

PHYSICAL EDUCATION LESSONS AND PRIMARY SCHOOL STUDENTS' FREE TIME

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Abstract. The aim of the research was to clarify if the attitude towards obligatory physical education classes differentiates psychical activity of primary school students in their free time. The method used in the research was a diagnostic survey, which included a shortened version of the HBSC questionnaire. 371 students (4th-6th graders) of primary school living in both urban and rural areas were questioned. Activities declared most often were: ball games, cycling, swimming, and running. Students who spent the biggest amount of time on outdoor activities were girls who eagerly participated in physical education lessons and boys who participated "although they didn't really want to" or "because they had to".

Key words: lesson, free time, physical activity

Introduction

Modern theoreticians of Physical Education agree that one of effects of PE lessons is students' willingness to be physically active in their free time, as well as after they complete their education (Demel 1998; Frołowicz 2002; Grabowski 2000; Osiński 2011). H. Grabowski (1999) highlights the fact that the role of every field of education is twofold: on one hand, it prepares students to accept and enrich the achievements in a particular field of culture, on the other – it stimulates development. In this context, the sum of school-based and non-school physical activity should stimulate the physical development of the young generation. In terms of physical education, stimulating the physical development by improving the body condition is very important, as effects of neglecting the needs of a developing body are irreversible (Grabowski 1999). Promoting a positive attitude towards physical activity has been one of the key aims of Physical Education curricula in all Polish schools since the 1950s. (Bukowiec 1990). It was also one of the aims of Physical Education stated in the core curriculum of general education in 1999 and 2008 (Podstawa programow 2007; Podstawa programowa 2008).

According to B. Woynarowska (2008), physical activity together with healthy nutrition, is one of the basic human needs and plays a key role in maintaining and improving health at all stages of life. Physical activity includes actions related to physical effort (muscle work) which trigger an increased heart rate and breathing, generate sense of heat and often sweating. Research on positive impact of physical activity on health has been analyzed by, inter alia, J. Drabik (1995, 1996). Specialists on development of primary school students agree that exercise is a key element of bio-psycho-social development (Drabik 2006; Drabik et al. 2010; Drozdowski 2002; Hurlock 1960; Osiński 2003; Przewęda 1981; Wolański and Prizkowa 1976; Woynarowska 2008).

Being teachers who focus on the issue of physical education, we asked ourselves the following questions: What do primary school students do in their free time? Does their attitude towards participation in mandatory PE lessons at school differentiate their physical activity in their free time?

Aim, method and scope of the research

The research focused on the participation of students in mandatory Physical Education classes and their leisure activities. The aim of the research was to determine a relation between attitude towards participation in PE classes and the scope of physical activity in the free time of primary school senior students.

The research was conducted according to the schema of review research. Empirical data was gathered by diagnostic poll method, using a shortened version of the HBSC questionnaire (Health Behavior in School-Aged Children).

The research was conducted in October 2010 and included 371 students (4th–6th graders) from three schools in Włocławek and surrounding area. Among subjects, there were 182 boys (49%) and 189 girls (51%). 103 of students were 4th graders, 151 of them attended the 5th grade and 117 of them were 6th graders. 184 of subjects went to urban schools and 187 attended rural schools.

Results

Table 1. Primary school senior students' declarations on their participation in PE classes, based on sex (%)

Sex	1	2	3	Total
	yes, willingly	yes, but...	no	
Boys (N = 182)	91.2	7.1	1.6	100.0
Girls (N = 189)	78.8	19.0	2.1	100.0
Total (N = 371)	84.9	13.2	1.9	100.0

The question “Do you participate in PE classes?” (Table 1) was answered “Yes, willingly” by 85% of students (Column 1). This response was more common amongst boys than girls. A little over 13% of students stated that they participated in classes “although they didn’t want to” or “because they had to” (Column 2). These responses were more popular amongst girls. A small minority (approx. 2%) stated that they did not participate in PE classes at all.

School location (urban vs. rural) did not impact attitudes of students towards participation in PE classes, contrary to students' age. Over 90% of 4th graders declared a willing participating in PE classes. The older the children, the higher proportion of students who participated in PE classes “although they didn’t want to”, “because

they had to", or did not participate at all. The proportion of such students amongst 6th graders was twice the number of non-participant amongst 4th graders.

A little over 20% of students who declared willing participation in PE classes stated that these were their only physical activities during a week. Amongst students who participated in PE classes "although they didn't want to" or "because they had to", there was a higher proportion of students who declared participation in additional physical activities (apart from PE classes). It is, therefore, possible, that lower willingness to participate in PE classes did not mean that these students tried to avoid physical activity; perhaps PE classes simply did not meet their expectations.

Drawing further conclusions, however, needs to be very cautious. HBSC questionnaire, which is a quantitative research method, does not allow us to provide an in-depth analysis of the obtained results. It is not entirely clear how students interpreted the notion of "additional physical activities". Some subjects might have understood it as classes organized e.g. in a local club. Thus, lack of participation in "additional physical activities" does not need to equal zero physical activity, such as spontaneous activities with peers.

Attitude of primary school girls towards participation in PE classes did not impact their declarations about their non-school physical activity. Over 85% of school girls stated that they participated in additional physical classes.

Primary school boys – more often than girls – declared that they participated only in school-based physical activities (over 25% of responses). Those who declared participation in PE classes "although they didn't want to" or "because they had to", stated that they participated in non-school physical classes more often. The above-mentioned assumption that PE classes did not meet expectations seem to be more justified for boys than girls (as far as the reservations about inability to draw in-depth conclusions allow).

Students of rural schools declared participation in non-school physical activities less frequently than their urban counterparts. This response was given by approximately 75% of students. Rural students who declared participation in PE classes "although they didn't want to" or "because they had to", stated that they participated in non-school physical activities more often. The assumption that PE classes did not meet students' expectations may be more justified for rural students (as far as the above-mentioned reservations permit).

Table 2. Primary school senior students' declarations on types of their activity in their free-time (%)

Attitude to participation in PE classes	Ball games	Cycling	Swimming	Running	Walking the dog	Walks	Dance	Tennis	Skiing	Gymnastics
Yes (N = 315)	80.0	74.0	47.3	41.0	36.2	32.1	25.1	10.5	5.1	3.8
Yes, but... (N = 49)	46.9	57.1	38.8	16.3	38.8	40.8	14.3	2.0	4.1	4.1
No (N = 7)	14.3	28.6	28.6	14.3	42.9	71.4	0.0	0.0	0.0	0.0
Total (N = 371)	74.4	70.9	45.8	37.2	36.7	34.0	23.2	9.2	4.9	3.8

The most common responses were "ball games" (almost 75%) and cycling (over 70%) (Table 2). Swimming was reported by 45% of subjects, while running by approximately one-third. Almost the same proportion of students declared walking (over 37%) and walking the dog (34%) in their free time. It is hardly surprising that students who did not participate in PE classes declared non-strenuous physical activities, such as walking (over 70%). It is,

however, noteworthy that almost 30% of these students declared cycling and swimming. Every seventh student who was excused from PE classes declared playing ball games and running in their free time. What combination of decisions and actions taken by PE teachers, school headmasters, parents and students themselves lead to their lack of participation in PE classes?

Students who declared willing participation in PE classes took up more intense physical activities than their peers who participated in PE classes “although they didn’t want to” or “because they had to”, such as: ball games (80% versus 47%), cycling (74% versus 57%), swimming (47% versus 39%), and running (41% versus 16%).

Analysis of boys’ declarations on their free time activities lead to similar conclusions. Notably, boys who did not participate in PE classes tended not to take up intense physical activities outside of school. Two out of three boys confirmed that they only walked, and one out of three walked the dog and played with it.

Similarly to boys, most of girls confirmed their non-school activity in the form of cycling and ball games (respectively 81% and 78%). Running was reported by less than a third of girls (versus 44% for boys). More girls than boys reported dancing classes (40% versus 5%). Half of the girls who did not partake in PE classes stated that their out-of-school activities included cycling; the same proportion reported swimming. One in four girls reported ball games, and the same number confirmed running. It seems that schools should find a way to activate these students during PE classes.

Table 3. Average number of minutes spent by primary school senior students on various activities versus their participation in PE classes

Attitude to participation in PE classes	School days		Days off school	
	sedentary activities	outdoor activities	sedentary activities	outdoor activities
Yes (N = 315)	420	220	546	306
Yes but... (N = 49)	426	192	552	288
No (N = 7)	396	132	498	180
Total (N = 371)	420	210	546	300

Primary school senior students declared that sedentary activities took up 7 hours of their time on school days, while a little over 9 hours on days off school (Table 3). Additionally, these students devoted 3.5 hours to outdoor activities on school days, and 5 hours on days off school. Students who willingly participated in PE classes and those who took part “although they didn’t want to” or “because they had to” declared similar amount of time spent on non-physical activities. Outdoor activities were most popular among students who willingly participated in PE classes: they took up approximately half an hour on school days and 20 minutes on days off school. Students who did not participate in PE classes spent less time on outdoor activities than those who participated in PE classes: approximately 1.5 hour less on school days and approximately 2 hours less on days off school.

These tendencies were visible for students from urban and rural schools alike.

Boys who willingly participated in PE classes spent approximately 1.5 hour less on sedentary activities (both on school days and days off school), compared to students who participated in PE classes with reservations. Both groups devoted the same amount of time to outdoor activities on school days. On days off school, students who willingly participated in PE classes, spent almost an hour more on outdoor activities. Boys who did not participate

in PE classes spent over half an hour less on outdoor activities on school day, compared to their peers who participated in PE classes. On days off school, students who did not participate in PE classes, spent the same amount of time on outdoor activities as those who participated in PE classes “although they didn't want to” or “because they had to”.

According to their declarations, girls devoted less time than boys to sedentary activities: approximately half an hour less on school days and two hours less on days off school. On school days, girls spent more time than boys on outdoor activities (20 minutes more), while on days off school the difference was close to one hour.

Girls who participated in PE classes spent more time on sedentary activities, compared to girls who did not participate in PE classes: approximately 1.5 hour more on school days and over half an hour on days off school. Girls who claimed that they willingly participated in PE classes, devoted approximately half an hour more to outdoor activities on school days and days off school than girls who participated in PE classes “although they didn't want to” or “because they had to”. Compared to girls who did not participate in PE classes, they spent approximately 2 hours more on school days and over 3 hours more on days off school.

According to students' declarations, 6th graders devoted the highest amount of time to sedentary activities, both on school days and days off school (which is over an hour more compared to 4th graders). All grades devoted the same amount of time to outdoor activities on school days. As for days off school, 5th graders spent most time on outdoor activities (which is over an hour more than 6th graders). In the 4th grade, the highest amount of time was spent on outdoor activities by students who participated in PE classes “although they didn't want to” or “because they had to”. On school days the difference was 1 hour more, on days off school: almost 2 hours more. In the remaining grades, the biggest amount of time was spent on outdoor activities by students who willingly participated in PE classes.

Summary and discussion

According to modern recommendations, physical activity of children and adolescents aged 5–17 should include at least 60 minutes of medium to high intensity physical effort per day. Most of this activity should be aerobic. Every day one should include a 5-minute high-intensity exercise, which is aimed at total mobilization of aerobic functions. Exercise which stimulates the development of endurance and muscle power should be practiced at least 3 times per week (Department of Health 2004; Global Recommendations 2010; Woynarowska 2008; Woynarowska and Wojciechowska 1993; Wytuczne UE 2008).

A comparative analysis of organization and execution of Physical Education process in Poland and other European countries suggested that a Polish student in primary school tends to have more mandatory PE classes (Pośpiech 2006). Nonetheless, a comparison of everyday physical activity in selected European countries indicated that Polish students are not more active than their peers in other countries (Table 4).

One of the contributing factors is high absence rate of students in PE classes. According to the Polish Supreme Chamber of Control's (NIK) report, number of students absent or inactive during PE classes at school reaches the level of almost 20%. This proportion increases at the subsequent stages of education, reaching 35% in senior high school (Buczyński 2010). Additionally, participation in PE classes does not provide a sufficient physical strain. Various research conducted in Poland suggested that average heart rate of students participating in PE classes does not exceed the stimulation threshold for endurance development in this age group (Bronikowski

2008; Pańczyk 1999). Similar conclusions follow other research conducted in Europe (Stratton 1997) and beyond (Simons-Morton 1993).

Table 4. Time of mandatory PE classes and students' activity in selected European countries

Country	Minutes of PE classes per week	Students who participate in physical activity at least 5 times per week for 60 minutes (in %)
Poland	180	70
Germany	90–135	67
Spain	100	65
Austria	90	83
Czech Republic	90	86
Norway	90	90

Source: (Bronikowski et al. 2008)

Primary school senior students are obliged to participate in 4 hours of PE classes per week. It is more than what students in majority of European countries face (Pośpiech 2006; Tomik and Pośpiech 2010). Over 90% of boys and almost 80% of girls participate willingly in PE classes. A slim proportion of students do not participate in PE classes at all. School location does not impact students' declarations on their participation in PE classes.

The older the children, then more often they report participating in PE classes "although they don't want to" or "because they have to". Students' declarations about their participation in mandatory PE classes were more optimistic than the results of NIK's report.

Over 80% of girls and 70% of boys declared that they participated in extra physical activities. This is less than in Germany, where over 90% of children declared additional sports activities outside of school (Sawicki 2009). Research on willingness to take up physical activity once school education is over also suggested that Polish students are less willing to do so than their German (Sawicki 2009) and Irish (Pośpiech 2006) counterparts.

Students in rural schools declared participation in non-school physical activities less frequently than urban students. Amongst 4th and 6th graders, additional physical activities were reported more often by students who participated in PE classes "although they didn't want to" or "because they had to".

Over 70% of students declared that in their free time they engaged in ball games; the same proportion rode a bicycle. Over 40% reported swimming, and almost 40% jogging. Students who did not participate in PE classes usually declared that they walked in their spare time. In this group, there were almost 30% of students who cycled and almost 30% who swam. The most popular sports amongst German schoolgirls were: cycling, horse-riding, jogging, swimming, and dancing, while for German boys, popular sports included: football, cycling, table tennis, skiing and basketball (Sawicki 2009). Polish schoolgirls, compared to their German peers, were more inclined to play with ball and less willing to dance.

6th graders declared more intense forms of physical activities than younger children, while proportion of those who walked increased in that age group.

Primary school senior students declared that sedentary activities on school days took up 7 hours of their time, while on days off school a little over 9 hours. These students devoted 3.5 hours to outdoor activities on school days, and 5 hours on days off school.

School girls devoted less time to sedentary activities and more time to outdoor activities than boys. Girls who willingly participated in PE classes and boys who partook in PE classes "although they didn't want to" or "because they had to" spent the biggest amount of time on outdoor activities.

Application conclusions

- Developing a motivation system to encourage students to participate in PE classes;
- Increasing participation of students in extra physical activities (to reach the EU level);
- Encouraging student to be physically active after they complete school education.

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