

# The Influence of Physical Exercise on Fifth-Grade Primary School Students' Academic Performance in Physical Education Classes

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## Abstract

*Keeping in mind the significant difference in physical exercise in PE lessons between the fifth and younger primary school grades, the goal of this paper was to identify the influence of physical exercise on students' academic performance at the end of the first term and the school year. Furthermore, the paper sought to examine if this influence changes depending on students' gender and the location of the school they attend. The research was conducted at the end of the 2018/2019 school year on a sample of 114 fifth-graders from primary schools in the northern Kosovo region. A data recording sheet and a Scaler (SS - PEC) ( $\alpha = .832$ ) were used to collect data on students' academic performance. The obtained data were analysed by descriptive statistics, Wilcoxon test, the two-way analysis of variance, and linear correlation. The results of the research showed that students' physical exercise causes significant improvement of student academic performance in PE class at the end of the school year, compared to the end of the first school term, both for male and female students. The influence of physical exercise on the academic performance of students in physical education classes at the end of the school term and at the end of the school year is different, depending on the location of the primary school students attend. The two-way analysis of variance found that students from families that support physical exercise achieve better results in physical education classes,*

*which is more pronounced in male students than in female students, and in students who come from urban areas, compared to those from rural areas. Linear correlation has shown that student motivation for physical exercise significantly affects student academic success in physical education classes.*

**Key words:** curriculum; syllabus; motivation; individual sports; team sports.

## Introduction

When defining the term and/or the concept of physical education, we start from the definition of its related terms, i.e. physical activity and physical exercise, and, in a broader context, sports, recreation, and others. In approaching the research problem, we set out from the definitions (Caldas & Reilly, 2019; Hyndman & Mahony, 2018) that determine physical exercise as a process of encouraging, developing, and permanently adopting optimal skills, habits and abilities through exercise and repetition in order to influence cognitive, affective and psychomotor aspects of student learning and trigger certain changes in them. They imply motivating students to engage in physical exercise, which further entails better academic achievement in physical education classes (Acar & Eler, 2019). As the most systematic form of education (Wolffensperger & Patkin, 2013), the teaching process implies joint activity of teachers and students with the goal of better student academic achievement in all aspects of education and learning (Milenovic, 2013). In physical education classes, students who engage in more physical exercise experience changes that develop in them motivation and love for physical exercise, which further contributes to their better academic performance in physical education classes and determination to be more active in some individual or team sports.

The analysis of physical education curricula in the younger grades of primary school shows that they differ only in the levels of complexity of the learning topics. However, there is a significant difference in the complexity of learning topics, compared to the curriculum in the 5<sup>th</sup> grade of primary school. The curriculum for the 4<sup>th</sup> grade of primary school includes five main topics: 1) Athletics, 2) Physical exercise on the training equipment and ground, 3) Rhythmic gymnastics and folk dance, 4) Basics of sports games, and 5) Health education (Physical Education Curriculum for the 4<sup>th</sup> Grade of Primary School, 2019). In the 5<sup>th</sup> grade of primary school, there are three thematic units: 1) Physical abilities, 2) Motor skills, sports and sports disciplines, and 3) Physical and health education (Janic et al., 2018). Learning contents are much more diverse than in the 4<sup>th</sup> grade of primary school, which especially refers to exercising on gymnastic and altitude training equipment, gymnastics all-around, individual sports (primarily swimming), and team sports. When the learning topics are interesting, students are more motivated to exercise, they start to like a certain sport and actively play it outside classes, within sports sections in school or out-of-school sports clubs. Student participation in sport and physical activity, both inside and outside the classroom, allows for the knowledge, skills, habits and abilities acquired in sports

sections and sports clubs to be used in the classroom as well (Lassiter & Campbell, 2019). This is especially true for students who show poorer results in other school subjects (Dai, 2019). Physical exercise outside the classroom was also important in the period when schools "... did not play a major role in children's physical activity" (Adkins et al., 2017, p.28). This approach to student physical education contributes to connecting several important elements of student academic performance in physical education lessons – "... meeting the psychological needs of students, motivational processes in physical education of students, and conscious intentions and desires for physical exercise in primary school students" (Chen, 2014, p.495). Additional physical exercise directly contributes to the development of love for physical activities and sports and indirectly to better academic achievement in physical education classes (McFadden & Li, 2019). Based on the presented critical analyses and discussions, this study has found that students' academic performance represents a favourable outcome of physical exercise, motivation, developed love for physical activity and sports, creativity and innovation of students. All of the aforementioned certainly reflects on students' academic achievement in physical education classes and better grades as parameters of school academic achievement. The research problem referred to the contribution of physical exercise of fifth-grade students to their better academic performance in physical education classes.

## **Methods**

The goal of the research was to determine the influence of physical exercise on students' academic performance in physical education classes at the end of the first term and at the end of the school year. Furthermore, the research sought to determine the effect of students' physical exercise on their academic achievement in physical education classes at the end of the first term and of the school year, depending on the location of the primary schools students attend. The research set out from a general hypothesis that physical exercise significantly contributes to student academic achievement in physical education classes, which is especially noticeable in the transition from younger grades to the fifth grade of primary school due to significant differences in the course syllabus. The fifth-grade course syllabus, in contrast to the one in younger primary school grades, has substantially different and new learning topics. There were also specific hypotheses that stated the existence of a significant difference in the influence of physical exercise of fifth-grade students on their academic achievement in physical education classes at the end of the school year, compared to the same at the end of the first term. In addition, it was presumed that physical exercise significantly affects the difference in student academic achievement in physical education classes at the end of the first term and at the end of the school year, depending on student gender and the school's location. It was further hypothesized that students' families that support physical exercise significantly and positively affect student achievement in physical

education classes, depending on gender and primary school's location. Finally, student motivation for physical exercise and their overall satisfaction with it was expected to influence their success in physical education classes.

The following research methods were used: the content analysis method, document research method, the descriptive research method, transverse study, and comparative research method.

### **Participants**

The research sample included all fifth-grade students who attended primary schools in the northern Kosovo region in the second term of 2018/19 school year, i.e. 114 students whose academic performance was analyzed at the end of the first term and at the end of 2018/19 school year. The sample structure was as follows: 1) based on gender – 63 boys (55.30 %) and 51 girls (44.70 %); 2) based on the location of the primary school students attended – 52 students from urban area (45.60 %) and 62 from rural areas (54.40 %); 3) based on whether the families supported physical exercise – 34 from supportive (19,82 %) and 80 from non-supportive families (70,18 %).

### **Procedures**

The research was conducted in the second half of 2019 on a sample of fifth-grade primary school students from the Northern Kosovo area. The data were collected with the use of a record sheet and the Scaler of student success in physical education classes (Scaler - SS - PEC). Student motivation to achieve better results in physical education classes was examined via a repeatedly used scale in numerous studies, i.e. the standardized Motivation Scale (MS) encompassing 15 items evaluated on a three-point scale of agreement (Guzina, 1986).

### **Statistical analysis**

The obtained data were analyzed in statistical software SPSS 24.0. Descriptive statistics was used to calculate the frequency (N) and percentages ( %) which refer to the sample's structure. Non-parametric Wilcoxon test was applied for the purposes of comparative analysis of students' academic performance in physical education classes at the end of the first school term and at the end of 2018/19 school year. We compared the variances of two dependent variables in order to determine the influence of students' physical exercise on their academic performance in PE classes at the end of the first term and at the end of 2018/19 school year, depending on their gender (male and female) and the school's location (urban and rural). The two-way analysis of variance found the interdependent influence between the level of support from students' families, student gender, and the school's location and student achievement in PE classes at the end of the school year. The influence of students' motivation to engage in physical exercise on their success in physical education classes at the end of the school year was examined by linear correlation.

## Results

The calculated Z-value showed statistical significance at the level of  $p < .001$  (Table 1). Wilcoxon test chose the b-option, which shows that physical exercise of fifth-grade students contributed positively to their academic success in physical education classes at the end of the school year, compared to the first school term.

Table 1

*The influence of students' physical exercise on their academic performance in physical education classes at the end of the first term and at the end of the school year (Wilcoxon test)*

Academic performance at the end of the first school term – second school term	
Z	-6.184 <sup>b</sup>
p	.000

Approximately the same arithmetic means were calculated for male and female students for two dependent variables, concerning their academic performance at the end of the first term and at the end of the school year. Although it was not possible to determine statistically significant differences regarding gender in the influence of students' physical exercise on their academic performance at the end of the first term and the school year, a slightly higher arithmetic mean was calculated for male students, both at the end of the first term and the school year (Table 2).

Table 2

*Arithmetic means and standard deviations by gender for independent variables regarding student academic performance in physical education classes at the end of the first term and at the end of the school year (Descriptive statistics)*

	Gender	Mean	Std. Deviation	N
Academic performance at the end of the first term	Male	4.2381	.81744	63
	Female	3.3333	1.32162	51
	Total	3.8333	1.15916	114
Academic performance at the end of the second term	Male	4.4762	.73741	63
	Female	4.1176	1.03242	51
	Total	4.3158	.89557	114

The calculated F-index is significant in testing the student gender variable regarding student academic achievement both at the end of the first term and the school year ( $p < .001$  and  $p < .05$ , respectively) (Table 3). This indicates that student academic performance in physical education classes at the end of the first term and the school year is equal and homogeneous in all students, regardless of their gender.

Table 3

*The influence of physical exercise on students' academic performance in physical education classes at the end of the first term and at the end of the school year, depending on student gender (Tests of effects between subjects)*

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	At the end of the first term	23.71 <sup>a</sup>	1	23.071	20.068	.000
	At the end of the second term	3.623 <sup>b</sup>	1	3.623	4.664	.033
Intercept	At the end of the first term	1615.703	1	1615.703	1405.375	.000
	At the end of the second term	2081.518	1	2081.518	2679.396	.000
Gender	At the end of the first term	23.071	1	23.071	20.068	.000
	At the end of the second term	3.623	1	3.623	4.664	.033
Error	At the end of the first term	128.762	112	1.150		
	At the end of the second term	87.008	112	.777		
Total	At the end of the first term	1827.000	114			
	At the end of the second term	2214.000	114			
Corrected Total	At the end of the first term	151.833	113			
	At the end of the second term	90.632	113			

The data presented in Table 4 show approximately the same calculated arithmetic means for students from urban and rural primary schools. Although it is not possible, based on the above data, to determine statistically significant differences in the contribution of students' physical exercise to their academic achievement at the end of the first term and the school year depending on the school's location, a slight difference was determined in the arithmetic means. They are somewhat higher for students from rural primary schools, both at the end of the first term and at the end of the school year.

Table 4

*Arithmetic means and standard deviations for student academic achievement in physical education classes at the end of the first term and at the end of the school year, depending of the school's location (Descriptive statistics)*

Academic performance by school terms	School area	Mean	Std. Deviation	N
Academic performance at the end of the first term	Urban	3.6923	1.19703	52
	Rural	3.9516	1.12246	62
	Total	3.8333	1.15916	114
Academic performance at the end of the second term	Urban	4.1346	.95031	52
	Rural	4.4677	.82418	62
	Total	4.3158	.89557	114

As is visible from the presented data in Table 5, the F-index is not significant when testing the variable of the primary school's location in relation to student academic achievement in physical education classes at the end of the first term. However, it is significant at the level of  $p < .05$  when testing the variable school's location with regard to student academic achievement at the end of the school year (Table 5). This shows that student academic achievement in physical education classes at the end of the first term and at the end of the school year is not equal or homogenous for all students, when considering the school's location.

Table 5

*The influence of physical exercise on students' academic performance in physical education classes at the end of the first term and at the end of the school year, depending on the location of the primary school students attend (Tests of between-subjects effects)*

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	At the end of the first term	23.71 <sup>a</sup>	1	23.071	20.068	.000
	At the end of the second term	3.623 <sup>b</sup>	1	3.623	4.664	.033
Intercept	At the end of the first term	1615.703	1	1615.703	1405.375	.000
	At the end of the second term	2081.518	1	2081.518	2679.396	.000
School area	At the end of the first term	23.071	1	23.071	20.068	.000
	At the end of the second term	3.623	1	3.623	4.664	.033
Error	At the end of the first term	128.762	112	1.150		
	At the end of the second term	87.008	112	.777		
Total	At the end of the first term	1827.000	114			
	At the end of the second term	2214.000	114			
Corrected Total	At the end of the first term	151.833	113			
	At the end of the second term	90.632	113			

A significant difference was found between the students' gender -  $F = 21.727$  at the level of .001 ( $p = .000$ ), and among differing levels of support from student families -  $F = 7.002$  at the level of .01 ( $p = .009$ ). The results also show that the interaction between students' gender and families that support physical exercise to a differing extent (support - insufficient support) significantly affects student achievement in physical education class:  $F = 23.921$  at the level of .001, ( $p = .000$ ) (Table 6).

Table 6

The interaction between families that support physical exercise to different degrees and student gender, and its effect on their achievement in physical education classes at the end of the school year (Tests of between-subjects-effects)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	8.000 <sup>a</sup>	3	2.667	3.550	.017
Intercept	1980.589	1	1980.589	2636.585	.000
VAR00001	4.856	1	4.856	6.464	.012
VAR00002	4.369	1	4.369	5.816	.018
VAR00001*VAR00002	.039	1	.039	.051	.821
Error	82.631	110	.751		
Total	2214.000	114			
Corrected Total	90.632	113			

The analysis of Diagram 1 shows that male students who come from families that support physical exercise achieve significantly better results than female students who come from supportive families. When it comes to families that do not support physical exercise sufficiently, their influence on student achievement in physical education classes is insignificant from the aspect of students' gender.

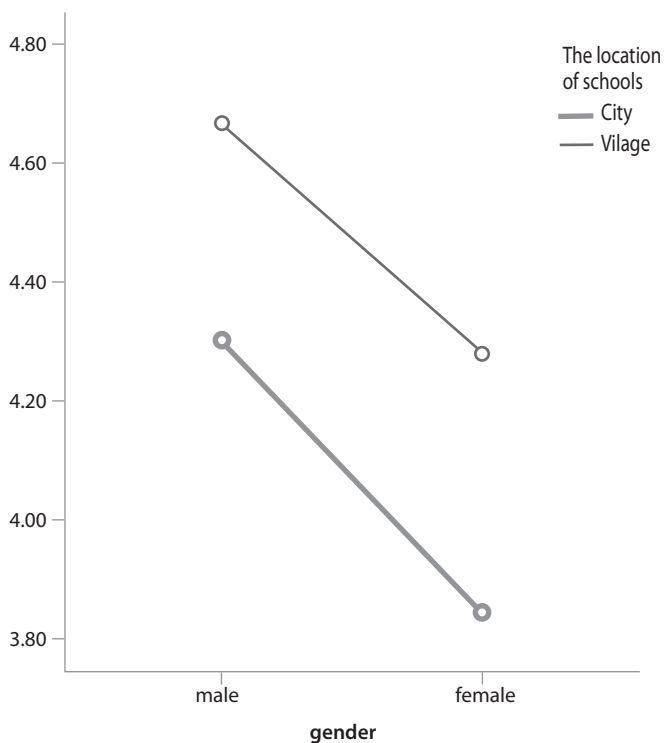


Figure 1. The interaction between families that support physical exercise to a differing degree and student gender, and its effect on student achievement in physical education classes at the end of the school year.



No significant difference was found between different degrees of support from student families -  $F = .042$  ( $p = .838$ ), or the location of primary school that students attend -  $F = .525$  ( $p = .470$ ). In contrast to individual influences, the research results showed that the interaction between students' families that support physical exercise differently (support - insufficiently support) and primary school's location (city - village) significantly affects student achievement in physical education classes:  $F = 8.3019$  at the level of  $.005$ , ( $p = .005$ ) (Table 7).

Table 7

The interaction between families that support physical exercise to a different extent and the location of primary schools students attend, and its effect on their achievement in physical education classes at the end of the school year (Tests of between-subjects-effects)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	19.738 <sup>a</sup>	3	6.579	10.209	.000
Intercept	1335.386	1	1335.386	2072.019	.000
VAR00001	14.003	1	14.003	21.727	.000
VAR00002	4.513	1	4.513	7.002	.009
VAR00001 * VAR00002	15.417	1	15.417	23.921	.000
Error	70.893	110	.644		
Total	2214.000	114			
Corrected Total	90.632	113			

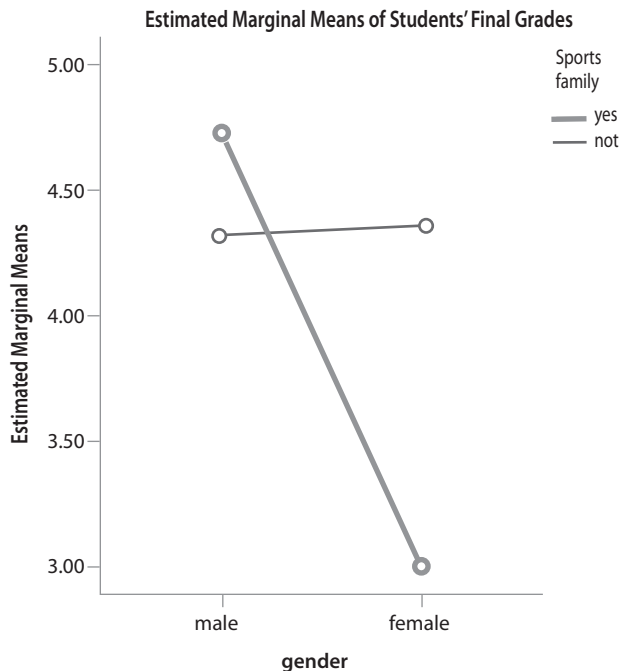


Figure 2. The interaction between the level of support from students' families and the location of primary schools students attend and their achievement in physical education classes at the end of the school year

Contrasting results were found regarding the influence of supportive and non-supportive families and the location of primary schools students attend on their achievement in physical education classes. In urban schools, students who come from families that support physical education do better than students from non-supportive families. When it comes to rural environment, the opposite results have been found. Diagram 2 shows that students who come from non-supportive families achieve better in PE class than students who come from families that support physical education.

Positive correlation was found ( $r = .270$ ;  $p = .004$ ), which means that with the increase of students' motivation to be successful in physical education classes, their performance in physical education classes increases. According to Cohen's criteria, this impact is small (Table 8).

Table 8  
*Achievement motivation and student achievement in physical education classes at the end of the school year (Correlation)*

		Motivation	Final achievement
Motivation	Pearson Correlation	1	.270**
	Sig. (2-tailed)		.004
	N	114	114
Final achievement	Pearson Correlation	.270**	1
	Sig. (2-tailed)	.004	
	N	114	114

## Discussion

Previous theoretical and empirical studies have shown that greater levels of physical exercise is important for all people, regardless of gender and age. This positive effect is already visible even in very young children, since dynamic and static exercises significantly affect their performance (Boyaci et al., 2018). Physical exercise also ensures more efficient overcoming of numerous developmental disabilities and obstacles in children's learning and participation in physical education classes, and classes in general. Different physical activities contribute to strengthening children's will and concentration, which is especially important during the pedagogical treatment of children with autism symptoms and hyperactive children (Tarr et al., 2020). There are also examples where certain sports games, such as horse riding, are effective from the pedagogy standpoint in working with children with severe health problems and developmental disabilities. Physical exercise further contributes to the development of motivation, will and cognitive abilities of students (Butler et al., 2019). The importance of physical exercise was confirmed by the findings and critical analyzes of this study.

The transition between 11 and 12 years of age is mostly mentioned as the period during which children's physical activity increases significantly and when they start to play sports more actively. In addition to physical development, the increase in physical strength and speed occurs in all children at this age, especially boys (Miftakhov et al., 2019). Physical activity and physical exercise of children at this age depends on

a number of factors. It is primarily influenced by the teaching style - authoritarian, authoritative, democratic and permissive (Milenovic, 2015; Milenovic, 2011). The very appearance of a teacher is also important. A recent study states that 11-year-old students in different classes of the same school had different approaches to exercise. Students whose teacher was athletic and played sports were more interested in exercising and playing sports, compared to students in another grade, whose teacher was stout and did not play any sports (McKown et al., 2019). Another significant factor that ensures a higher level of student physical exercise are the features and design of the gym or sports fields where physical exercise takes place. As a motivating factor for students to engage in more physical exercise, the interior design and appearance of the classroom is especially important in smaller, primarily rural schools, where there is no gym or sports fields, so the classroom, school yard or other area is used as a gym.

Firstly, the results of this study have shown that more intense physical exercise of fifth-grade students contributes to their better academic achievement in physical education classes at the end of the first term, and even more at the end of the school year. This student age was not chosen by chance. In critical analyses presented in the theoretical part of this study and in the discussion section, this student age is regarded as a significant period for several reasons. The first reason refers to the physical education curriculum, which is significantly different in the fifth grade than in younger grades of primary school. At this age, students engage in physical exercise that is more complex, exercise on gymnastic and altitude training equipment, are acquainted with the basic elements in more detail, as well as with the tactics and techniques of various individual and team sports. Many students, independently or at the suggestion of parents or teachers, begin to engage more actively in some individual or team sports within sports sections in school or out-of-school sports clubs. This was mostly effected by greater student physical activity, i.e., their physical exercise above all. (Anastasopoulou et al., 2020; Hadzovic et al., 2020).

Empirical analyses in this study have shown that, from the aspect of student gender, physical exercise significantly contributes to better academic performance of fifth-grade students, both at the end of school term and at the end of the school year. It has already been emphasized that physical activity of all students of this age increases and many of them start to do some sport more actively. However, this is still more characteristic of boys than girls. The stated was proven in this study by a slightly higher arithmetic mean calculated for boys, both in terms of their academic achievement in physical education classes at the end of term and the school year. One study whose aim "...was to examine whether perceived autonomy during physical education (PE) classes, the perceived motivation, and students' intentions for physical activity outside of school differ based on their educational level and gender" (Karaoglanidis et al., 2020, p.25) showed that, compared to boys, girls have less desire for physical exercise as they transition to higher levels of education. Greater interest of boys in sports was also indicated by the results of research within a study that focused on sports training for boys and girls (Sener & Durmaz, 2019).

Somewhat less harmonized research results of this study were found by examining the contribution of physical exercise to student academic achievement at the end of the first term and at the end of the school year, depending on the primary school's location. Significant difference was found only in the results related to the end of the school year, and not those related to the end of the first term. This is certainly understandable, because a longer period of physical exercise guarantees significantly better results. Some of the studies have shown that only more frequent physical exercise and training can effect better academic results (Rasmussen et al., 2019). They also showed that better results could be achieved via more efficient training, rather than being influenced by the above-average abilities of individual students who engage in a particular sport (Kiewra & Witte, 2018).

A slightly higher arithmetic mean was calculated for students whose primary school is located in a rural area, in relation to students whose primary school is located in the city area, both at the end of the first term and at the end of the school year. Regardless of the fact that it was more realistic to expect primary school students from urban areas, with more opportunities for physical exercise and sports, to show greater interest in physical exercise, the results showed the opposite: students from rural areas showed greater interest in physical exercise and sports. On the one hand, such results are justified in the region where the research was conducted. The only urban primary schools are those located in the northern part of Kosovska Mitrovica, which is no longer such an urban environment after year 1999. Rural schools are those located in Zvečan, Zubin Potok, Socanica, Leposavic and Lesko, which are not too far behind the northern part of Kosovska Mitrovica in terms of urbanity. On the other hand, there are studies which determined students from rural primary schools showed greater interest in physical exercise and sports precisely due to the lack of opportunities, compared to students from urban primary schools (Gabbrakhmanova & Kostarev, 2016). The aforementioned fact Zamijeniti s: is in line with the research findings of this study.

The results of this research have furthermore shown that different level of family support for physical exercise significantly affects student performance in physical education classes. The significance of family influence on students' performance in physical education classes is supported by results of numerous studies (Zach, 2020; Varea, 2018). In one research of inclusive theory and practice in physical education teaching, seven factors were determined that significantly contribute to teachers' efficacy and student achievement in physical education class.

Another research on inclusive theory and practice in physical education classes determined seven influencing factors on student performance in physical education classes, the most important being family cooperation (Toloi et al, 2016: 25). However, family is only one of the various settings influencing students' performance in physical education classes. The same should apply to the region itself. The region in which this research was conducted has been facing numerous problems in recent decades: civil conflicts, collapse of economy, the arrival of an international mission, lawlessness

in northern Kosovo, and the rise of crime. These are only some of the many social phenomena that have been affecting all spheres of social life and work. Sport is not sufficiently developed in this region, and it is at a much lower level than 30 years ago. All this significantly affected education and physical education classes, effecting the coexistence of parallel systems that do not recognize each other. Such a division exists in both education and sports (Duncan, 2016; Tahirsylaj, 2013). Hence, it can be stated that this environment does not support physical exercise, which also applies to the families students come from. This is also supported by the fact that only 19.82 % of the students' families support physical exercise. In environments where physical exercise is supported, due to parental and other adult role models, children are more engaged in physical exercise. This in turn creates habits and desire to perform in this field and effects better student performance in physical education classes. Results of numerous studies support these findings and are in line with the results of this research as well (Joy & Larsson, 2019; Yun & Beamer, 2018).

The research hypothesis that presumed greater students' motivation for physical exercise would affect better results in physical education classes was confirmed. Nevertheless, as an individual psychological category, student motivation is not enough for better performance. An undivided student assessment scale was used in this study. In contrast to this research, a study conducted at the University of YaGar Dog, Faculty of Sports Sciences, found no significant difference in student performance in PE classes depending on motivation. However, a sub-scale examining non-motivational factors has found that motivation nevertheless affects performance in physical education classes, but in certain segments it also depends on numerous other factors (Akyol & Imamoglu, 2019: 440). Based on this, we conclude once more that, for more significant success in this field, an environmental influence is required in the form of sufficient support for a certain activity. These findings have been supported by the results of numerous studies published in leading international scientific journals (Aygun & Demir, 2020; Can & Deniz, 2019; Gomes et al., 2019). In areas where there are no organized sports competitions, and the North of Kosovo is one of many such areas in today's Kosovo, it is certain that something like that cannot be achieved. The fact that the school's location does not significantly affect physical exercise in the North of Kosovo is also shown by diametrically opposed research results. They showed that students in urban areas, coming from environments that support physical exercise, achieve better results than students who come from families characterized by lack of support for the same. On the other hand, better results in physical education classes in rural schools are achieved by students from non-supportive families than by students from supportive ones. This result should certainly be taken with a grain of salt, given that the only urban area in northern Kosovo is the insufficiently urbanized northern part of Kosovska Mitrovica, while other rural areas are largely similar to conditions in Kosovska Mitrovica, so this result is understandable.

## **Conclusion**

The results of this research have confirmed the findings of previous studies and state that students' physical exercise significantly contributes to their better academic achievement in physical education classes. Physical education curricula in primary schools are interrelated, but from the aspect of their complexity level in each grade, they are still different. The most significant difference in the curricula is visible in the transition of students from younger to higher grades of primary school, which made this research particularly significant and interesting. Furthermore, the results revealed that students' physical exercise positively contributed to academic achievement of fifth-grade students at the end of the school year, compared to their academic performance at the end of the first term. The research results have also shown that students' performance in physical education classes depends on their families. It was found that, depending on gender, students who come from families that support physical exercise show better academic performance in physical education classes than students who come from families that do not support physical exercise, and that male students had significantly better academic achievement than female students. In regards to the primary school's location, different results have been found in the interaction of families supporting PE to differing degrees and the school's location: in urban areas, students from supportive families have better academic achievement in physical education classes, while in rural schools, students from non-supportive families have better academic achievement in physical education classes. It was also found that student motivation to engage in physical exercise significantly and positively affects their performance in physical education classes.

Moreover, the research results have also shown that student academic achievement in PE classes at the end of the first term and at the end of the school year equally depends on physical exercise, regardless of gender. However, differing effects were found depending on the school's location: a significant impact of physical exercise on academic achievement in PE classes was determined at the end of the school year, but not at the end of the first term. This could be the result of greater, longer and more effective student efforts in physical exercise at the end of the school year, compared to the end of the first semester. Based on the results of this study and critical analyses presented in this paper showing that physical education in countries with more developed education systems, during the compulsory cycle of education, is carried out in a much larger number of classes, compared to their number in Serbia, there is a need to change physical education curricula. Such a change would ensure better, longer, more innovative, more versatile and, above all, more effective student physical exercise in physical education classes. As an education field within pedagogic science, PE classes are of crucial importance. The achievement of learning goals and objectives in PE depends in great measure on the realization of intellectual, moral, work, technical, and aesthetic education of students in primary school. Starting from the objectives of physical education set in the field of pedagogy, the need arises to find new methods

and approaches in order to achieve the recreational objective of physical education. This need is also reflected in the small number of participant student families that actually support physical exercise (19.82 %). Involving as many people as possible in daily physical exercises would significantly contribute to student achievement in physical education classes. Many of them come to school without developed habits and with a need for constant physical exercise. This is confirmed by the critical analyses presented in this paper and results of many other studies showing that a supportive environment effects better results, which is certainly the case with physical education classes in primary school. This particularly applies to fifth grade of primary school as a transition period from the first to the second primary school cycle, when many students begin to actively engage in sports, both in and out of school.

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# Utjecaj tjelesnoga vježbanja na školski uspjeh učenika 5. razreda osnovnih škola iz predmeta Tjelesna i zdravstvena kultura

## Sažetak

*Cij je rada utvrditi utjecaj tjelesnoga vježbanja koje se u nastavi Tjelesnog odgoja u 5. razredu osnovne škole značajno razlikuje od nastave Tjelesnog odgoja u nižim razredima osnovne škole, na uspjeh učenika na polugodištu i kraju školske godine i da se utjecaj tjelesnoga vježbanja učenika na njihov uspjeh u nastavi Tjelesnog odgoja na polugodištu u na kraju školske godine razlikuje u odnosu na spol učenika i područja gdje se nalazi osnovna škola koju učenici pohađaju. Istraživanje je sprovedeno na kraju školske 2018./2019., na uzorku od 114 učenika 5. razreda osnovnih škola na području sjevera Kosova. Za prikupljanje podataka o uspjehu učenika, korištena je evidencijska lista. Podatci prikupljeni istraživanjem, obrađeni deskriptivnom statistikom, Vilkinsonovim testom i testiranjem jednakosti varijance za dvije zavisne varijable. Rezultati istraživanja pokazali su da tjelesno vježbanje učenika doprinosi višem uspjehu na kraju školske godine od uspjeha na polugodištu. Rezultati su pokazali da uspjeh učenika u nastavi Tjelesnoga odgoja na polugodištu i na kraju školske godine podjednako zavisi o tjelesnom vježbanju učenika muškoga i ženskoga spola. Prema mjestu gdje se nalazi osnovna škola koju učenici pohađaju, uspjeh učenika u nastavi Tjelesnoga odgoja različito zavisi od tjelesnog vježbanja učenika na polugodištu, u odnosu na njihov uspjeh na kraju školske godine.*

**Ključne riječi:** *individualni sportovi; kolektivni sportovi; motivacija; nastavni plan; nastavni program.*

## Uvod

Kad definiramo pojam tjelesne i zdravstvene kulture, polazimo od definicije srodnih pojmova: tjelesna aktivnost i tjelesno vježbanje, a u širem kontekstu i sport, rekreacija i drugi. Pristupajući problemu ove studije, polazimo od nekih definicija koncepta tjelesnih vježbi (Caldas i Reilly, 2019; Hyndman i Mahony, 2018) u kojima se navodi da je tjelesno vježbanje proces poticanja, razvoja i trajnoga usvajanja optimalnih vještina, navika i sposobnosti stečenih vježbanjem i ponavljanjem, kako

bi se utjecalo na kognitivni, afektivni i psihomotorni aspekt učenja učenika te kako bi se u njima pokrenule određene promjene. Oni podrazumijevaju motiviranje učenika za bavljenje tjelesnim vježbama, što nadalje podrazumijeva bolja školska postignuća na satima Tjelesnoga odgoja (Acar i Eler, 2019). Kao najstavniji oblik obrazovanja (Wolffensperger i Patkin, 2013), nastavni proces podrazumijeva zajedničku aktivnost nastavnika i učenika, s ciljem boljšeg školskog uspjeha učenika u svim aspektima obrazovanja i učenja (Milenović, 2013). Na satima tjelesnoga odgoja studenti koji se bave većim brojem tjelesnih vježbi doživljavaju promjene koje u njima razvijaju motivaciju i ljubav prema tjelesnom vježbanju, što također dodatno doprinosi njihovom boljšem školskom uspjehu na satima Tjelesnog odgoja i njihovoj odlučnosti da budu aktivniji u nekim individualnim ili timskim sportovima.

Analiza kurikula za predmet Tjelesno-zdravstvene kulture (TZK) u nižim razredima osnovne škole pokazuje da se oni razlikuju samo u razini složenosti tema učenja. Međutim, postoji značajna razlika u složenosti tema učenja u odnosu na Nastavni plan i program za 5. razredu osnovne škole. Nastavni plan i program za 4. razred osnovne škole uključuje pet glavnih tema: 1) Atletika, 2) Tjelesne vježbe na opremi i terenu, 3) Ritmička gimnastika i narodni ples, 4) Osnove sportskih igara i 5) Zdravstveni odgoj (Kurikulum za tjelesni odgoj za 4. razred osnovne škole, 2019).

U 5. razredu osnovne škole postoje tri tematske cjeline: 1) Tjelesne sposobnosti, 2) Motorika, sport i sportske discipline i 3) Tjelesni i zdravstveni odgoj (Janic i sur., 2018). Sadržaji učenja mnogo su raznolikiji nego u 4. razredu osnovne škole, što se posebno odnosi na vježbanje na gimnastičkim i visinskim spravama, gimnastičkom višeboju, individualnim sportovima, prvenstveno plivanju i timskim sportovima. Kada su teme za učenje zanimljive, učenici su motiviraniji da više vježbaju i da zavole određeni sport i da se njime počnu aktivno baviti izvan nastave u okviru sportskih grupa u školi i izvan škole u sportskim klubovima. Sudjelovanje učenika u sportu i tjelesnoj aktivnosti, kako unutar učionice tako i izvan nje, omogućava da se znanje, vještine, navike i sposobnosti stečene u sportskim odjelima i sportskim klubovima koriste i u učionici (Lassiter i Campbell, 2019) što je posebno vrijedi za učenike koji pokazuju slabije rezultate i u drugim školskim predmetima (Dai, 2019). Tjelesno vježbanje izvan učionice bilo je važno i u razdoblju kada škole „... nisu imale glavnu ulogu u tjelesnoj aktivnosti djece” (Adkins i sur., 2017, str. 28). Ovakav pristup tjelesnom odgoju učenika doprinosi povezivanju nekoliko važnih elemenata školskoga uspjeha učenika na satima TZK - „... zadovoljavanje psiholoških potreba učenika, motivacijski procesi u tjelesnom odgoju učenika i svjesne namjere i želje za tjelesnim vježbanjem učenika u osnovnoj školi” (Chen, 2014, str. 495). Dodatne tjelesne vježbe izravno doprinose razvoju interesa prema tjelesnim aktivnostima i sportu, a neizravno i boljšim školskim postignućima na satovima TZK (McFadden i Li, 2019). Na temelju iznesenih kritičkih analiza i rasprava, ovim se istraživanjem smatra prihvatljivim da školski uspjeh učenika predstavlja povoljan ishod tjelesnoga vježbanja, motivacije, razvijene ljubavi prema tjelesnoj aktivnosti i sportu, kreativnosti i inovativnosti učenika što se svakako odražava

na školska postignuća učenika na satima TZK i više ocjene kao parametre školskoga uspjeha. Problem istraživanja odnosi se na doprinos tjelesnoga vježbanja učenika 5. razreda njihovom boljem školskom uspjehu na satima TZK.

## Metode

Cilj je istraživanja utvrditi utjecaj tjelesnoga vježbanja na uspjeh učenika u nastavi Tjelesne i zdravstvene kulture na polugodištu i na kraju školske godine te utvrditi učinak tjelesnoga vježbanja učenika na njihova postignuća na satima TZK na kraju prvog polugodišta i na kraju školske godine, ovisno o mjestu osnovne škole koju učenici pohađaju. Istraživanje je polazilo od opće hipoteze da tjelesno vježbanje značajno doprinosi školskom uspjehu učenika na nastavi TZK, a da je to posebno vidljivo na prijelazu učenika iz nižih razreda osnovne škole u 5. razred osnovne škole, zbog značajne razlike u nastavnom programu. Program predmeta 5. razreda, za razliku od nastavnoga programa u nižim razredima osnovne škole, ima znatno drugačije i nove teme učenja. Također su postojale specifične hipoteze koje su navodile da postoji značajna razlika u utjecaju tjelesnoga vježbanja učenika 5. razreda na njihov školski uspjeh u nastavi TZK na kraju školske godine u odnosu na njihov školski uspjeh na kraju prvog polugodišta te da tjelesno vježbanje značajno utječe na razliku u školskom uspjehu učenika na satima TZK na kraju prvog polugodišta i na kraju školske godine, ovisno o spolu učenika i mjestu u kojem se nalazi osnovna škola koju učenici pohađaju; obitelji učenika koje podržavaju tjelesno vježbanje značajno doprinose uspjehu učenika na nastavi TZK, ovisno o spolu i mjestu osnovne škole; motivacija učenika za tjelovježbu i njihovo ukupno zadovoljstvo tjelesnim vježbanjem utječe na njihov uspjeh na satima TZK.

U istraživanju su korištene metoda analize sadržaja, metoda istraživanja dokumenata, deskriptivna metoda istraživanja, poprečna studija i usporedna metoda istraživanja.

## Uzorak

Anketna populacija uključuje sve učenike 5. razreda koji su pohađali osnovne škole na sjeveru Kosova u drugom polugodištu školske godine 2018./19. Uzorak je obuhvatio 114 učenika čiji su školski uspjesi na kraju prvog polugodišta i na kraju školske godine 2018./19. analizirani za potrebe ovoga istraživanja. Struktura uzorka je sljedeća: 1) na temelju spola - muški 63 (55,30 %) i ženski 51 (44,70 %); 2) na osnovi područja na kojem se nalazi osnovna škola koju učenici pohađaju - urbano područje 52 (45,60 %) i ruralno područje - 62 (54,40 %); 3) na temelju obitelji koje podržavaju tjelesno vježbanje - da 34 (19,82 %) i ne - 80 (70,18 %). Istraživanje je provedeno u drugoj polovici 2019. godine na uzorku učenika petog razreda osnovnih škola s područja sjevernoga Kosova. Podatci su prikupljeni zapisnikom i uz pomoć Skale uspjeha učenika na satima TZK (Scaler - SS - PEC). Motivacija učenika za postizanje boljih rezultata na satima Tjelesnog odgoja ispitivana je pomoću standardizirane Motivacijske skale (MS) koja se više puta koristila u brojnim istraživanjima i koja sadrži 15 predmeta s ljestvicom od tri točke (Guzina, 1986).

## Statistička analiza

Podatci prikupljeni istraživanjem analizirani su u statističkim programom SPSS 24.0. Za izračun učestalosti (N) i postotaka (%) korišteni su opisni statistički podatci koji se odnose na strukturu uzorka. Neparametrijski Wilcoxonov test korišten je u svrhe komparativne analize školskoga uspjeha učenika na satima TZK na kraju prvog polugodišta i na kraju školske godine 2018./19. Usporedba varijanci dviju ovisnih varijabli korištena je kako bi se utvrdio utjecaj tjelesnih vježbi učenika na njihov školski uspjeh u nastavi TZK na kraju prvog polugodišta i na kraju školske godine 2018./19., ovisno o spolu učenika (muški i ženski) i mjestu pohađanja učenika osnovnih škola (urbano i ruralno). Dvosmjerna analiza varijance utvrdila je međuovisni utjecaj između obitelji koje podržavaju tjelovježbu u različitom stupnju i spola učenika, tj. područje u kojem se nalazi osnovna škola koju pohađaju na njihov uspjeh u nastavi TZK na kraju školske godine. Linearnom korelacijom ispitan je utjecaj motivacije učenika za bavljenje tjelesnim vježbanjem na njihov uspjeh na nastavi TZK na kraju školske godine.

## Rezultati

Izračunata Z-vrijednost pokazala je statističku značajnost na razini  $p < .001$  (Tablica 1). Wilcoxonov test pokazao je *b-opciju* koja upućuje na to da su tjelesne vježbe učenika 5. razreda pridonijele da njihov školski uspjeh na satima TZK bude znatno bolji na kraju školske godine u odnosu na njihov školski uspjeh na kraju prvog polugodišta.

Tablica 1.

Približno iste aritmetičke sredine izračunate su za učenike i učenice za dvije ovisne varijable s obzirom na njihov školski uspjeh na kraju prvog polugodišta i na kraju školske godine. Iako se na temelju izračunatih aritmetičkih sredina ne može utvrditi postoje li statistički značajne razlike u utjecaju tjelesnoga vježbanja učenika na njihov školski uspjeh na kraju prvog polugodišta i na kraju školske godine ovisno o spolu učenika, nešto viša aritmetička sredina izračunata je za učenike muškoga spola i na kraju prvog polugodišta i na kraju školske godine (Tablica 2).

Tablica 2.

Izračunati F-indeks značajan je na razini  $p < .001$  pri testiranju rodne varijable učenika u odnosu na zavisnu varijablu učeničkoga školskog postignuća na kraju prvog polugodišta i na razini  $p < 0.05$  pri testiranju rodne varijable učenika u odnosu na zavisnu varijablu školskoga uspjeha učenika na kraju školske godine (Tablica 3). To ukazuje na to da su školski uspjesi učenika u nastavi TZK na kraju prvog polugodišta i na kraju školske godine jednaki i homogeni kod svih učenika bez obzira na njihov spol.

Tablica 3.

Podatci pokazuju (Tablica 4) da su približno iste aritmetičke sredine izračunate za učenike čija se osnovna škola nalazi u urbanom području u usporedbi s učenicima čija

je osnovna škola smještena u ruralnom području. Iako na temelju gornjih podataka nije moguće utvrditi postoje li statistički značajne razlike u doprinosu tjelesnih vježbi učenika njihovom školskom uspjehu na kraju prvog polugodišta i na kraju školske godine ovisno o mjestu osnovne škole koju učenici pohađaju, međutim postoji značajna razlika u aritmetičkim sredinama koja je nešto veća za učenike čija se osnovna škola nalazi na selu i na kraju prvog polugodišta i na kraju školske godine.

Tablica 4.

Na temelju podataka prikazanih u Tablici 5, može se vidjeti da F-indeks nije značajan pri testiranju varijable mjesta osnovne škole koju učenici pohađaju u odnosu na zavisnu varijablu o školskim postignućima učenika u nastavi TZK na kraju prvog polugodišta, ali je značajan na razini  $p < .05$  pri testiranju varijable mjesta škole koju učenici pohađaju u odnosu na zavisnu varijablu o školskim postignućima učenika na kraju školske godine (Tablica 5). To pokazuje da školska postignuća učenika u nastavi TZK na kraju polugodišta i na kraju školske godine nisu jednaka i homogena za sve učenike, već ovisno o mjestu pohađanja učenika osnovne škole.

Tablica 5.

Na utjecaju tjelesnoga vježbanja na školski uspjeh učenika na satima TZK na kraju prvog polugodišta i na kraju školske godine, ovisno o mjestu pohađanja učenika osnovne škole (Testovi učinaka između predmeta) utvrđena je značajna razlika između spolova učenika:  $F = 21,727$  na razini  $.001$  ( $p = .000$ ) i među obiteljima učenika koji različito podupiru tjelesno vježbanje:  $F = 7,002$  na razini  $.01$  ( $p = .009$ ). Rezultati također pokazuju da interakcija između spolova učenika i obitelji koje podržavaju tjelesno vježbanje različito (podrška - nedovoljna podrška) značajno utječe na uspjeh učenika na satu TZK:  $F = 23,921$  na razini  $.001$ , ( $p = .000$ ) (Tablica 6).

Tablica 6.

Analiza Dijagrama 1 pokazuje da učenici koji dolaze iz obitelji koje podržavaju tjelesno vježbanje postižu znatno bolje rezultate u odnosu na učenice koje dolaze iz obitelji koje podržavaju tjelesno vježbanje. Kada je riječ o obiteljima koje nedovoljno podržavaju tjelesno vježbanje, njihov utjecaj na uspjeh učenika na satima TZK je beznačajan na temelju spola učenika.

Dijagram 1.

Nije utvrđena značajna razlika između obitelji učenika koje različito podržavaju tjelesno vježbanje:  $F = .042$  ( $p = .838$ ) i mjesta osnovne škole koju učenici pohađaju:  $F = .525$  ( $p = .470$ ). Za razliku od pojedinačnih utjecaja, rezultati istraživanja pokazali su da interakcija između obitelji učenika koji različito podržavaju tjelesno vježbanje (podrška - nedovoljna podrška) i lokacije osnovne škole (grad - selo) značajno utječe na uspjeh učenika u nastavi TZK:  $F = 8,3019$  na razini  $.005$ , ( $p = .005$ ) (Tablica 7).

#### Tablica 7.

Pronađeni su kontrastni rezultati u vezi s obiteljima koje različito podržavaju tjelesni odgoj i mjestom osnovne škole koju učenici pohađaju te njihovim učinkom na školski uspjeh na nastavi TZK. U školama u urbanim sredinama učenici koji dolaze iz obitelji koje podržavaju tjelesni odgoj imaju bolji uspjeh od učenika iz obitelji koje nedovoljno podržavaju tjelesni odgoj. Kad je riječ o ruralnom okruženju, pronađeni su suprotni rezultati. Dijagram 2 pokazuje da bolji uspjeh na nastavi TZK postižu učenici koji dolaze iz obitelji koje nedovoljno podržavaju tjelesni odgoj u usporedbi s učenicima koji dolaze iz obitelji koje podržavaju tjelesni odgoj.

#### Dijagram 2.

Pronađena je pozitivna korelacija ( $r = .270$ ;  $p = .004$ ). To znači da se s porastom motivacije učenika za uspjeh na nastavi TZK povećava školski uspjeh na satima TZK. Prema Cohenovim kriterijima taj je utjecaj malen (Tablica 8).

#### Tablica 8.

## Rasprava

Prethodne teorijske i empirijske studije pokazale su da je veća razina tjelesnih vježbi važna za sve ljude, bez obzira na spol i dob. Ovaj pozitivan učinak vidljiv je već i kod vrlo male djece budući da dinamičke i statičke vježbe značajno utječu na njihovu izvedbu (Boyaci i sur., 2018). Tjelesno vježbanje također osigurava učinkovitije prevladavanje brojnih razvojnih poteškoća i prepreka u učenju i sudjelovanju djece u nastavi TZK i općenito. Različite tjelesne aktivnosti doprinose jačanju volje i koncentracije djece, što je posebno važno tijekom pedagoškoga liječenja djece sa simptomima autizma i hiperaktivne djece (Tarr i sur., 2020). Postoje i primjeri kada su određene sportske igre, poput jahanja, s pedagoškoga stajališta učinkovite u radu s djecom s ozbiljnim zdravstvenim problemima i poteškoćama u razvoju. Tjelesno vježbanje dodatno pridonosi razvoju motivacije, volje i kognitivnih sposobnosti učenika (Butler i sur., 2019). Važnost tjelesnoga vježbanja potvrđena je u rezultatima i kritičkim analizama ovoga istraživanja.

Prijelaz između 11. i 12. godine života uglavnom se spominje kao razdoblje tijekom kojeg se tjelesna aktivnost kod djece znatno povećava i kada se počinju aktivnije baviti sportom. Uz tjelesni razvoj, povećanje tjelesne snage i brzine javlja se kod sve djece u ovoj dobi, posebno dječaka (Miftakhov i sur., 2019). Tjelesna aktivnost i tjelesno vježbanje djece u ovoj dobi ovisi o brojnim čimbenicima. Na to prvenstveno utječe nastavnikov stil poučavanja - autoritarni, autoritativni, demokratski i Laissez-faire (Milenović, 2015; Milenović, 2011). Sam izgled učitelja također je važan čimbenik. Nedavno istraživanje navodi da su 11-godišnji učenici u različitim razrednim odjelima iste škole imali različite pristupe vježbanju. Učenici čiji je učitelj bio atletski građen i koji se također bavi sportom bili su više zainteresirani za vježbanje i bavljenje sportom,



za razliku od učenika drugog razreda čiji je učitelj bio stasit i nije se bavio sportom (McKown i sur., 2019). Sljedeći značajan čimbenik koji osigurava višu razinu tjelesnoga vježbanja učenika je izgled i dizajn teretane ili sportskoga terena na kojem se odvija tjelesno vježbanje. Dizajn i izgled učionice kao motivacijski čimbenik za učenike da se više bave tjelesnim vježbama, posebno je važan u manjim, prvenstveno seoskim školama, gdje nema teretane ili sportskih terena pa se učionica, školsko dvorište ili drugi prostor koristi kao teretana.

Empirijske analize u ovom istraživanju pokazale su da s aspekta spola učenika tjelesno vježbanje značajno doprinosi boljem školskom uspjehu učenika 5. razreda i na kraju polugodišta i na kraju školske godine. Već je naglašeno da se u ovoj dobi tjelesna aktivnost svih učenika povećava i da se mnogi od njih počinju aktivnije baviti nekim sportom, no to je ipak karakterističnije za dječake nego za djevojčice. U ovom istraživanju to je pokazala nešto viša aritmetička sredina izračunata za dječake u usporedbi s djevojčicama, kako u pogledu njihovih školskih postignuća u nastavi TZK na kraju polugodišta, tako i na kraju školske godine. Jedno istraživanje koje je „... trebalo ispitati razlikuju li se percepcija autonomije tijekom nastave tjelesnog odgoja (PE), percepcija motivacije i namjere učenika za tjelesnom aktivnošću izvan škole ovisno o njihovoj obrazovnoj razini i spolu” (Karaoglanidis i sur., 2020, 25), pokazalo je da djevojčice u usporedbi s dječacima imaju manje želje za tjelesnim vježbanjem dok prelaze na višu razinu obrazovanja. Na veće zanimanje dječaka za sport u odnosu na djevojčice ukazuju i rezultati istraživanja u okviru studije koja se usredotočila na sportski trening za dječake i djevojčice (Sener i Durmaz, 2019).

Nešto manje usklađeni rezultati istraživanja pronađeni su ispitivanjem doprinosa tjelesnoga vježbanja uspjehu učenika na kraju prvog polugodišta i na kraju školske godine, ovisno o mjestu osnovne škole. Značajna razlika utvrđena je samo u rezultatima vezanim za kraj školske godine, a ne i u rezultatima vezanim za kraj prvog polugodišta. To je zasigurno razumljivo jer dulji period tjelesnoga vježbanja jamči da će rezultati biti znatno bolji. Neke su studije pokazale da se bolji školski rezultati mogu postići samo češćim tjelesnim vježbanjem i treningom (Rasmussen i sur., 2019). Također su pokazali da se bolji rezultati mogu postići kao rezultat učinkovitijega treninga, umjesto da na njih utječu natprosječne sposobnosti pojedinih učenika da se bave određenim sportom (Kiewra i Witte, 2018).

Nešto viša aritmetička sredina izračunata je za učenike čija se osnovna škola nalazi u ruralnom području u odnosu na učenike čija se osnovna škola nalazi na gradskom području, na kraju prvog polugodišta i na kraju školske godine. Bez obzira što je bilo realnije očekivati da će osnovci iz urbanih sredina koji imaju više mogućnosti za tjelovježbu i sport pokazati veći interes za tjelovježbu, rezultati su pokazali suprotno - da osnovci koji žive u ruralnim područjima pokazuju veći interes za tjelesne vježbe i sport. S jedne strane, takvi su rezultati opravdani u regiji u kojoj je provedeno istraživanje. Jedine osnovne škole na gradskom području su one smještene na području sjevernoga dijela Kosovske Mitrovice, koje nakon 1999. više nije takvo urbano okruženje. Škole

u ruralnom području su škole smještene u Zvečanu, Zubinom Potoku, Sočanici, Laposaviću i Lešku, koje po urbanosti ne zaostaju previše za sjevernim dijelom Kosovske Mitrovice. S druge strane, postoje studije u kojima su rezultati istraživanja pokazali da su učenici osnovnih škola u ruralnim područjima zbog nedostatka uvjeta pokazali veći interes za tjelovježbu i sport, nego učenici osnovnih škola u urbanim sredinama (Gabdrakhmanova i Kostarev, 2016), što uglavnom opravdava i podupire nalaze istraživanja ove studije.

Rezultati ovoga istraživanja pokazali su da obitelji koje različito podržavaju tjelesno vježbanje značajno utječu na uspjeh učenika na satima TZK. Važnost utjecaja obitelji na uspješnost učenika na satima Tjelesnoga odgoja potkrepljuju rezultati brojnih studija (Zach, 2020; Varea, 2018). U jednom istraživanju inkluzivne teorije i prakse u nastavi tjelesnog odgoja utvrđeno je 7 čimbenika koji značajno doprinose učinkovitosti u radu učitelja i uspjehu učenika u nastavi TZK. Rezultati ovoga istraživanja prvi su put pokazali da više tjelesnih aktivnosti i tjelesnih vježbi učenika 5. razreda doprinose njihovom boljem školskom postignuću na satima TZK na kraju prvog polugodišta, a još više njihovim postignućima na kraju školske godine. Odabir učenika ove dobi nije slučajan. U kritičkim analizama prikazanim u teorijskom pristupu problemu ove studije i u dijelu za raspravu, ova se dob učenika iz nekoliko razloga vidi kao značajno razdoblje. Prvi razlog odnosi se na nastavni plan i program tjelesnoga odgoja koji se u 5. razredu osnovne škole značajno razlikuje od nastavnih programa u nižim razredima osnovne škole. U ovoj dobi učenici se bave složenijim tjelesnim vježbama, vježbaju na gimnastičkim i visinskim spravama, detaljnije se upoznaju s osnovnim elementima kao i s taktikama i tehnikama različitih individualnih i timskih sportova. Mnogi se učenici, samostalno ili na prijedlog roditelja ili učitelja, počinju aktivnije baviti nekim od pojedinačnih ili timskih sportova u okviru sportskih grupa u školi ili izvan škole u sportskim klubovima. Tome su najviše pridonijeli pozitivni učinci veće tjelesne aktivnosti učenika i, prije svega, njihove tjelesne vježbe (Anastasopoulou i sur., 2020; Hadžović i sur., 2020).

Istraživanje koje je raspravljalo o inkluzivnoj teoriji i praksi i njihovoj upotrebi na satima TZK izdvojilo je 7 čimbenika koji značajno doprinose učinkovitosti učitelja kod učenika na satima TZK. Jedan od njih, koja se smatra najvažnijom, jest obiteljska suradnja (Toloi i sur., 2016: 25). Obitelj je samo jedno od okruženja o kojem ovisi uspjeh učenika na nastavi TZK. Isto bi se trebalo odnositi i na samu okolinu. Okolina u kojoj je provedeno ovo istraživanje posljednjih se desetljeća suočila s nizom problema. Građanski sukobi, kolaps gospodarstva, dolazak međunarodne misije, bezakonje na sjevernom Kosovu i porast kriminala, samo su neki od mnogih društvenih fenomena koji se događaju u svim sferama društvenoga života i rada. Sport u ovoj regiji nije dovoljno razvijen i na znatno je nižoj razini u odnosu na prije 30 godina. Sve se to značajno odrazilo na obrazovanje općenito i na nastavu TZK. U takvim okolnostima postoje paralelni sustavi koji se međusobno ne prepoznaju. Takva podjela postoji i u obrazovanju i u sportu (Duncan, 2016; Tahirsylaj, 2013). Zato možemo reći da ovo

okruženje ne podržava tjelesno vježbanje, što se odnosi i na obitelji iz kojih učenici dolaze. To pokazuje i činjenica da samo 19,82 % obitelji iz kojih učenici dolaze podržavaju tjelovježbu. U sredinama u kojima su tjelesne vježbe podrška, djeca su, po uzoru na svoje roditelje i ostale odrasle članove obitelji, više uključena u tjelesne vježbe. To stvara navike i želju za nastupom na ovom području, što se posljedično odražava na njihov bolji uspjeh na satima TZK. Tome u prilog idu rezultati brojnih studija koji su u skladu s rezultatima ovoga istraživanja (Joy i Larsson, 2019; Yun i Beamer, 2018).

Očekivanje da će se s većom motivacijom učenika za tjelovježbom postići bolji rezultati na satima Tjelesnog odgoja potvrdilo je ovo istraživanje. Ipak, motivacija učenika kao individualna psihološka kategorija nije dovoljna za bolji uspjeh. U ovom istraživanju korištena je nepodijeljena skala za ocjenjivanje učenika. Za razliku od ovoga istraživanja, studija provedena na Fakultetu sportskih znanosti Sveučilišta YaGar također je utvrdila da nije postojala značajna razlika u uspješnosti učenika na satima TZK ovisno o motivaciji, međutim, podskala koja je ispitivala čimbenike motivacije otkrila je da motivacija još uvijek utječe na uspješnost na satima TZK, ali u određenim segmentima i ovisi o brojnim čimbenicima (Akyol i Imamoglu, 2019: 440). Na temelju toga opet se izvodi zaključak da je za značajniji uspjeh u nekom području potreban i utjecaj društvenoga okruženja koje treba u dovoljnoj mjeri podržati određenu aktivnost. To su pokazali rezultati brojnih studija objavljenih u vodećim međunarodnim znanstvenim časopisima (Aygün i Demir, 2020; Can i Deniz, 2019; Gomes i sur., 2019). U područjima gdje nema organiziranih sportskih natjecanja, a sjever Kosova je jedno od mnogih takvih područja na današnjem Kosovu, sigurno je da se tako nešto ne može postići. Činjenica da lokacija škole ne utječe značajno na podršku tjelesnom vježbanju na sjeveru Kosova pokazuju i dijametralno suprotni rezultati istraživanja. Pokazuju da učenici u urbanim sredinama koji dolaze iz obitelji koje podržavaju tjelesno vježbanje postižu bolje rezultate od učenika koji dolaze iz obitelji koje nedovoljno podržavaju tjelesno vježbanje. Nadalje, dok u školama u ruralnim područjima bolje rezultate na satima TZK postižu učenici koji dolaze iz obitelji koje ne podržavaju tjelesno vježbanje u odnosu na učenike koji dolaze iz obitelji koje podržavaju tjelesno vježbanje. Ovaj rezultat svakako treba uzeti s rezervom s obzirom na to da je jedino urbano područje na sjeveru Kosova sjeverni dio Kosovske Mitrovice koji je nedovoljno urbaniziran, dok su ostala ruralna područja uvelike slična uvjetima u Kosovskoj Mitrovici, pa je ovaj rezultat razumljiv.

## Zaključak

Rezultati istraživanja potvrdili su nalaze prethodnih studija da tjelesno vježbanje učenika značajno doprinosi njihovom boljem školskom postignuću na satima TZK. Programi tjelesnoga odgoja u osnovnim su školama međusobno povezani, ali se i dalje razlikuju s aspekta njihove složenosti za svaki razred. Najznačajnija razlika u nastavnim programima vidljiva je na prijelazu učenika iz nižih razreda osnovne škole u više razrede osnovne škole, što je ovo istraživanje učinilo posebno značajnim

i zanimljivim. Rezultati ovoga istraživanja pokazali su da je tjelesno vježbanje učenika doprinijelo da školska postignuća učenika 5. razreda budu znatno bolja na kraju školske godine u odnosu na njihov školski uspjeh na kraju prvog polugodišta. Rezultati ovoga istraživanja također pokazuju da uspjeh učenika na satima TZK ovisi o obiteljima učenika. Utvrđeno je da, ovisno o spolu, učenici koji dolaze iz obitelji koje podržavaju tjelesno vježbanje pokazuju bolje školske rezultate na satima TZK od učenika koji dolaze iz obitelji koje ne podržavaju tjelesno vježbanje te da su učenici imali znatno bolji školski uspjeh od učenika. Što se tiče lokacije osnovne škole, pronađeni su različiti rezultati u interakciji obitelji koje različito podupiru tjelesni odgoj i područja u kojima pohađaju osnovnoškolci. Rezultati su pokazali da u urbanim sredinama učenici koji dolaze iz obitelji koje podržavaju tjelesno vježbanje pokazuju bolji školski uspjeh na satima TZK dok u seoskim školama učenici koji dolaze iz obitelji koje ne podržavaju tjelovježbu imaju bolji školski uspjeh na satima TZK. Također je utvrđeno da motivacija učenika za bavljenje tjelesnim vježbama značajno utječe na njihov bolji uspjeh na nastavi TZK.

Rezultati istraživanja također su pokazali da školska postignuća učenika na satima Tjelesne i zdravstvene kulture na kraju prvog polugodišta i na kraju školske godine jednako ovisi o tjelesnoj vježbi učenika bez obzira na njihov spol, ali različito ovisi o tjelesnoj vježbi učenika ovisno o mjestu osnovne škole koju pohađaju, gdje je značajan utjecaj utvrđen samo u školskim postignućima učenika u nastavi TZK na kraju školske godine, a ne na kraju prvog polugodišta, što je također rezultat većih, dužih i učinkovitijih napora učenika u tjelesnom vježbanju koji se javljaju na kraju školske godine, u usporedbi s njihovim naporima u vježbanju na kraju prvog polugodišta. Polazeći od rezultata istraživanja i kritičkih analiza predstavljenih u ovom radu koje su pokazale da se tjelesni odgoj u zemljama s razvijenijim obrazovnim sustavima, tijekom obveznoga obrazovanja izvodi u mnogo većem broju u odnosu na broj sati u Srbiji, te da postoji potreba za promjenom nastavnih planova i programa TZK u Srbiji kako bi se osiguralo bolje, duže, inovativnije, svestranije i nadasve učinkovitije tjelesno vježbanje učenika na satima TZK, što je u pedagogiji kao znanosti, od presudne važnosti. Postizanje ciljeva i zadataka učenja tjelesnog odgoja značajno ovisi o postizanju ciljeva intelektualnoga, moralnoga, radno-tehničkoga i estetskoga obrazovanja učenika u osnovnoj školi. Polazeći od ciljeva tjelesnoga odgoja u pedagogiji kao znanosti, postoji potreba za pronalaženjem novih metoda i pristupa kako bi se postigao rekreativni cilj tjelesnoga odgoja. Potrebu za tim podupire i mali broj obitelji učenika koje podržavaju tjelesno vježbanje (19,82 %). Uključivanje što većega broja ljudi u svakodnevne tjelesne vježbe značajno bi doprinijelo uspjehu učenika na satima TZK. Mnogi od njih u školu dolaze bez razvijenih navika i bez potrebe za stalnim tjelesnim vježbanjem. To potvrđuju kritičke analize predstavljene u ovom radu i rezultati mnogih drugih istraživanja koje su pokazale da okolina koja podupire neku aktivnost doprinosi boljim rezultatima, što je zasigurno slučaj s nastavom TZK u osnovnoj školi. To se posebno odnosi na 5. razred osnovne škole, što je prijelazno razdoblje od prvoga do drugoga osnovnoškolskog ciklusa, gdje se mnogi učenici počinju aktivno baviti sportom i u školi i u sportskim klubovima.

## **Zahvale**

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