to the importance of the factor concerning educational support given by teachers and parents. While pre-service subject teachers see this factor as more important than the social and home environment factor and less important than the students' personal attributes factor, pre-service class teachers perceive educational support as of equal importance to the factor related to a student's personal attributes. These findings can be interpreted through the prism of two important distinctions between pre-service class and subject teachers – notable differences in their pre-service education and differences between students they are preparing to work with in the future. During their pre-service education period, pre-service class teachers acquire a significantly better understanding of the students' learning process, as well as the importance of teacher support in this process. Their studies include more course material in pedagogy and psychology than the educational program for pre-service subject teachers does, thus making them more sensitive to their own role in the teaching process (Ashton, 1999; Lamote & Engels, 2010; Terttu Tryggvason, 2009). However, pre-service class teachers are being trained to teach lower elementary school students, while pre-service subject teachers will be teaching mostly upper elementary school students, so the differences

in their perceptions of the importance of educational support factor might be stemming from a different understanding of the educational needs of younger and older students. The subject teachers may be expecting their students to be more autonomous and independent in learning, and vice versa. Both plausible interpretations converge to the same recommendation. One could discuss the need for intervention at the pre-service stage of subject teacher education. Such an intervention might involve providing additional courses focusing on topics such as factors of achievement, growth vs. fixed mindset, attributions, and self-fulfilling prophecies etc. or simply paying more attention to the topic of student low-achievement in the existing courses.

Previous studies indicate that teachers' pedagogical conceptions and sets of beliefs are based on memories of their own educational experiences and how their teachers were. Such conceptions and beliefs may or may not be changed during the pre-service period of their education (Alkhrisha, 1994). This study demonstrated that qualitative differences during the pre-service training period could generate differences in the pre-service teachers' structure of beliefs about the causes of school failure. Nevertheless, we examined whether variations in attributing significance to different sets of causes can be explained by factors concerning the prior personal experience of school failure before entering the pre-service period of teacher training, as evidenced in Beghetto (2006, 2007). It has been determined that the way pre-service teachers perceived themselves in relation to school success and school failure is a better predictor of their attitudes towards different factors for school failure than their objective academic achievement. Those participants who saw themselves as educationally successful tended to attach more importance to students' personal attributes as a causal factor for the occurrence of school failure, while those who perceived themselves as less successful found this factor to be of less importance. These results can be interpreted in line with attribution theory which seeks to explain the causes to which people attribute successes and failures (Weiner, 1980, 1985). Following this theory, the individual's tendency to ascribe personal success to his/her abilities and commitment and failures to insufficient commitment or bad learning strategies is considered to be a functional attribution style (Boekaerts, Pintrich, & Zeidner, 2000). A similar pattern is observed when predicting the perception of educational support given to students by parents and teachers. In this case, too, students who perceived themselves to be successful students in the past to a greater extent emphasize the importance of this factor than formerly unsuccessful students do. Searching for a plausible explanation, we can assume that the amount and quality of educational support our participants received in the past have partially influenced their academic self-perceptions, as evidenced in numerous studies (Burnett, 2003; Marsh & Seaton, 2013). Additionally, their personal theories on causes of school failure and the role of educational support, in particular, could have also been influenced by the quality of their experience with educational support. These findings suggest that pre-service teachers should be familiarized with biases occurring in the process of attributing success and failure and how these biases could influence their future interactions with students.

Limitations of the Study and Directions for the Future Research

The first limitation of our study stems from the fact that participants were not offered a single definition of school failure when asked about the causes of this phenomenon, which consequently could have reflected on their choice of causes. Therefore, one of the directions for the future studies could be to examine perceptions of causes for more specific operationalizations of the construct (low-achievement, grade repetition, under-achievement, school dropout, etc.). Another conceptual limitation of our study design refers to the somewhat narrow operationalization of previous schooling experience. Since previous studies of this construct were scarce and mostly qualitative, we opted for the most obvious quantitative operationalizations related to school success (average school grades and Likert scale self-perception of school success). However, prospective studies of this topic could benefit from developing more elaborate forms of operationalization.

Even though the list of causes of school failure was directly derived from the qualitative material and fits our participants' perceptions quite well (as evidenced by the Kappa coefficients), still it is important to note that this categorization has certain limitations and certainly does not cover the full range of potentially important factors of school failure. The important shortcoming of this categorization is that it was practically impossible to separate the dispositional and motivational factors in the perceptions of our participants. It also prevents us from conducting certain analyses and drawing conclusions that are potentially important for the teaching practice.

Finally, when considering the recommendations for the teaching practice which arose from this study, one should keep in mind that teachers' beliefs about school failure may change by entering into practice.

Conclusion

Since teachers' beliefs largely shape teaching practice and affect decisions they make in the classroom (Pajares, 1992), teachers' pre-service training should be aimed at changing misconceptions of school failure such as the over-emphasis on students' personal dispositions or denial of teacher responsibility. However, it should also create a set of beliefs that will prepare teachers to respond appropriately when dealing with school failure in the future. The first step in such a procedure would certainly be to gain insight into the nature and content of teachers' current school failure conceptions.

The results of our study show that pre-service teachers in Serbia are aware of the wide range of causes of school failure. The lack of ability and motivation in students is perceived as the most important cause of school failure, followed by the lack of educational support. It seems that pre-service teachers fail to recognize the importance of socio-economic factors in predicting educational attainment differences. Compared to the pre-service subject teachers, pre-service class teachers are more willing to recognize the teachers' responsibility for the

occurrence of school failure. Additionally, their personal experiences with school failure affect the way in which they attribute the failure to students.

Therefore, we may suggest that teachers' pre-service education in Serbia should undergo certain changes in order to alter misconceptions regarding causes of school failure and to better prepare pre-service teachers for dealing with students at risk of school failure in their future classrooms. In order to shift the focus from student dispositional factors, we believe that it is of great importance to get pre-service teachers acquainted with the current finding of educational effectiveness research pointing to the key factors of student achievement (the role of contextual factors and teaching factors in particular). Strengthening of the theoretical knowledge should be accompanied by the improvement of the pre-service teachers' practical skills in teaching students from disadvantaged socio-economic backgrounds or with special educational needs.

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Percepcija faktora koji doprinose školskom neuspehu od strane budućih nastavnika i njihova povezanost sa prethodnim ličnim iskustvom uspeha u školi

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Faktori koje budući nastavnici razredne i predmetne nastave opažaju kao značajne za pojavu školskog neuspeha su proučavani pomoću miksmetodske strategije. U kvalitativnoj fazi istraživanja ($N = 74$) se pokazalo da budući nastavnici razredne i predmetne nastave prepoznaju brojne uzroke školskog neuspeha (16 različitih kategorija). Relativni značaj ovih uzroka je ispitan u narednoj, kvantitativnoj fazi. Konstruisana je skala uzroka školskog neuspeha i zadata uzorku od 408 budućih nastavnika razredne i predmetne nastave, a zatim su eksplorativnom faktorskom analizom identifikovana tri latentna faktora koji objašnjavaju 43 % varijanse. Nedostatak sposobnosti i motivacije (1. faktor) i nedostatak obrazovne podrške (2. faktor) su opaženi kao faktori koji najviše doprinose školskom neuspehu, dok se umereni značaj pridaje razlozima koji su povezani sa porodičnim i socijalnim kontekstom (3. faktor). U poređenju sa budućim nastavnicima predmetne nastave, budući nastavnici razredne nastave pokazuju veću spremnost da prepoznaju odgovornost nastavnika za školski neuspeh. Percepcija značaja različitih faktora od strane budućih nastavnika je povezana sa njihovim ranijim iskustvima školskog uspeha.

Ključne reči: budući nastavnici, školski neuspeh, nastavnička uverenja, ranije iskustvo u školovanju

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