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## The Problems of Contemporary Education

### Comparison of Primary School Pupils' and Secondary School Students' Opinions on Physical Education Classes in Slovakia

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#### Abstract

This study analyses opinions of primary school pupils and secondary school students (boys and girls) on Physical education classes in Slovakia.

The survey was conducted in 21 Slovak towns with 6959 respondents – 3606 primary school pupils and 3353 secondary school students. Average age of boys from primary schools was 14.32 years  $\pm$  0.35 years and girls was 14.28 years  $\pm$  0.39 years. Average age of boys from secondary schools was 18.22 years  $\pm$  0.25 years and girls was 18.56  $\pm$  0.38 years. It was carried out in school year 2018/2019. The survey was based on inquiry created and evaluated by Gamo Banska Bystrica's programme TAP3. The survey results were analysed in terms of sex and age differences (chi – square statistic). It was established that popularity of Physical education (PE) classes declines with age. Almost 50 % of boys and girls stated they are active during PE classes, however their activity declines with age, and therefore they become more passive. More than 50 % of pupils and students always or mostly feel good during PE, when the main activities of the classes are games and fun. The most popular activity in PE classes is playing sports games, with the survey response frequency of 58.91 %. The least popular are gymnastic exercises, with the survey response frequency of 44.49 %. The significant difference was noted among particular groups of respondents in terms of statistical significance ( $p < 0.01$ ), especially from the point of view of the sex and age differences (primary school pupils vs. secondary school students).

**Keywords:** opinion, Physical education classes, sex differences, primary school pupils, secondary school students.

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## **1. Introduction**

At the turn of the millennium, the topic of improvement of the education system in Slovakia was widely debated in various science forums and expert discussions. The state education programme was implemented in primary and secondary schools through the efforts of Slovak experts. The main idea was to change the focus of PE classes: a variety of content in classes, adapting the content to school conditions, students' and pupils' interests and a teachers' responsibility for creating the content for particular groups of students or pupils (Antala et al., 2012). Vilimová (2009) sees the principal specific roles of PE at these levels: learning, improvement of movement habits and skills, development of fitness and coordination physical abilities, knowledge acquirement and, last but not least, creation of a permanent positive attitude towards physical activity. Kraut et al. (2003) point to the fact that regular participation in physical activities organized by schools has an influence on children and will have positive effects also later on in the adulthood.

The implementation of tasks resulting from the aims of PE depends on the conditions – content, abilities of students, ability of a teacher, their experience, age, flexibility, knowledge, etc. Antala (2009) takes a view that children do not take PE classes as seriously as they should and they are losing popularity. Prachař (2016) has the same opinion. He claims that PE has the lowest popularity compared to other subjects. He also points to the fact that children are weaker and idler.

However, Biddle, Mutrie (2001), Pavelková (2002), Antala et al. (2012) say that the opposite is true. According to them, PE and sports is at the forefront of children's interests and they have a positive attitude towards the classes. For example, Görner, Starsi (2001) carried out a survey in particular schools in both rural and urban areas. Based on a sample consisting of more than 890 children, he found out that they (55.74 % of girls and 53.40 % of boys) had mostly a positive attitude towards PE. Bartik (2009) used a sample of 826 boys and 780 girls. He found out that more than 40 % of them had a positive attitude towards PE classes. Balga, Antala (2015) also examined children's attitudes towards PE. Based on a sample of 433 girls, they discovered that their attitudes were mostly positive, with the survey response frequency of 59.35 %. Adamcak, Bartik (2014) found out that 57.85 % out of 642 boys and 47.29 % out of 645 girls have a positive attitude towards PE classes. This positive attitude is very important, because as Simonek (2006) and Sigmund, Sigmundova (2011) mentioned, PE is the only class where most of the children participate in physical activities. It is important to realize that their interests regarding physical activities differ from the interests of adults. Loksova, Loksa (1999) state that if pupils and students have enough intrinsic motivation, they are more successful and active in all their classes, and therefore they are more likely to attend school, resulting in a lower absence rate.

We learn more about pupils' and students' absence in PE classes from works written by many experts in the field. Sallis et al. (1999) pointed out in their study of children and teenagers from age 10 to 18 that the number of pupils and students who do not exercise regularly in PE classes is increasing. Slezak (2005) surveyed various high school students and determined that 2737 out of 8640 boys and 3953 out of 7836 girls did not participate actively in PE classes. The main reasons why pupils and students did not exercise in PE classes were movement disorders, cardiovascular and spinal diseases, and 36.8 % of girls forgot to bring their PE kit, and therefore could not exercise. Balga, Kovalcikova (2018) point out, that the most common reason why children did not exercise during PE classes was either illness, forgotten PE kit or they were preparing for another class. What is more, a certain number of pupils and students did not want to exercise, because they do not find the content interesting. Simonek (2011) and Medekova (2012) confirm it in their studies as well. According to Kremnický (2019) the popularity of PE classes depends on the content, teaching styles and the classroom group. Sallisa et al. (2001) claim that children expect a feeling of satisfaction after a physical activity in a friendly atmosphere. Cheben (2006) correctly states that the appropriate form of motivation still remains the dominant factor in creating a positive attitude towards PE, sports and regular physical activities. Standage et al. (2003) consider intrinsic motivation as the key aspect. Mazala (2007) claims that a cheerful atmosphere is crucial for creativity and success in every class. Miko (2008) points out that a PE teacher should know everything about sports and human science. They should have wide knowledge, which requires theoretical and practical versatility. At the same time, Miko (2008) adds, that if a teacher wants to impress and influence children, they have to be role models and they have to work hard on themselves all of their lives. Cothran et al. (2000) mention that PE classes with the same content,

however taught by different teachers who have different teaching styles could be viewed differently by the children.

PE and sports is an undoubtedly important aspect of the education system. It is a broad field continuously studied from various points of view by PE teachers and education experts. The study focuses on pupils' and students' opinions that can help with finding solutions to make PE classes more attractive, popular and interesting for today's young people.

## **2. Materials and methods**

The aim of the study was to find, analyse and compare opinions of primary school pupils and secondary school students on PE classes in Slovakia.

We used the random sampling method when selecting the research sample. We randomly selected 21 cities from different regions of Slovakia and within them we also randomly selected 50 primary and 50 secondary schools. In total, 6959 respondents from all over Slovakia were involved in the research. There were 3606 primary school pupils (1720 girls and 1886 boys) and 3353 secondary school students (1660 girls and 1693 boys). Pupils from the 8<sup>th</sup> and the 9<sup>th</sup> grades in primary schools (689 girls and 744 boys from the 8<sup>th</sup> grade, 1031 girls and 1142 boys from the 9<sup>th</sup> grade), as well as students from the 3<sup>rd</sup> and the 4<sup>th</sup> grades in secondary schools (524 girls and 652 boys from the 3<sup>rd</sup> grade, 1136 and 1041 boys from the 4<sup>th</sup> grade) were deliberately included in the survey.

Average age of boys from primary schools was 14.32 years  $\pm$  0.35 years and girls was 14.28 years  $\pm$  0.39 years. Average age of boys from secondary schools was 18.22 years  $\pm$  0.25 years and girls was 18.56  $\pm$  0.38 years.

Figure 1 presents the primary characteristic of the respondents of the research.

The main research method was questionnaire survey created by authors of this article. The questionnaire consisted of 9 questions. The validity and reliability of the questionnaire was verified in the framework of the pre-research (Adamcak, Bartik, 2014; Adamcak et al., 2017).

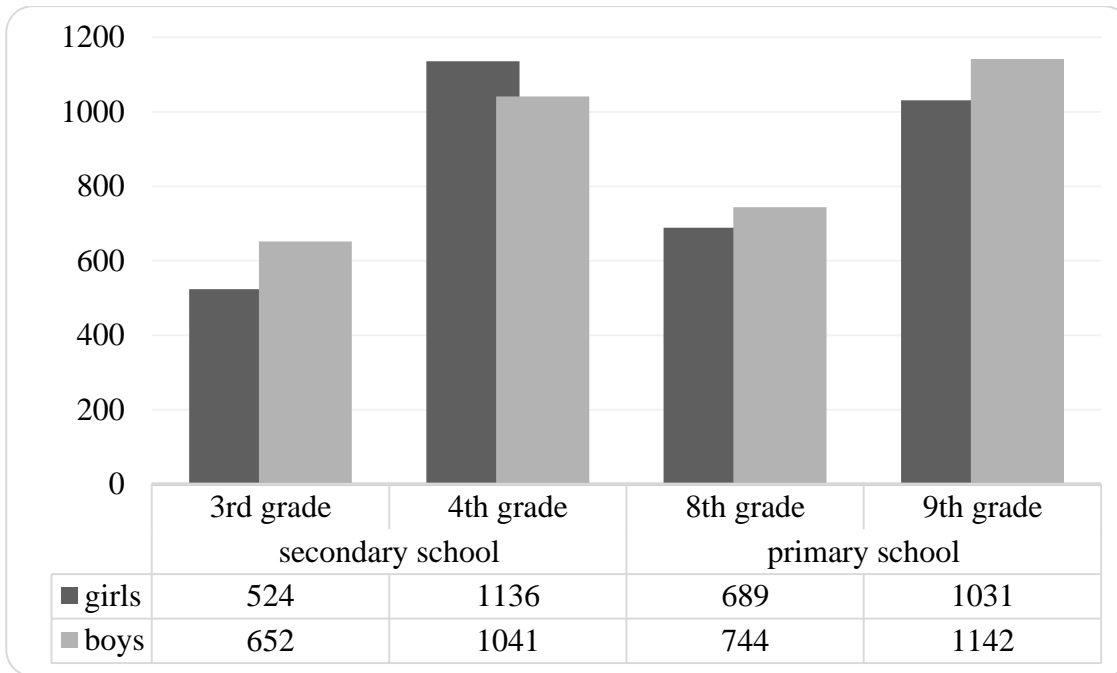
The questionnaire in electronic form was distributed to 50 primary and 50 secondary schools, which were selected by random selection from 21 cities from different regions of Slovakia. Data collection was carried out electronically in cooperation with teachers at the monitored schools. The survey was conducted during the school year 2018–2019.

Data analysis – respondents' responses were evaluated from two aspects:

- 1 / – gender differences in opinions (female and male);
- 2 / – age differences in opinions (primary and secondary schools).

The results were expressed as a percentage number. The statistical analysis was performed using the TAP 3 software.

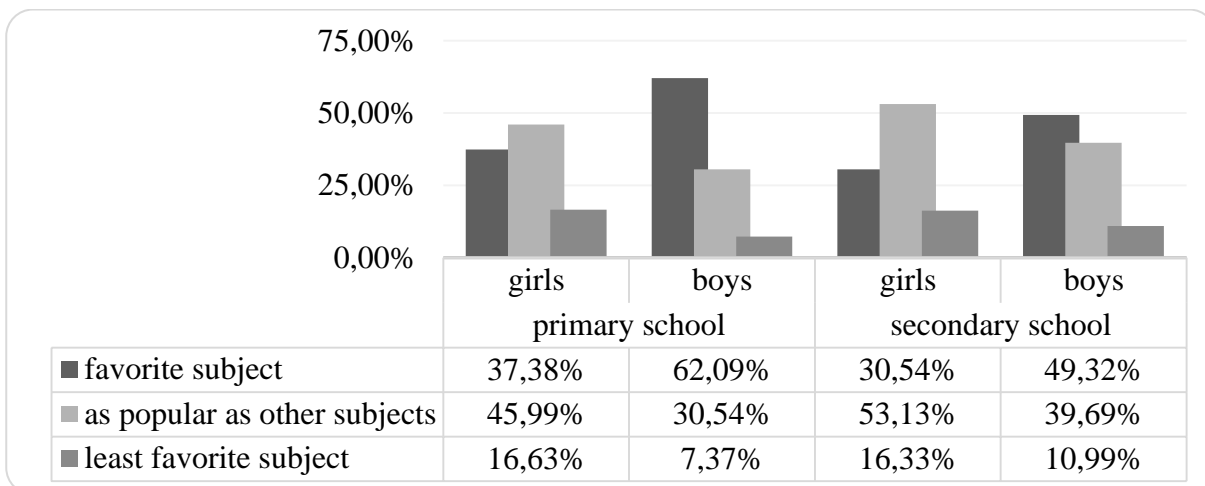
Using the Chi-square test we investigated the statistical significance of the differences in the answers to the individual questionnaire questions, which were used to determine the views on Physical education classes between primary and secondary school pupils and also between boys and girls. We found statistical significance at 1 % and 5 % statistical significance levels.



**Fig. 1.** Research sample (n = 6959)  
Source: own

### 3. Results

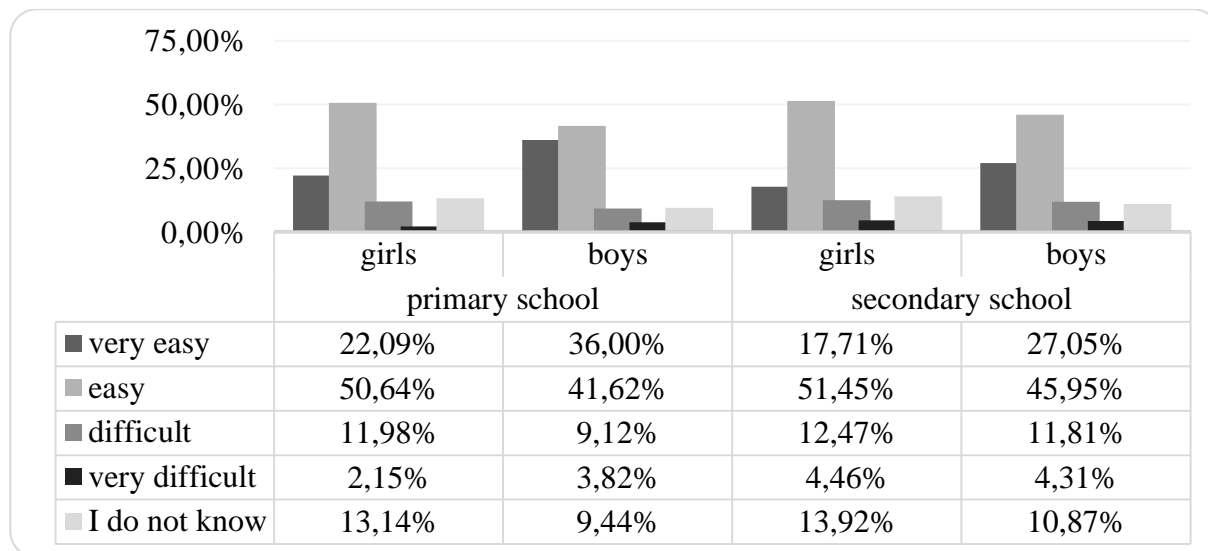
It was found that the popularity of PE declines with age. The main question was how many pupils and students consider PE as their favourite class (Figure 2). In comparison with secondary school students the average score in elementary school was higher (37.38 % of girls and 62.09 % of boys). At the same time, it was found that there are 10.99 % of boys in high school who consider PE "the least favourite subject". Comparison of results in terms of sex and age differences points to the significant difference with p value  $p < 0.01$  (Table 1).



**Fig. 2.** Popularity of PE and sports  
Source: own

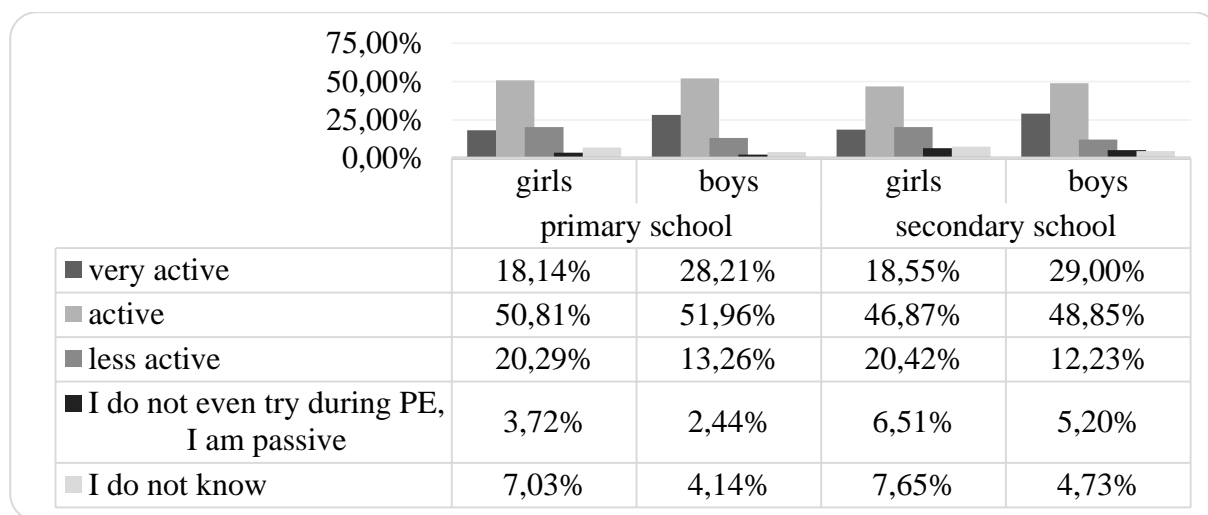
The indicator of difficulty of PE implies that children think the difficulty of PE classes is increasing. Answers "difficult" or "very difficult" had a higher average score (Figure 3). On the other hand, girls and boys in primary schools frequently answered that the classes are "very easy". It was also unexpected to find out that 13.92 % of secondary school girls and 10.87 % of secondary

school boys answered "I do not know". Sex and age differences were again significant on p value  $p < 0.01$  (Table 1).



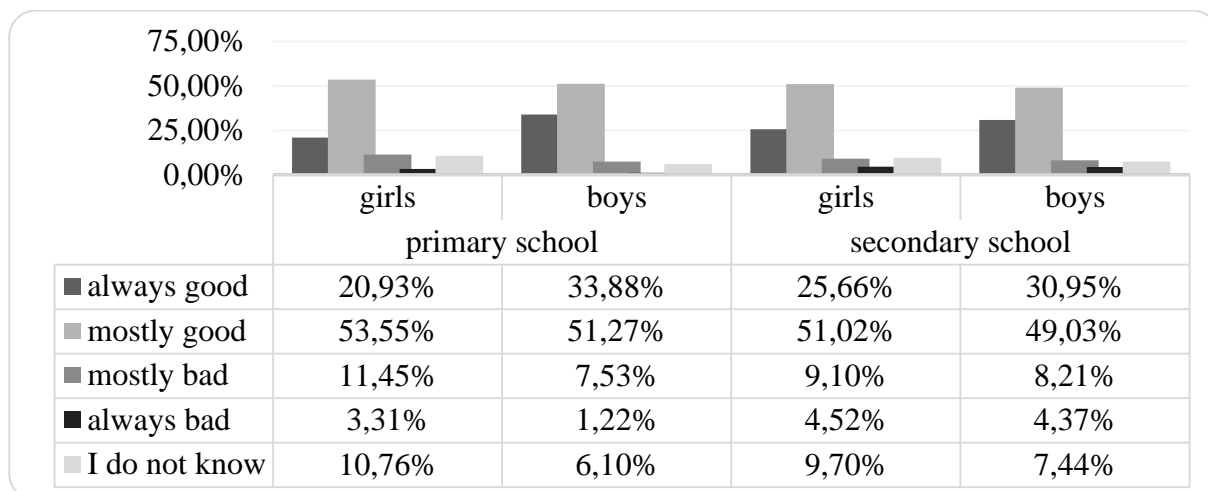
**Fig. 3.** Difficulty of PE and sports from the students' point of view  
Source: own

The following facts were discovered from the self-evaluation activity during PE classes. A higher average score was noticed in answers "I do not even try during PE, I am passive" by secondary school girls (6.51 %) and boys (5.2 %). Students (boys and girls) had a higher average score in an answer "very active". The answer "active" was dominant in the group of girls (50.81 %) and in the group of boys (51.96 %) in primary schools (Figure 4). There were significant differences in terms of sex and age at  $p < 0.01$  (Table 1).



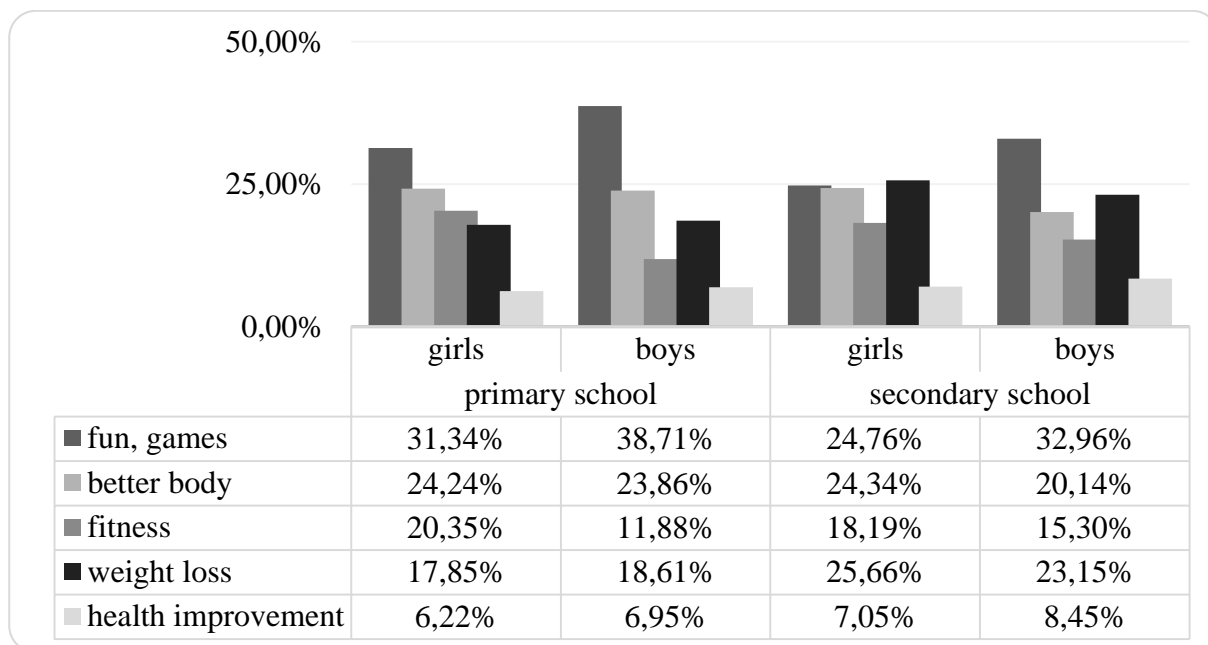
**Fig. 4.** Self-evaluation of activity in PE classes  
Source: own

From the emotional point of view, a good feeling during PE classes dominates in both groups (boys and girls) and in both schools (primary and secondary). More than 50 % of respondents said that they always or mostly feel good during PE classes. The answer "always bad" had a higher average response score in the group of girls (4.52 %) and in the group of boys (4.37 %) in secondary schools. On the average 11.84 % of respondents could not definitely answer the question (Figure 5). There were significant differences in terms of sex and age on  $p < 0.01$  (Table 1).



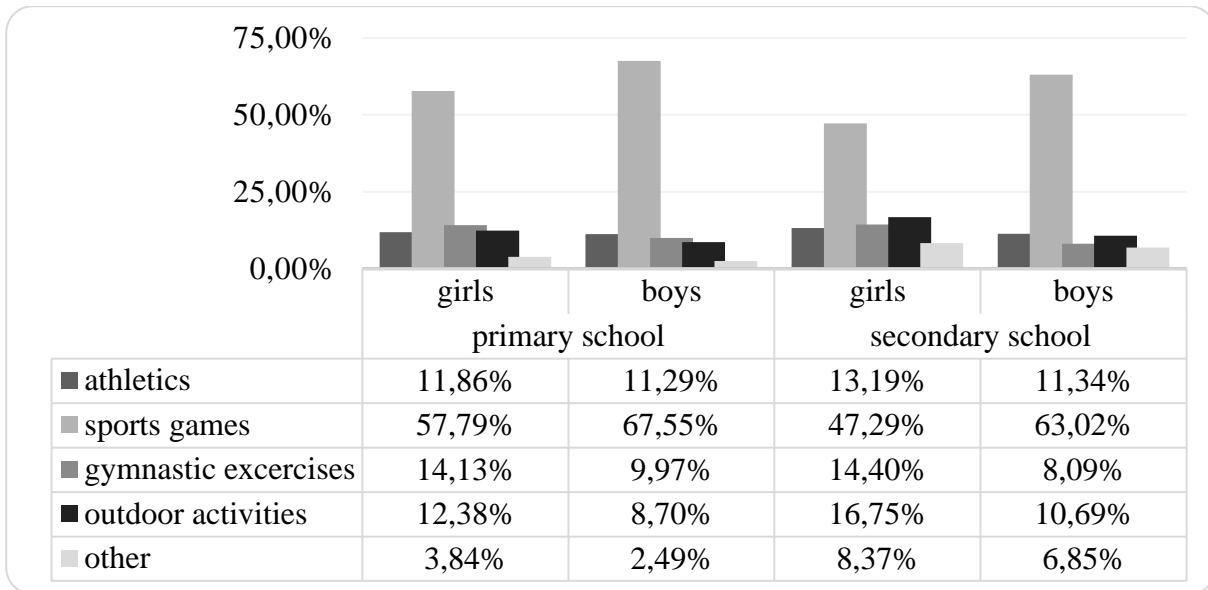
**Fig. 5.** Emotional aspect in PE classes from the student's point of view  
Source: own

In the following question, we focused on the principal physical activity in PE classes. An opportunity to exercise while playing sport games and having fun had the highest response score (Figure 6). The survey response frequency was higher than 24 %. The second strongest motivation for exercising in PE classes for all respondents was to get a better body, with the survey response frequency of more than 20 %. The answer "health improvement" had the lowest average score – 9 %. Again, there were significant differences in terms of sex and age on p value  $p < 0.01$  (Table 1).



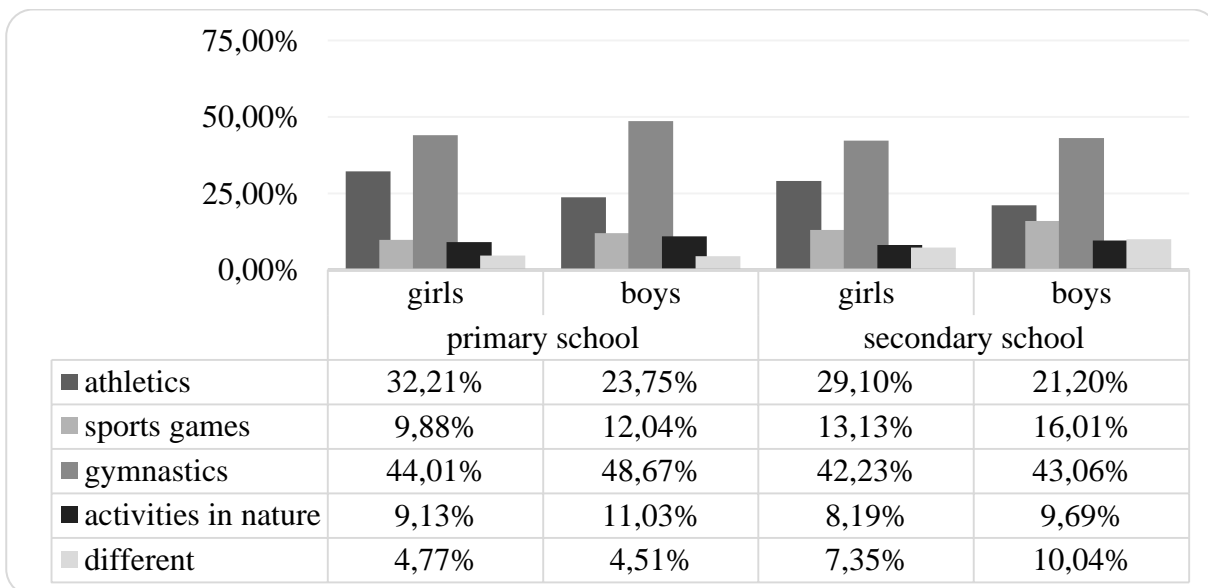
**Fig. 6.** The principal activity in PE classes  
Source: own

Playing sports games during PE classes is the "most favourite" activity among all the children with the highest average score (Figure 7). There were significant differences in terms of sex and age differences (Table 1).



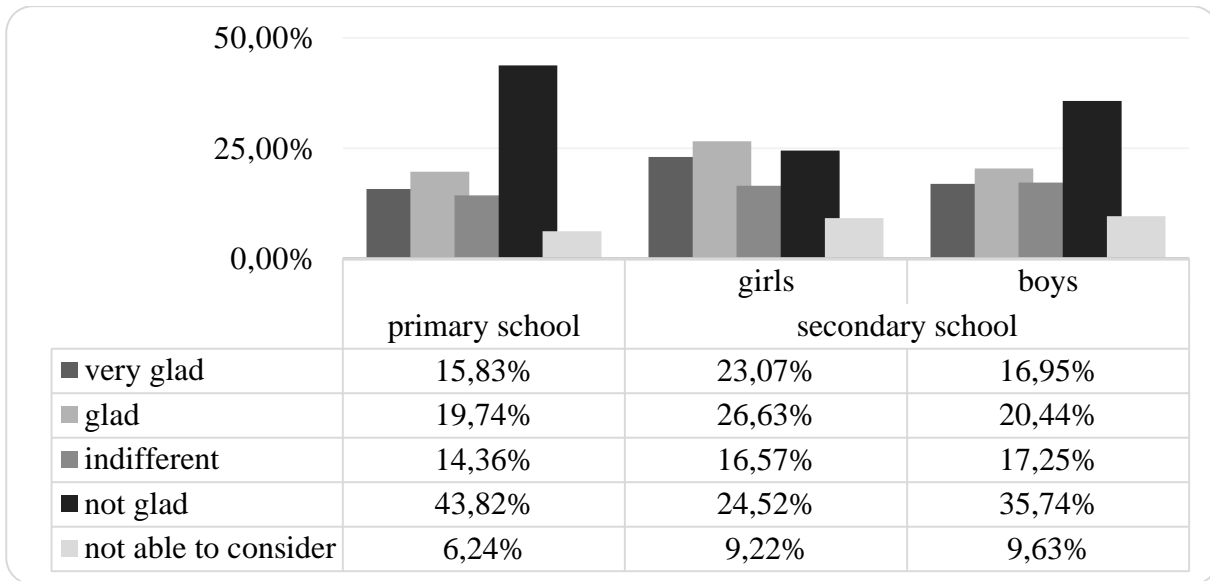
**Fig. 7.** The most favourite physical activity in PE classes  
Source: own

"Gymnastic exercises" have the highest average score in terms of the least favourite physical activity in PE classes (Figure 8). The survey response frequency reached 42 % among all the children. The second least favourite physical activity was "athletics". There were significant differences in terms of sex and age differences (Table 1).



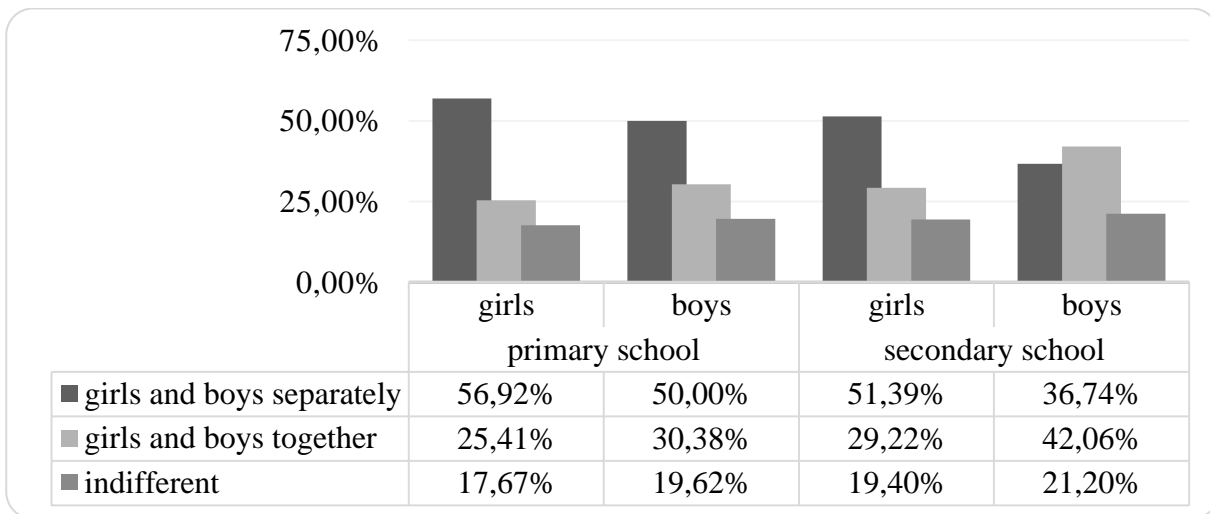
**Fig. 8.** The least popular activity during PE classes  
Source: own

Inquiry includes a question about respondents' opinion on cancelling the PE class for various reasons. As Figure 9 shows, mostly girls in both primary and secondary schools answered that they are "glad" when PE classes are cancelled. On the other hand, 54.35 % boys asked in primary schools are "not glad". Out of all the asked pupils and students, 15.69 % said they are "indifferent". Reciprocal answer confrontation demonstrated differences in terms of sex and age at p value  $p < 0.01$  (Table 1).



**Fig. 9.** Respondents' opinion on cancelled PE class  
Source: own

The last survey question is related to the children's opinion on co-educational PE classes. The results show that 42.06 % boys attending secondary schools would like to have co-educated PE classes (Figure 10), in contrast, girls attending primary schools prefer classes without boys (56.92 %). There were significant differences in terms of sex and age on p value  $p < 0.01$  (Table 1).



**Fig. 10.** Respondents' opinion on co-educational PE classes  
Source: own

**Table 1.** Statistical evaluation of answers

Figure	PS/SS (Chi p value)		PS B/G (Chi p value)		SS B/G (Chi p value)	
2	xx	1.199E-76	xx	6.268E-51	xx	1.160E-27
3	xx	6.055E-29	xx	4.809E-21	xx	5.211E-09
4	xx	4.940E-36	xx	1.896E-17	xx	4.019E-18
5	xx	1.755E-20	xx	3.767E-23	xx	0.00529
6	xx	2.079E-52	xx	7.626E-42	xx	2.98E-13



7	xx	1.094E-15	xx	2.551E-11	xx	5.571E-07
8	xx	1.251E-27	xx	7.075E-09	xx	1.358E-19
9	xx	5.977E-13	xx	5.928E-07	xx	5.262E-07
10	xx	9.977E-19	xx	0.000133	xx	2.683E-18

Source: own

Explanatory notes: PS = primary school, SS = secondary school, B = boys, G = girls, xx = statistical significance –  $p$  value < 0.0; x = statistical significance –  $p$  value < 0.05; n = statistically non-significant

#### 4. Discussion

Research proved the fact that PE is the most popular or one of the most popular subjects in schools. This popularity was confirmed by Kollarik et al. (1992), when they found PE as being the most popular subject within students starting secondary schools. Additionally, it was the only subject which was evaluated positively. The study results closely correlate with Biddle, Mutries' study (2001). They found that boys from the 5<sup>th</sup> to the 9<sup>th</sup> grade consider PE as their favourite subject. On the contrary, girls' interest in PE declines with age. Pavelkova (2002) conducted a survey on a sample of 428 students and 267 teachers, the results show that boys view PE classes more positively than girls. According to Antala et al. (2012) 46.5 % of boys in secondary schools consider PE to be their most favourite subject and 35.1 % classified it as favourite. As stated in Carlson's study (1995), repetition of the same sports activities is considered to be one of the key factors why students lose interest in PE classes. In the research conducted by Antala et al. (2012), 1/3 of surveyed pupils and students (girls and boys at primary schools, n = 817; girls and boys at secondary schools, n = 1130) consider PE classes as uninteresting, because they do not find the content engaging. Fotynyuk (2017) studied physical condition within first grade students (n = 86) aged 16-19 years. He states 41 % of these students have a poor physical condition, which is caused by lack of motivation to participate in PE classes. Students' motivation is closely related to the teacher's personality. Jansa et al. (2012) researched a sample of 1885 PE students in their final year of university. Almost 50 % of them want to work in a different field. It follows that there are just a few young teachers. Pacholik (2012) points out the positive correlation between the length of teaching experience and type of temperament. That is to say, the longer one's teaching experience is, the more phlegmatic they are.

Antala et al. (2012) also state that most of the pupils in primary schools, as well as secondary schools consider PE to be an undemanding subject. In general, girls find PE classes more difficult than boys and few students say it is very difficult. These facts are very similar to those seen in this research.

Simonek (2011) points out that teachers' influence is decreasing, and therefore they are not able to deal with children who refuse to participate in class. This research shows passivity of the students in PE classes increases with age. In secondary schools, it is getting close to 7 %. It follows that for this group of students PE classes are the only place where they do any physical activity. This problem is also discussed in studies of Gallahue, Donnelly (2003) or Graham et al. (2004). Slezak (2004) carried out research focused on the number of pupils that do not exercise during PE classes in primary schools in Slovakia. The research shows that 45.8 % of girls and 33.8 % of boys do not participate in physical activities during PE classes due to their health problems. According to Pavelkova (2002), children who tend to be bored are usually the ones whose knowledge and skills exceed the school's requirements. This means they are not engaged in the process as much as others. Their research also shows, that in comparison with Maths or Biology, students experience boredom during PE classes less often (the average score was 1.64 out of 5).

More than 70 % of asked pupils and students said they always or mostly feel "good" during the PE classes. The results correspond with findings of Antala et al. (2012). They show that 2/3 of asked pupils and students are feeling always or mostly "good" during the PE classes. Additionally, the difference in their feelings was statistically significant at  $p$  value < 0.001. The older pupils and students are, the more negative the feelings they have towards PE classes. In terms of the affective and cognitive component of children's attitude to PE, Subramaniam, Silverman (2007) came to the conclusion that the affective component decreases with age. This phenomenon is connected with

repetitiveness of PE classes. Every year, they have the same content, and therefore pupils lose interest in PE by the time they reach the 9<sup>th</sup> grade. This tendency was not detected in this research, although the response rate of the option "always unpleasant" increased in secondary school students' responses. Moreover, the study of Phillips, Silverman (2015) also shows decreasing motivation to participate in PE classes. Donnelly et al. (1997) claim motivation to be closely connected to feelings. Feelings are an engine for motivation. This double-sided relation was proved by research of Nakonecny (1996), Armstrong (2007), etc.

Antala et al. (2012) state that it is necessary to increase awareness about the effects of physical activity on health. There were 9 % of respondents who claimed that their main motive to actively participate in PE classes was to improve their health. The author adds that the activity is possible only with coordination of more subjects; such as educational institutions, communities, central government authorities or third-level institutions. According to Suggs, McIntyre (2011), the legal, political and economic environment plays an important role. It can promote and put preventive programmes for the support of healthy lifestyle into practise.

The study of Ilnitskay et al. (2014), conducted on a sample of 800 students from Ukraine, Russia and Belarus shows their main motive for exercising is the pursuit of a beautiful figure. The secondary motive is the motive of health and physical fitness. Stacke's research (2008) points out that the main motivation for exercising in fitness centres is weight loss. Similarly, the main motive for physical activity in the age group under 20 appears to be body shape. The fact was detected by authors Lenkova et al. (2009). Battistelli et al. (2016) created BREQ and MPAM-R questionnaires. The sample of 1995 students (997 boys and 998 girls; average age 15.6 years old) answered that their main motive for physical activity was fitness and sports activities rather than the physical appearance. Similar research was done by Vasickova (2016) in the Czech Republic, as 1316 students participated in the research (916 girls and 400 boys; age average 16.69 years old). They stated their main motive for physical activity was fitness and secondary sports. The overweight girls were mostly concerned with physical appearance. Zacharova (2012) states that adolescent girls have a need to look pretty. They view it as their mission that has to be accomplished in order to feel confident. They see their role models such as models, singers and actresses.

Tillinger's study (1994), which used the sample of 378 pupils in Czech Republic primary schools, proved a significant influence between the content of the PE classes and the pupils' relationship to the subject. Non-athletes prefer sports games (58 %), athletics (13 %) and gymnastics (12 %), whereas the athletes prefer athletics (56 %), sports games (26 %) and gymnastics (13 %). The least popular activities within non-athletes are gymnastics (34 %), hiking (19 %), combat sports (15 %) and athletics (15 %). On the other hand, activities that are least preferred by athletes are combat sports (42 %) and gymnastics (28 %).

The results of this research are supported by claims of these experts: Bebcakova (1998), Adamcak, Nemeč (2010), Nemeč, Nemečová (2012), Stranavska, Gorner (2018), Dlouhy et al. (2018), Kaminska et al. (2018). Their works mostly focus on the interest of pupils in terms of the popularity of physical activities on the PE classes. However, Novotná et al. (2009) conducted a survey on 354 of the 4<sup>th</sup> graders from primary schools in Banská Bystrica region. These pupils had a low interest in sports games. Antala et al., (2012) obtained similar results in their research. From the group of 417 boys from primary schools, 37.1 % consider sports games as their least favourite PE class activity, and 26.6 % out of 400 girls as their second least favourite PE class activity. The research also showed that for 32.9 % of girls the least popular activity in PE classes was gymnastics. This fact corresponds with our findings. However, the research did not deal with the question of the most favourite PE class activity. The increasing popularity of PE classes is related to their content, which is shown in the study of Sigmund et al. (2009). They used a sample of 2213 girls from the Czech Republic and Poland aged 13-17 years. The content of classes was changed from athletics and gymnastics to sports games, dancing and aerobic, which led to the popularity increase. Hastie et al. (2011) point out the positive influence of playing sports games, mainly on harmony between technical and tactical skills in games.

Antala et al. (2012) noted that 30.4 % of primary school pupils are glad when the PE class is cancelled, 26.4 % of them are indifferent and 43.1 % of them are unhappy. Secondary schools results are even more negative; 53.2 % of the students are glad when the PE class is cancelled, 29.3 % of them are indifferent and 17.5 % of them feel unhappy. According to Ryan (2004), there are negligible differences between the boys' and girls' results in co-education. The co-education

also does not have a bad influence on the educational process. Antala et al. (2012) noted that 77.2 % of primary school pupils and 61.6 % of secondary school students claimed that the PE classes should be taught separately. In contrast, our research showed a lower frequency of this opinion. There are 38.4 % of students in secondary schools that believe that co-education is a good idea. Puberty and attraction to the opposite sex play a big role in this case. These differences were statistically significant at  $p < 0.001$ .

## 5. Conclusion

Pupils' and students' opinions on PE classes are very important for identifying the physiological-psychological information (such as fitness, mental state, etc.). This information can help to solve the key problems in the school system, which can still be found even after the school reform. It is important to realise that regular involvement of pupils and students in PE classes is not assured only by the fact that PE is an obligatory subject. The number of pupils who do not exercise during classes is increasing. Pupils' attitude towards PE classes is often indifferent. In the longer term, it is important to provide students with interesting content in PE classes. A lot of pupils are not motivated unless new, less traditional games and sports activities are taught. Teachers need to not only find a way in which to deal with new trends and present them to pupils and students, but also figure out how to make PE popular now as well as in the future.

## 6. Acknowledgements

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