

Original Article

Attitudes of junior adolescents toward physical education through the prism of contextual factors and traits of a child

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Abstract

This study aims to examine the attitudes of pupils of early adolescent age towards physical education (PE), and perceive if there is any significant difference in positive attitudes towards physical activity (PA) as a function of pupils' gender, age, academic success and pursuing PA during their leisure time. The research was carried out on a sample of 199 pupils. The results showed that pupils have a moderately positive attitude towards PE, and there are no significant gender-related difference. Older pupils have more negative attitudes towards PE; academic success has a positive effect on pupils' attitudes; and pupils pursuing PA in their spare time have more positive attitudes towards PE. Goal of PE is developing older pupil' positive attitudes that promote lifelong physical activity by designing high quality curriculum and educating and training teachers of PE.

Key words: enjoyment, usefulness, academic success, leisure time, goal of physical education.

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Introduction

Attitudes permeate everything humans do in their life and represent one of the most important components in all aspects of human existence. Their formation begins at an early age and it is possible to develop a variety of attitudes over the years with regard to many aspects of life. In the last two decades, there is a growing number of studies focused on pupils' attitudes towards physical education and physical activity in general (Smoll and Schutz, 1980; Patterson and Faucette, 1990; Lukeand Sinclair, 1991; Van Wersch et al., 1992; McKenzie et al., 1994; Carlson, 1995; Ennis, 1996; Portman, 1995; Silverman and Subramaniam, 1999; Koca et al., 2005; Arabaci, 2009; Lazarević et al., 2015). Research dealing with this issue also confirm that pupils' attitudes comprise a key factor that influences physical activity in children (Hagger et al. 1997; Chung and Phillips, 2002; Solmon, 2003; Ding et al. 2006).

One of the goals of education and upbringing highlighted in the Law on Primary Education of the Republic of Serbia is the development and practice of healthy lifestyle, awareness of importance of the own health and safety, the need for nourishment and development of physical abilities (<http://www.mpn.gov.rs>). "In addition of having the potential of affecting the achievement in physical education, attitude as a mediating variable has also the potential of affecting pupils' participation in physical activities outside the class, i.e. during their leisure time" (Carlson, 1995; Ennis, 1996; Portman, 1995; Subramaniam and Silverman, 2000, see Lazarević et al. 2015: 88). Physical education (PE) in school directly affects physical activity (PA) of a child in general, as well as the adoption of healthy lifestyle in general. Therefore, the primary objective of physical education is developing positive attitudes in children to promote lifelong physical activity (Rikard and Banville, 2006; Subramaniam and Silverman, 2007; Zeng et al., 2011; Kamtsios, 2011; NASPE, 2012; Chatterjee et al., 2013).

Solomon (2003) highlights the children's characteristics and contextual factors as two key factors directly related to the child's attitudes. The children's characteristics include their age and gender, while the contextual factors include the quality of programs of physical education, academic success of pupils, and the availability of physical activities in leisure time (Zeng et al., 2011).

Studies are showing an interesting inclination; namely, positive attitudes towards PE decrease with the child's age, i.e. as children get older, their attitudes towards PE are less positive (Silverman and Subramaniam, 1999; Prochaska et al., 2003; Xiang et al., 2004; Lee, 2004; Subramaniam and Silverman, 2007; Biddle and Mutrie, 2008; Arabaci, 2009; Hunuk and Demihan, 2010; Zeng et al., 2011; Bryan and Solmon, 2012; Safvenbom et al., 2014). This is particularly notable in adolescence – from early to late adolescence (Lazarević et al., 2015).

On the other hand, when it comes to gender-related differences in the attitudes of children towards PE, the agreement among researchers is much lower. Some research and researchers pointed out that there is a significant difference between boys and girls, with boys having more positive attitudes towards PE than girls

(Koca and Demirhan, 2004; Stelzer et al., 2004; Koca et al., 2005; Hunuk and Demihan, 2010; Safvenbom et al., 2014; Lazarevic et al., 2015). Also significant is the number of studies in which gender-related differences in attitudes towards PE were not found (Shropshire et al., 1997; Subramaniam and Silverman, 2007; Colquitt et al., 2012; Chatterjee, 2013; Đačić et al., 2014). There are a small number of studies, which are nevertheless important, where girls have more positive attitude towards PE than boys (Kocak and Hurmeric, 2006).

Regarding contextual factors, studies show that the quality of programs of physical education is indicated as one of the major factors that influence the attitudes of children towards PE and PA (Zeng et al., 2011). The aforementioned studies also imply that in this case, positive attitudes of children are mainly associated with having fun, experience of usefulness of the curriculum, and the sense of belonging (Carlson, 1995; Subramanina and Silverman, 2002 Vereijken, 2007).

Results of available studies confirm that the positive attitude of children towards PE is positively correlated with their academic success (Carlson et al., 2008; Howie and Pate, 2012). However, the aforementioned studies failed to test the feedback, i.e. whether better academic success affects the more positive attitude towards PE.

A number of studies relate to the positive attitude of pupils towards PE with their participation in PA during their leisure time (Chung and Phillips, 2002; Portman, 2003; Koca and Demirhan, 2004; Wallhead and Buckworth, 2004).

When analyzing the previous studies on pupils' attitudes towards PE, it can be concluded that the majority of pupils of adolescent age has positive attitudes towards PE, and along the continuum from moderately positive to entirely positive attitudes (Silverman and Subramaniam, 1999; Stelzer et al., 2004; Koca et al., 2005; Subramaniam and Silverman, 2007; Arabacı, 2009; Zeng et al., 2011; Safvenbom et al., 2014; Lazarevic et al., 2015).

Considering the importance of attitude of pupils in adolescence towards PE, the aim of this study is to examine the attitudes of pupils from fifth to eighth grade (early adolescent age) towards PE, and determine if there is a significant difference in the positive attitude towards PE as function of pupils' age (grade), academic success and pursuing PA during their leisure time.

Research method

Research sample and procedure

The research sample consisted of 199 pupils attending one elementary school in Novi Sad (Serbia). Pupils were of both gender, from the fifth to the eighth grade; out of 199 (100%) pupils, 97 were males (48.7%), and 102 females (51.3%). This school has necessary conditions for implementation of physical activities. Prior to research, the consent of school director and teachers of physical education were obtained. Participants were previously informed about the objectives of the research and anonymity of the data was guaranteed. The questionnaire was completed in 20 minutes on average, and all the pupils participated voluntarily.

Research instrument

The research instrument was a questionnaire which consisted of two parts. The first part relates to the examination of pupils' attitudes towards physical education in school. The instrument known as Student's Attitudes Toward Physical Education – SATPE has been used (Subramaniam and Silverman, 2000). The instrument contains 20 items and uses the five-degree Likert type scale (1 - strongly disagree, 5 - strongly agree). Items were grouped in two subscales: enjoyment (affective component) and usefulness (cognitive component). Each subscale contains 10 items. The example of statement on the subscale of enjoyment is: "I feel the games I learn in physical education class make learning fun for me," while the example on subscale of usefulness is: "My physical education teacher makes my physical education class seem unimportant to me." The minimum score on the SATPE scale is 20, while the maximum score is 100. Higher values denote more positive attitude. Minimum value of each subscale is 10, while the maximum is 50. The alpha reliability coefficients for scores on Factor 1 (Enjoyment) and Factor 2 (Usefulness) increased from .86 to .89 and from .84 to .86, respectively (Subramaniam and Silverman, 2000). In other research in Serbia the SATPE instrument proved to be a reliable measure of student's attitudes towards physical education. In that research reliability (Cronbach α) amounts to .90 for the subscale enjoyment, .89 for the subscale usefulness and .94 for the instrument as a whole (Đačić et al., 2014).

The second part of the questionnaire was designed for the purpose of this study and included questions about gender, class, academic success in the previous class (average scores in all subjects of the previously completed grade) and pursuing physical activities in leisure time. Pursuing physical activities (PA) beyond physical education (PE) classes has been examined using questions: Are you engaged in sports and physical activities in your leisure time? and How often are you engaged in physical activities beyond school curriculum? (not engaged in any activity, 1-2 times a week, three times a week, more than 3 times a week).

Results

The descriptive statistics showed that the achieved values across the components of enjoyment and usefulness were above-average: across the subscale of joyfulness they were $M = 36.66$ of the total of 50, $SD = 10.5$, across the subscale of usefulness were $M = 35.88$ of the total of 50, $SD = 10.29$. Thus we get that the total score of the SATP questionnaire is positive $M = 72.55$ of the total of 100, $SD = 20:19$. Given the obtained values, the result can be rather interpreted as moderately positive than extremely positive attitude of pupils towards PE.

The results showed that there were no differences between boys and girls in the perception of enjoyment and usefulness (Table 1) in PE. The relation between the pupils' gender and their attitudes towards PE was explored using multivariate analysis of variance (MANOVA). No statistically significant difference was found in attitudes towards PE with respect to the pupils' gender ($F(2, 196) = .320, p > .05, \text{Wilks } \lambda = .99, \text{partial } \eta^2 = .003$).

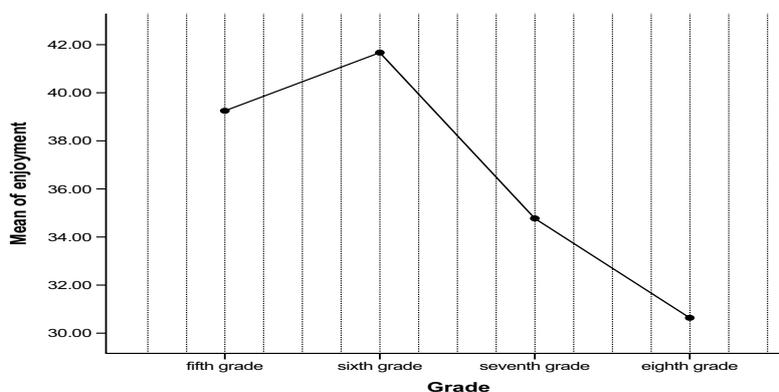
Table 1: Differences in attitudes towards PE with respect to the pupils' gender

Attitude component	Males		Females		F (1, 197)	p	η^2
	M	SD	M	SD			
Enjoyment	36.06	10.63	35.42	10.48	.619	.432	.003
Usefulness	37.23	10.40	36.33	10.15	.388	.534	.002

Note: M – arithmetical mean, SD - standard deviation, F(df) - test statistics and the degrees of freedom, p - level of significance, η^2 - square partial η coefficient

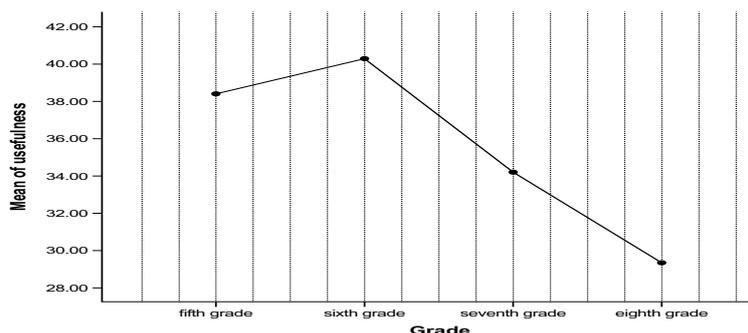
The influence of the respondents' age (depending on the grade they attend) on their attitude towards PE is calculated by using the one-factor ANOVA, or the Scheffe test of subsequent comparisons. The obtained results show that pupils of higher grades have more negative attitude toward physical education than pupils of lower grades. Significant differences in the enjoyment of PE exist between pupils of the fifth (M = 38.83, SD = 12.64) and eighth grade (M = 30.68, SD = 7.17), as well as between pupils of the sixth (M = 41.07, SD = 8.76) and seventh grade (M = 34.63, SD = 10.27), pupils of the sixth and eighth grade, and pupils of the seventh and eighth grade. Thus, the difference is not confined only to the fifth and sixth, and fifth and seventh grade (Figure 1).

Figure 1. Differences in the enjoyment of PE between pupils



Subsequent comparisons have shown that there are significant differences in the perception of usefulness of PE classes between pupils of the fifth (M = 38.37, SD = 11.25) and eighth grade (M = 29.33, SD = 9.03), as well as between pupils of the sixth (M = 40.29, SD = 8.35) and seventh grade (M = 34.20, SD = 9.32). The difference between pupils of the seventh and eighth grade is insignificant, neither is the difference between pupils of the fifth and sixth grade (Figure 2).

Graph 2. Differences in the perception of usefulness of PE classes between pupils



Academic success has a positive effect on pupils' attitudes toward physical education at school. Namely, academic success is positively related both with the component of enjoyment (coefficient of significance .253) and with the component of usefulness (coefficient of significance .195). (Table 2).

Table 2: Influence of academic success to the pupils' attitudes towards physical education

Variable	School success	Enjoyment	Usefulness
School success	-		
Enjoyment	.253**	-	
Usefulness	.195**	.885**	-

Note: **p – level of significance .01

There are 149 (74.9%) pupils engaged in sports in the leisure time, while 50 (25.1%) of them are not involved in any sports in their leisure time. When it comes to the frequency of being engaged in sports 74.9% of respondents are engaged in sports as an extracurricular activity, 20 (10.1%) are engaged in sports 1-2 times a

week; 36 (18.1%) are engaged 3 times a week; while as much as 46.7% (93) are engaged in sports more than three times a week.

The relation between being engaged in sports in the leisure time and the attitude towards PE has been examined using multivariate analysis of variance (MANOVA). A statistically significant difference was found between attitudes towards PE with respect to being engaged in sports beyond the PE class ($F(2, 196) = 26.851$, $p < .001$, Wilks $\lambda = .785$, partial $\eta^2 = .215$). Table 3 shows the results obtained.

Table 3: Differences in the attitude towards physical education as a function of being engaged in sports in leisure time

Attitude component	Engaged in sports		Not engaged in sports		$F(1, 197)$	p	η^2
	M	SD	M	SD			
Enjoyment	39.46	8.92	28.32	10.51	53.21 (1, 197)	.00	.21
Usefulness	38.18	9.51	29.06	9.55	34.31 (1, 197)	.00	.15

Note: M – arithmetical mean, SD - standard deviation, $F(df)$ - test statistics and degrees of freedom, p - level of significance, η^2 - square partial η coefficient

Discussion, implications and conclusions

The attitudes of primary school pupils in Serbia towards physical education have been investigated in this study, as well as gender-based differences in attitudes, whether there are differences in attitudes towards PE as a function of the grade pupils attend, and the influence of academic achievement and engagement in sports as extracurricular activity on the attitude towards physical education.

The main findings of the study are pupils' moderately positive attitudes towards physical education in schools. The obtained results also support other research which used SATP as their research instrument (Colquit et al., 2012; Đačić et al., 2014; Silverman and Subramaniam, 1999; Subramaniam and Silverman, 2007; Lazarevic et al., 2015). The same results of moderately positive attitude towards PE were found also by researchers who have used other instruments to measure pupils' attitudes towards PE (Arabaci, 2009; Brayan and Solmon, 2012; Zeng et al., 2011; Chatterjee, 2013; Kocak and Hurmeric, 2006). This questionnaire provided an insight in the overall attitude of pupils toward physical education. The attitude consisted of two elements: affective and cognitive component. Each of them represented one subscale of the instrument, and the results showed that pupils' attitude is somewhat more positive when it comes to enjoyment (affective component) in the PE class in comparison with usefulness (cognitive component) of the PE class. It will be important for further research to examine the extent to which teachers influence the pupils' perception of usefulness of PE or which factors are crucial for formation of even more positive attitude in pupils towards the significance and importance of PE.

Results of this study further suggest that there is no statistically significant difference in the perception of enjoyment and usefulness in the PE class between boys and girls, and therefore, statistically insignificant difference has been found in the overall attitude towards the PE with respect to pupils' gender. Although there is a probable prejudice that boys are more ready to be engaged in sports and have more positive attitude towards PA and PE, which has also been confirmed by many studies (Koca and Demirhan, 2004; Stelzer et al., 2004; Lazarevic et al., 2015), the results of this research support the results obtained in earlier research (Shropshire et al., 1997; Chatterjee, 2013; Arabaci, 2009; Šekeljić, 2012), which showed that there is no statistically significant gender-based difference to pupils' attitudes towards PE. This result could also be explained as the consequence of encouragement provided by society to live a healthy lifestyle and raising awareness about the importance of physical activities in childhood for developing healthy habits in adults. In order to maintain or strengthen pupils' positive attitude, it is necessary to deliver high quality PE teaching activity, which proved to be the factor that contributes most to pupils' attitude towards PE (Luke, 1991).

By analyzing the pupils' age (grade attended), the results indicate that pupils of higher grades have more negative attitude towards physical education than pupils of lower grades. There were significant differences in the component of enjoying the PE class between pupils of the fifth and eighth grade, as well as pupils between the sixth and seventh grade. Subsequent comparisons have shown that there are significant differences in perception usefulness of the PE class between pupils of the fifth grade and eighth grade, as well as between pupils of the sixth and seventh grade. The results of previous studies examining pupils' age and attitude towards PE (Arabaci, 2009; Bryan and Solmon, 2012; Subramaniam and Silverman, 2007; Lazarevic, 2015) have shown the same results, that is, with the transition to higher grades, the pupils' attitude towards PE has become more negative. By entering puberty, the attitude of female pupils, or their interests, towards PA and PE is severely reduced (Arabaci, 2009), so that further research should be focused on gender-related differences in attitudes of pupils in higher grades. In addition, efforts should be invested in keeping positive attitude of pupils attending higher grades, because classes of physical education can play an important role in creating interests in sports and active and healthy lifestyle in adulthood.

Furthermore, this paper aims to investigate interdependency between the pupils' attitude towards PE and their academic success. The obtained results in this study show that higher academic success leads to more positive attitude towards PE. Previous research were focused solely on the general effect of physical activities on academic success, and the results clearly show that participating in physical activity leads to better academic

success (Howie and Pate, 2012), so the obtained results can be interpreted only in this regard. Specifically, pupils with positive attitude towards PE are more engaged in PA, as it has been proved in this research, and also have better academic success.

The obtained results for the relation between engagement in sports and physical activities in leisure time and the attitude towards PE show that there is a significant difference in attitudes towards PE in relation to engagement in sports in extracurricular activities. Namely, 25.1% of the pupils are not engaged in sports at all in their leisure time, while as many as 46.7% of pupils are engaged in sport activities more than three times a week. Moreover, the research shows that pupils engaged in sports in their leisure time have more positive attitude towards PE than pupils who are not engaged in sport activities. By analyzing the components of enjoyment and usefulness across subscales of the instrument, the conclusion is that both components are in positive interdependence with being engaged in sports in leisure time, which is consistent with the previous research (Subramaniam and Silverman, 2007). Previous studies have shown that with the increase of sports activities in leisure time, positive attitude towards PE in school also increases (Silverman and Subramaniam, 1999; Sallis and McKenzie, 1991; Portman, 2003), while Sallis and McKenzie (1991) believe that the most important role of modern PE is to prepare children to adopt a healthy and active lifestyle, which will result in active engagement in some form of PA and sports throughout their entire life. This further implies that PE and being engaged in sport activities in leisure time have a two-way influence of one another, and that it is therefore necessary to promote teaching activity of PE, as well as educating and encouraging children to engage in PA beyond PE in the school.

General conclusion of this paper is that the results are encouraging for further work and future research in this area. Pupils' positive attitude towards PE should be nurtured, but efforts need to be invested to maintain this attitude in higher grades. Here, the teacher of PE should take a crucial role. Koka and Hein (2003) believe that when it comes to pupils' attitude towards PE, the influence of teachers of PE should be taken into account – they can be motivators and models of behaviour for their pupils, and their feedback can help pupils to realize their potential in PE classes. The same authors (2003) found that there is a high correlation between receiving feedback from teachers of PE and pupils' interest in participating in PE. The research conducted in Serbia showed that only 3.6% of athletes began their engagement in sports under the influence of their teacher of PE (Bačanac and Juhas, 2006), which is a disconcerting data. The research have also shown that pupils' attitude towards PE greatly depends also on the physical education curriculum (Carlson, 1995; Luke and Sinclair, 1991; Solomon and Carter, 1995; Sanders and Graham, 1995). Since this has not been the subject of this paper, curriculum certainly could be one of the following areas to explore in pupils' attitudes towards PE. Studies on the importance of PE in school curriculum (Koslow, 1988; Siendentop and O'Sullivan, 1992; Tannehill et al., 1994) have shown that physical education has been marginalized, which tends to negatively influence pupils' attitude. Over 50% of the pupils in higher grades believe that PE should occupy last position in the curriculum, which could also be the reason for the decline in pupils' positive attitude towards PE.

Finally, it can be concluded that the ultimate goal of teaching PE should be creating permanent habit and forming positive attitude that will persist during their entire life, encouraging pupils' participation in various types of PA, and forming healthy lifestyle. Primary goal of physical education is developing pupil' positive attitudes that promote lifelong physical activity (NASPE, 1995). Classes of PE should primarily be of educational nature, where their competitive feature should be of secondary importance. This goal can be achieved by educating and training teachers of PE, designing high quality curriculum, as well as linking the school, society, family, culture, and the entire environment, and all potentially influential factors. It should be borne in mind that PE maintains human health, brain functions, affective domain, moral and social behaviour, and that a well-planned PE is associated with increases in general self-concept (Schmidt et al., 2013). Future research should be carried out in this direction.

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