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# **OPINION OF 14 AND 15 YEAR OLD PRIMARY SCHOOL PUPILS ON THE USE OF MOVEMENT GAMES IN THE ŽIAR NAD HRONOM REGION**

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**KEY WORDS:** primary school, movement games.

## **INTRODUCTION**

From the perspective of several experts (Bartik, 2009; Antala, 2009; Bartík-Mesiarik, 2009) gains the subject of physical and sports education a growing importance in health and reparation, as a huge number of pupils does not have regular activity except physical education. It is therefore extremely important for a physical education teachers to explore ways to get school-age children interested in regular physical activity (Michal, 2001; Febenová, 2007; Hubiňák, 2007; Bence, 2009). The ideal tool, which combines knowledge, educational and playful side are movement games (Krska-Adamčák, 2008). Movement games, according to several experts (Krska, 2002; Nemeč, 2004; Mazal, 2007) have an important place in physical education and are an important educational tool for the teacher. They are suitable for all ages and all having educational, health, sport, relaxation and recreational significance. If we want the selected physical game to be a success, the teacher has to be properly prepared for it. An important factor is to think through the overall organization of the lesson, teaching techniques, methods and the security of material resources. According Argaja et al. (2001) is the planning and preparing of physical game a component of a long- and short-term teacher training. According Vladovičová (1993) teacher should not forget to rethink the application of teaching principles, especially how he will implement the principle of clearness and the principle of proportionality. The teacher should evoke a pleasant atmosphere, create pupils interest in the game, where the previous experience of the successful children's gaming activities can be used. The teacher has to choose the appropriate course of action to explain the rules of the game. A long explanation

can make children to stop paying attention; otherwise a too short one can lead to misunderstanding the game.

## OBJECTIVE

The aim of our research within the project *VEGA 1/0377/08 "Humanization of teaching sports games as a means of making the educational process in elementary schools more effective"* was to investigate the opinions of 2<sup>nd</sup> grade students on the issue of physical movement games.

## CHARACTERISTICS OF THE RESEARCH SAMPLE

The research group in our work, where 2<sup>nd</sup> level pupils from schools in cities of Žiar nad Hronom and Hliník nad Hronom, who attended the 8<sup>th</sup> to 9<sup>th</sup> year. Their exact characteristics are presented in Table 1:

**Table 1 Characteristics of the research sample of pupils**

Line labels	girls	boys	total
14 year olds	63	60	123
15 year olds	42	46	88
Total amount	105	106	211

For gathering opinions, of 14 and 15 year old 2<sup>nd</sup> level primary school students, on physical education and physical games - a questionnaire was used. Individual responses of students were analyzed in terms of intersexual relations - between boys and girls in relation to age. Questionnaires for primary school pupils had been distributed in the 1st half of the school year 2008/2009. When completing the questionnaire an appropriate instruction to each question was presented.

## RESEARCH RESULTS

The first question the respondents have been surveyed for was the interested in sporting activity. Assessing the results, we found differences in responses in both sexes. The interest in sporting activity By the 14 year old respondents was 40.70% by the girls and 53.13% by the boys. In the group of 15 years old respondents, the interest in sporting activity has been expressed in 26.56% by girls and 41.93% by boys. Comparing the 14 and 15 year

old respondents, we found out that the greater interest in sporting activity dominates by the 14-year old respondents. The results we have gained, confirmed us the long term theories of multiple experts (Vladovičova-Novotná, 2005, Michal, 2006; Bence, 2009), under which the interest in sporting activity is declining during the growth of age. The percentages also clearly indicate that boys are more interested in sporting activities than girls.

Today's time is commonly known through the reduced-interest, rather the decline of interest in sporting activity. As we consider this problem to be solved, we have formulated this issue into the following questions in the questionnaire, where we asked the participants for a specific reason of not doing a sport. Assessing these results, we found out that respondents from all the answers considered the greatest consequence of not doing a sport, the lack of time. In this question we have reported more than 40% representation of this answer in both age groups of boys and girls.

As we have mentioned earlier, a major role in creating interest in sporting activity, but also the elimination of adverse factors the subject of physical education plays a big role. So we have surveyed the respondents in the next question which was the popularity of this subject. Evaluating the acquired results we conclude that even for girls and boys at both ages there is a mostly positive attitude towards physical education. In the age category of 14 year olds the answer "yes" was 43.11% by girls and 73.01% by boys. Answer "partially" was mentioned by 37.69% girls and 16.76% boys. Last opportunity to answer "no" chose at least 19.20% of girls and 10.28% of boys. Similar results were also recorded in 15 year olds. Specifically, answer "yes" was marked by 44.47% girls and 67.88% boys. Answer "partially" was marked by 38.38% girls and 21.44% boys. In the last resort, "not" we had seen by 17,14% girls and 10.68% boys. We consider it very positive result, particularly because in today the importance of physical education is often underestimated. Comparing the resulting values, we also found out that the percentage of popularity has been much larger by boys rather than by girls.

Physical education as a subject itself involves many activities and it is well known, that every action has a different percentage for each students' popularity. The next question we asked the respondents for their favourite movement activity in physical education classes. Through the evaluation, we found out that 14-year old respondents saw a favourite activity in movement games, with the percentage of only 33.59% in girls and boys at 31.69%. For the 15 year-old students the movement games ranked second in scale and popularity. The preferable

movement activity the sport games have been chosen. The girls got the answer at 28.87% and the boys at 31.05%. Respondents expressed the slightest interest in tourism but also other physical activities (Table 2).

**Table 2 Favourite physical activity in physical education classes**

	14 year olds		15 year olds	
	girls	boys	girls	boys
<b>other</b>	0,00%	0,00%	7,31%	2,23%
<b>tourism</b>	1,35%	3,49%	2,25%	0,00%
<b>skating</b>	7,85%	8,96%	5,10%	14,91%
<b>swimming</b>	17,45%	6,20%	9,13%	10,36%
<b>skiing</b>	11,82%	4,05%	7,31%	10,41%
<b>movement games</b>	33,59%	31,69%	28,05%	22,45%
<b>sport games</b>	14,64%	29,62%	28,87%	31,05%
<b>rhythmical ymnastics</b>	1,37%	2,84%	4,90%	0,00%
<b>sport gymnastics</b>	10,43%	9,40%	7,08%	2,23%
<b>athletics</b>	1,51%	3,76%	0,00%	6,36%

The respondents are surveyed on what they consider the most attractive on movement games. Assessing the results, we found out that most respondents of both ages reported the first opportunity to answer a "physical activity". In 14 olds physical activity gained 64.10% by girls and 41.38% for boys. From the 15 year old respondents physical activity was reported by 58.01% and 40.82% by boys. By the response option "the opportunity to compete" we compared that more than 30% of boys at both ages reported this response, what we also assumed, since puberty is known in increase of interest in particular motion games with competitive character. Response "to show their strengths" was chosen by the 14-year age group of respondents in scale 5.88% for girls and 10.89% for boys. From the 15 year olds reported this response 7.55% of girls and 22.36% of boys. Even in the last option "other" we have experienced certain percentages. Specifically, this response was identified by 5.74% of girls and 12.14% of boys in the age of 14. Even 15-year old respondents reported this response, exactly 11.90% of girls and 6.39% of boys.

The next question surveyed was the frequency of assigning movement games in physical education classes. We agree with Vladovičova (2001), whereby the movement games in school physical education are a universal tool that can be applied widely, and its regular

application has a positive impact on achieving the hour's objectives. The results show that movement games are applied on each lesson. We state so on the basis of major percentages which were answered in this option compared with the other. More specifically, the answer on every hour was chosen by 41.68% of 14-year old girls and 49.68% 14 year old boys. From the 15 year olds, the possibility on every hour was reported by 42.50% girls and 39.09% boys.

In our research we are also interested in the fact, where are the movement games usually carried out. We found out that more than 85% of respondents said the most common place for a movement game is the gym. "School Playground" marked 3.13% girls and 14.99% boys of 14 year olds. From The 15 year old respondents indicated the same answer 4.98% of girls and 4.21% of boys. We were surprised that the last possibility of a response the "countryside" was identified only by 2.54% of 15 year old boys. The results were expected, because we think that many teachers prefer the gym only because of greater possibilities of using devices. Reasons favouring the gym before school playground and nature can be more, but that we would like to appeal on teachers to do not underestimate the importance of school playground and nature, as well as the gym can later on become stereotyped and this may be the one reason for reduced interest in movement activity from the side of students.

Another question included in the questionnaire, which we wanted to find out the answer to, was which part of the lesson is most often encountered by movement games. In this issue we recorded the diversity of responses, we also expected, because as mentioned above movement games can be broadly used, so they can occur in every part of the lesson. Comparing of results obtained in individual responses, we found out that most games use movement in the main part of the lesson. The 14-year respondents indicated this option 59.02% by girls and 58.31% by boys. In the group of 15 years old, the percentage of respondents although a bit lower but still more and dominant above the other option was 52.91% by girls and 47.80% by boys. We were surprised that the respondents marked the initial part of the hour the least, because we assumed that the final part of the class receives the smallest percentages.

In The next question we tried to detect the form most movement games are realized in, from the aspect of amount of students.. We found out that movement games are usually made through a competition of groups. Our argument is confirmed by percentages, which show that this answer gained more than 51% by boys and girls in both age groups. That did not really surprised us at all, as we know a form of group work in school physical education is often used; as Mazal claims(1990) ideal is, when all the pupils are involved in the game. Even

though all possible answers got a certain percentage, comparison of which we found out that the least used form of executing movement game is competition in pairs.

With the issue of movement games the use of different devices is closely connected, so with the next question we investigated the use of different tools in movement games at the hours of physical education. Studies of many experts (Adamčák - Novotna, 2009) confirmed that the motion games enriched by a variety of tools and implements made the movement game itself more attractive to students. Assessing the results, we found out that most respondents aged 14 years, just 82.20% girls and 71.57% boys responded to the movement game with aids. This option had also been chosen by the most of the respondents in the 15 years old group – up to 83.12% girls and 79.30% boys have chosen this answer. Results are positive, because in our view, the unattractive movement game without using the devices can in the correct application of devices become more interesting for students. Comparing the results, we also have found out that the respondents have chosen as the least option the first answer – movement games on the tools.

Furthermore, we wondered which theme the movement games are used most. The results are presented in the Table 3 which clearly shows that the movement games dominate the whole thematic unit of sport games. This is confirmed by the high percentage values for both girls and boys of both ages were the percentage was above 84%. The results were expected, since studies of several authors (Nemec, 2004; Kačáni, 2002) emphasize the role movement games in physical training and improvement in sports games.

**Table 3 Frequency of use of movement games in terms of selected thematic units**

	14 year olds		15 year olds	
	girls	boys	girls	boys
<b>other</b>	4,09%	1,65%	2,53%	0,00%
<b>athletics</b>	5,80%	1,63%	4,98%	7,11%
<b>gymnastics</b>	5,46%	7,53%	2,18%	7,97%
<b>sport games</b>	84,65%	89,19%	90,31%	84,93%

Another question questionnaire was aimed, was to find a specific sport games, where the movement games are most frequently used. In this issue we supposed diversity of answers, and especially by boys and girls. Values that were recorded in Table 4 clearly confirm our assumption. As you can see, more than 74% of both boys ages supported the

football game and more than 65% of girls were fond of volleyball game. When evaluating the results, we have been surprised by the first opportunity of answer, where the respondents included the modern sports games like Floor-ball or Frisbee. We can assume that the dominance of football for boys and volleyball for girls will no longer predominate over the other sport games as it is in the case now, because many studies (Blaha, 1998; Adamčák, 2005, 2009) show the fact that games like Floor-ball, Ringo, Badminton, Speed-badminton, Tchoukball and many others are starting to have its firm place in school physical education.

**Table 4 The frequency of use of movement games in terms of selected sport games**

	14 year olds		15 year olds	
	girls	boys	girls	boys
<b>other</b>	10,04%	1,77%	6,79%	4,19%
<b>volleyball</b>	75,02%	6,92%	65,17%	4,22%
<b>handball</b>	10,99%	1,73%	9,10%	1,94%
<b>basketball</b>	1,63%	7,53%	9,63%	14,83%
<b>football</b>	2,33%	82,05%	9,31%	74,82%

The last question in the questionnaire, we wanted to determine whether students are interested in playing movement games at hours of physical education also in the future. We found out that in each age group the most percentages got the answer "yes". Specifically, the response was identified in the 14 year old age group by 35.26% of girls and 59.85% of boys. Of the 15 year old respondents which marked this option 39.91% included girls and 47.60% boys. Comparing the results, we also found out that boys rather than girls are more interested in more frequent use of movement games at hours of physical education. This is confirmed by more than 7% difference.

Even the negatives answer "no" which obtained several percentages were above our expectation and very surprising because we expected a smaller percentage amount. The 14-year old girls gained 19.75% and boys 13.98%.. Almost similar percentages were recorded in 15 year olds, 19.04% for girls and 16.29% for boys. This question, as we supposed due to the results showed us that many of the respondents could not make a choice, so they picked the neutral response "I do not know." This reply was identified by 32.40% of girls and 18.43% of boys in the age group of 14 year olds and 31.66% girls and 27.39% boys in the other age category. We agree with Mazal (2000), that every student should realize that with a playful

activity he expands his practice, gets a ton of experience, enrich their sense of their own being, while probably the inner source of a playful activity are the internal impulses themselves.

## **CONCLUSION**

The aim of our research was to investigate the opinions of the 2nd grade school students on the issue of movement games. With the use of questionnaire method, we surveyed the use of movement games in the learning process, but also the interests of students in movement games. We found out that school physical education is one of most popular subject among the students and is the dominant element in the activation and pupil motivation to a motion activity. The results also showed that students are interested in the new movement games. We hope the research will contribute to the improvement of teaching itself, but also to increase the interest of students in physical education and sport.

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## **SUMMARY**

The aim of our research was to investigate the opinions of the 2nd grade school students on the issue of movement games.

The research group in our work, where 2nd level pupils from schools in cities of Žiar nad Hronom and Hliník nad Hronom, who attended the 8th to 9th year. The results also showed that students are interested in the new movement games. We hope the research will contribute to the improvement of teaching itself, but also to increase the interest of students in physical education and sport.

## **LEISURE TIME PHYSICAL ACTIVITY AND NUTRITION AS FACTORS STRICTLY CONNECTED WITH HUMAN WELL-BEING ON EXAMPLE OF OLDER WOMEN PARTICIPATING IN HALTH TRAINING**

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**KEY WORDS:** physical activity, women age 50-75, health training, leisure time

### **INTRODUCTION**

Regular physical activity, fitness, and exercise are critically important for the health and well being of people of all ages. Research has demonstrated that virtually all individuals can benefit from regular physical activity, whether they participate in vigorous exercise or some type of moderate health-enhancing physical activity. Even among frail and very old adults, mobility and functioning can be improved through physical activity (Butler – Dewis – Lewis, 1998). Therefore, physical fitness should be a priority for people of all ages.

One of the most important aims in human's life is to preserve independence, physical and mental health until late years of one's life (Parnicka, 2005; Szwarc,1975; Ściepurko, 2002).It can be obtain if few rules are upheld. These rules are strictly connected with the life style which is concerned as a set of behaviours conditioned by: personal values, knowledge and beliefs, conditions and ability of living, socio-economic status, level of education, culture, environment and also the politics of whole country.

According to many scientists the most important is proper level of physical activity, what means at least 5 times a week for no less than 30 minutes but it should be customised to specific age group. It should also be characterised by high diversity, beginning from exercises directed on stretching through aerobic training, relaxation and other forms, which ought to include the training of muscles, because with the ageing process of sarcopenia is accelerating. Process of muscle mass loss among older people can be retard by proper level of physical activity and proper daily intake of protein, what means about 50 g (Webb, 2007).

The process of ageing is connected with many physical and physiological changes, as well as changes in level of physical activity. Lack of physical activity is the factor, which conducts to lower physical capacity, what can lead to long lasting tiredness, bad well-being, and also some mental disorders (Kozłowski, 1984) Higher level of physical activity is especially important from the moment of visible lowering of capacity, what means from about 30 years, what allows to reduce the pace of the whole process. So it can be said that physical activity is essential element of good ageing, but in the same time the most of ageing people is reducing its level; that reduction is gradually leading to only everyday activities such as shopping, cleaning etc. And in the same time high level of physical activity forecast long life and independence even in very old age. It is worth emphasising that even old people who were not physically active for some time can provoke increase in muscle mass strengthen bones, what is the main factor to be improved in preventing falls and injuries and thus to encourage to continue independent living (Brown - Burton - Rowan, 2007; Larson - Wang - Bowen, 2006).

Physical activity and other elements which assemble on the life style are important for long and satisfactory life; they constitute about 50% of all the factors that impacts duration of human's life, whereas health care service impacts it in only 10% (Karski, 2000). The most important thing to obey is regularity of one's physical activity.

Nutrition is also one of the most important elements, which lets to live longer and satisfactory living. It should be rational, what means mainly: proper amount of meals during the day, their proper collation, and also amount and quality of consumed food (Żołnierczuk-Kieliszek, 2002). On the scale of validity proper quantity of fruits and vegetables is on high position, because of high fiber content, the substance which reduces concentration of cholesterol, glucose and lowers blood pressure (Kłosiewicz-Latoszek, 2004).

Diet which is not properly composed generally lead to many physical disorders in functioning of the whole organism. Now days the most terrifying is probably the fact that

most highly developed countries have to fight with the world wide epidemic of adiposity and obesity. This situation is described in WHO's 2003 report on diet, nutrition and prevention of chronic disease, which states that it can result from too high consumption of sugars, saturated fat and in the same time reduction in the level of physical activity. WHO's report also emphasises that too low weight in childhood or youth is the factor which favours faster development of adiposity than among people with correct weigh during whole life.

The main aim of this paper is to show the connection between physical activity and eating habits and in the same time to present their impact on human's self-reported level of well-being.

## **PURPOSE**

The main reason of this research is to demonstrate the impact of proper level of physical activity and nutrition habits of on women age 50-75 years self-reported level of well-being and life-span.

## **MATERIAL AND METHODS**

To characterise the group the Canadian Survey Questionnaire was used, because of the fact that it lets to have possibly widest view to respondents self-reported life style and level of physical activity. The obtained data were analysed with statistical measures: arithmetic average, standard deviation, variance, maximum, minimum, median. The general level of motor skills of that group was also measured with the usage of European Test of Efficiency – Eurofit. Usage of these two tools allows to have some general characteristic of respondents.

## **GENERAL CHARACTERISTIC OF RESPONDENTS**

Sixty six women age 50-75, participated in sport groups organised by the Academy of Physical Education and Sport in Gdańsk, were asked to fill in the questionnaire of Canadian Survey. The respondents were divided into 2 subgroups: women age 50-59 and women 60-75 years. More numerous group was represented by women age 60-75 years; there were 46 of them, which constituted 69,7% of the whole group. Among women in the younger group the average age approximated 55 years and in the older group it was 66,1. In the questionnaire the time of being retired was also reconsidered. The following results were obtained: 3,6 for younger group and 8,6 for older one. Among features which characterised surveyed population were also their marital status and level of education. The data are collected in chart

3. It shows that among women age 50-59 70% were married, however among women age 60-75 that number fell to 52,2%. Simultaneously the higher number of widowed women could be observed in the older group: 5% in the younger group and 28,2% in the older group. It can be connected with longer life expectancy for women. In both subgroups these with secondary education predominated (appropriately 60% and 52,2%). More details can be found in table 1.

The subsequent characteristic of the respondents were weight and height; according to them Body Mass Index (BMI) was calculated for both subgroups. The average BMI in both of them (26,2 – for younger women, 26,7 – for older one) indicates a slight overweight, which has a tendency to deepen with age. The high variation – about 25% - can be observed in total fat content among women of both subgroups, what can indicate the faster increase in mass of fat tissue after 60 years in case of women. That fact can be linked with retirement age, in which time life of many people became even more sedentary than before. Basic soma parameters and the BMI are collected in table 2.

These age group generally display high differentiation, especially among body mass. But even if they are obese it is not the reason to avoid physical activity; it only should be matched to one's abilities.

**Table 1 General characteristic of respondents**

Demographic structure		Number of respondents	%
Age	50-59 years	20	30,3
	60-75 years	46	69,7
Totally		66	100
Level of education	Primary	0	0
	Secondary	36	54,5
	University	30	45,5
Totally		66	100
Marital status	Married	38	57,6
	Widowed	14	21,2
	Divorced	7	10,6
	Separated	1	1,5
	Solitary	6	9,1
Totally		66	100

**Table 2 Basic soma parameters and BMI**

Parameters	Age, number of respondents	Soma paramertres					Difference	
		M	$\pm\delta$	Max.	Min.	V%	cm/kg/kg/m <sup>2</sup> /%	%
Body height [cm]	50-59 (n=20)	165,7	4,6	170	159	21,1	5,8	3,5
	60-75 (n=46)	159,9	4,6	171	152	20,9		
Body mass [kg]	50-59 (n=20)	72,4	12,5	98,2	57,8	157,4	4,1	5,7
	60-75 (n=46)	68,3	11,4	97,9	42,3	129,4		
BMI [kg/m <sup>2</sup> ]	50-59 (n=20)	26,2	4,5	34,4	20,2	20,0	0,5	1,9
	60-75 (n=46)	26,7	4,2	36	18,3	18,0		
% of fat	50-59 (n=20)	26,4	9,4	44,9	13,4	89,4	8,7	24,8
	60-75 (n=66)	35,1	7,0	46,8	17	49,2		

## RESULTS

The general level of physical activity and the eating habits of respondents were measured to answer if there is any relation between them as a factors of longitude of people's life. Firstly most of the respondents seem not to change their diet because of health favours. Generally women of the analysed group seem to realise the necessity of rational diet and its impact on longitude of human life but don't implement some special rules. It can be contested that respondents put the main stress to preparing their own food and not to use many of store-bought or prepared products. According to the questionnaire it can be also stated that the consumption of fruits and vegetables is lower than that which is advocated, what mean at least 3 portions of them a day. It is also worth emphasising that most respondents partake 3 standard meals with special attention devoted to eating normal breakfast every day. Most of the respondents try to avoid high consumption of sweets, sugar, salt and alcohol. There are also some high disproportions in intake of coffee and tea, some people drink much of it and

some try to change it with fruit and vegetable juices and water. More details can be seen in picture 1.

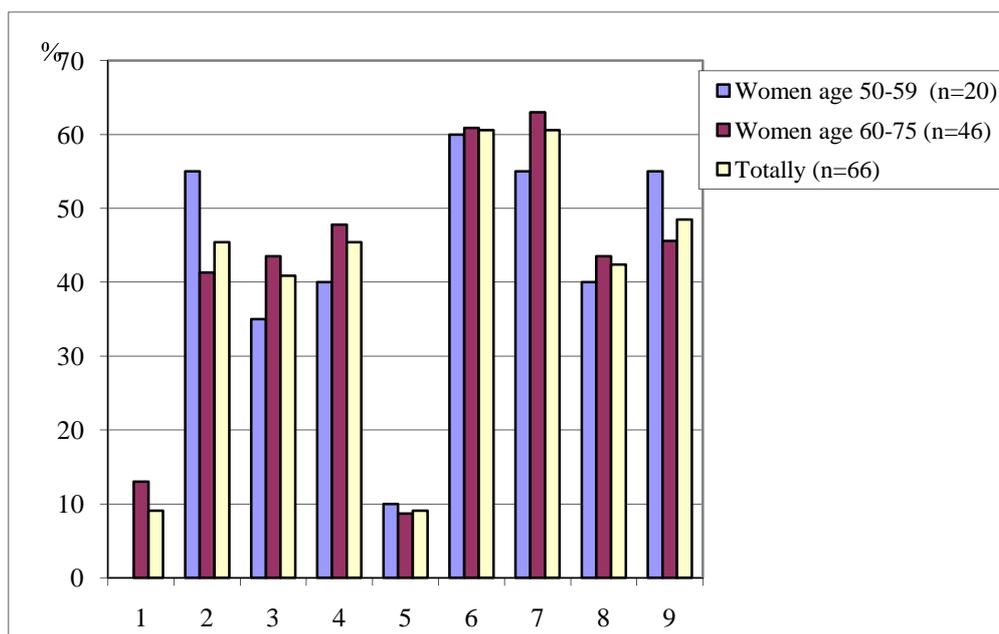


Diagram description: 1- eat extra portion, 2 – avoid sugar and sweets, 3 – avoid salt, 4 – prefer grilling than frying, 5 – use artificial sweeteners, 6 – trim fat from meat, 7 – remove skin from meat, 8 – prefer dietetic food and drinks, 9 – choose food rich in calcium.

**Picture 1 Manner of nutrition among women age 50-75 years**

What is also important is the fact that most of the respondents if they implemented some changes in their diet, they have done it more than 12 months ago. These changes mainly concern the amount of used sugar, salt, fried dishes and use of saturated fats. They try to avoid wheat flour in favour of whole-wheat products. They did not change the amount of consumed meat and other products rich in protein, what can reduce the pace of loss of muscles mass. The respondents generally know about necessity of supplementation of their diet, especially in calcium. It is probably because of the fact that knowledge about osteoporosis is more common nowadays than it used to be. But in the same time there is no answer if they also supplement some other supplements, which are also important for functioning of whole organism.

That group generally contest their state of health as average and in the same time they claim to be more physical activity than other people of their age. More details are shown in table 3.

All of the respondents declare to participate in some kind of physical activity during last 12 months, sometimes they undertake more than one kind of it. The most frequent are activities like riding a bike and walking; whereas forms which require more financial effort are less frequently chosen. The obtained data are shown in picture 2.

**Table 3 Subjective evaluation of health state and physical activity in comparison with other people of the same age.**

Parameter		Women (50-59 years)n=20		Women (60-75 years) n=46		Totally n=66	
		n	%	n	%	n	%
Subjective state of health	Very good	0	0	3	6,5	3	4,6
	Good	10	50	16	34,8	26	39,4
	Average	9	45	27	58,7	36	54,5
	Bad	1	5	0	0	1	1,5
Physical activity in comparison with other people of the same age	Much more	5	25	11	23,9	16	24,2
	More	4	20	21	45,7	25	37,9
	The same	6	30	10	21,7	16	24,2
	Less	2	10	1	2,2	3	4,6
	Much less	3	15	3	6,5	6	9,1

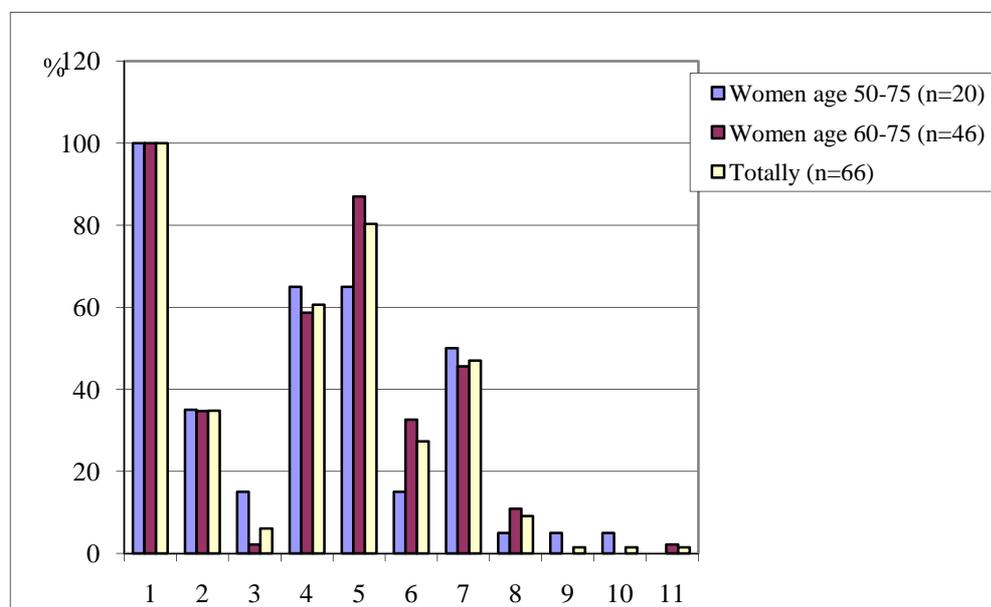


Diagram description: 1 – walking, 2 – riding a bicycle, 3 – jogging, 4 – home exercises, 5 – participation in organized exercise groups., 6 – swimming, 7 – gardening, 8 – dancing, 9 – skating,, 10 – skiing, 11 – exercises with dumb-bell

**Picture 2 Kinds of physical activity in which respondents participated in 12 months time**

Simultaneously the tests from Eurofit test were taken to obtain objective view on respondents motor skills. They included measure of body balance with posturographic screening with “Postrograf” apparatus, standing on one foot with open and then closed eyes, rapidity of straight reaction with usage of programme “Raptus 1,0”, stamina with Cooper’s march test on a distance of 2000 metres, strength of abdominal muscles and resilience – data are collected in table 4. Generally all the test indicates that physical capacity of women age 60-75 is lower, but it can be upgraded by regular physical activity.

It was done to have possibility of proper exercise collation for specific group. It allows the participants of training to exercise more efficiently and to avoid unnecessary contusions, what can be the main reason for people to resign of further physical activity and can lead to completely unwanted dejection.

**Table 4 Results obtained in the Eurofit test**

Kind of test	Age, number of respondents	Soma parameters					Difference	
		M	$\pm\delta$	max	min	V%	Number of props/mm <sup>2</sup> /min/cm	%
Standing on one foot –	50-59 (n=20)	7,9	6,0	16	0	36,5	1,5	16,0
	60-75 (n=46)	9,4	4,1	20	0	16,8		
Size of advanced	50-59 (n=20)	251	108,9	474	124	43,3	41,4	14,1
	60-75 (n=46)	293	167,5	695	76	57,2		
Cooper's test	50-59 (n=20)	22,	2,4	28	20	5,6	0,91	4,0
	60-75 (n=46)	21,	3,4	28,8	7,8	11,8		
Resilience of torso	50-59 (n=20)	32,	8,4	46	20	71,7	1,9	5,8
	60-75 (n=66)	30,	8,0	46	11	63,5		

The purpose of this paper is to determine how age influences the association between physical function, health-related quality of life and nutrition habits among women in pre-retirement age and shortly after being retired. The subject is so important because if one's wants to achieve and preserve good health conditions until their late years, they have to lead aware and responsible life, as well as work on its acquiring and multiplying. This process is possible only while individual consider health as a quality worth their interest and wage. Therefore its maintaining and multiplying is possible only when in whole society exist

awareness of its validity and statue, moreover not only among individuals but also in case of social politics, which should be directed to this issue.

Politics of the country directed on spreading the prohealth behaviours can significantly influence social awareness in this matter, and as an effect allow to take reasonably the decision about undertaking of actions, which main purpose is to propagate healthy life style, thus general rally of society health and decrease in amount of money spend on curing civilisation disease. Primary factors which enable their development are: insufficient physical activity, smoking tobacco, uncontrolled blood pressure and to high body mass. Two main factors can apparently lower the risk of civilisation diseases, namely proper level of physical activity and in the same time rational and regular diet.

This article is just signalling the general problem of too low physical activity as well as irregular nutrition habits of women age 50-75 in Poland. It seems to be even more important because of the fact that most of the respondents in self- reported state of health consider it as good or average and in the same time they report their level of physical activity as higher than among their peers. Therefore it is even more important to find the way to inform most of the population about the proper level of physical activity and in the same time to encourage older people to participate in it. Also the very important factor is the conducive environment, what mean groups within which some connections among people will exist, the place where they do not only exercise but also can meet other people.

Worth emphasising is the fact that nearly every women from questioned group has implemented some changes in one's life style during some period of time; it is generally connected with nutrition habits or smoking. So it is really worth trying to find some way to educate people about necessary changes, what can be with advantage not only to those people, but in general, because few simple rules can let older people to lead satisfactory and healthy life until late years. They indiscriminately understand the necessity of changes but ordinarily there have to be some external factor to let them include it in their life. Usually the main reason is some health problem, and it could be avoid if healthier life style was implemented sooner, what would be a great benefit for person and the whole society. Generally preventing degenerative effects associated with aging is much easier and less expensive than curing it.

Most people think that poor health is inevitable as they get older. One's brain works better if it keeps training and it is the same way with one's body. The main element of healthy ageing and long life is to preserve positive attitude to life and be amenable to changes which can give some positive results. That positive attitude lets to make some simple steps to

increase mental stimulation, exercise regularly and eat properly. It is worth to emphasise that people who adopt good eating habits and proper level of physical activity are more protected against diseases, which are concerned to be the most dangerous killers of nowadays, what means heart disease, stroke and cancer. It also lets to preserve higher mobility even in very old age.

## CONCLUCIONS

In further studies the strength of correlation between two factors covered in this paper and elongation of human's life has to be found, but it is the fact that they work synergistically. Although their synergetic effect, the general impact can differ among population, and this is because of one's genes. Exercises, proper diet and nutrition supplementation are universally anti-ageing model of living. Although the small sample size limits generalizability; however, results give the field to further researches.

To conclude older people are aware of some changes which have to be implemented in their lives; they also have time to implement them, but there have to be some external factor to do it and all kinds of organised physical activity could be such a factor.

The findings suggest that target-specific interventions to increase the level of leisure time physical activity are more promising than campaigns aimed at the general population. Even when catering for the need of specific age groups such as, for, example, the elderly population, the structural and cultural context must be taken in to account to develop programmes that are not only adapted to physiological need but also to the structural and cultural resources and constrains of the target groups in questions.

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## SUMMARY

The main reason of this research is to demonstrate the impact of proper level of physical activity and nutrition habits of on women age 50-75 years self-reported level of well-being and life-span. Deficiency in positive elements in the life style can be considered as an aetiology of many disorders, both physical and psychological. The research was conducted among 66 women age 50-75, who participated in organised sport-classes. The general characteristics of the respondents shows that they mostly graduated from secondary schools and universities, on the average they were retired for about 4 years. For both analysed subgroups Body Mass Index was calculated, and it indicates an overweight, subsequently 26,2 – for younger women and 26,7 – for older ones. Also the tests from Eurofit test were conducted to show the general motor skills of both subgroups. The respondents claimed to be

more physically active than their peers. According to obtained data they uphold some rules connected with the way of nutrition, what means avoiding of sugar, salt and saturated fats. Concurrently most important for almost all respondents are 3 proper meals during the day and also supplementation of calcium. The data also indicate that the excess of coffee or tea is substituted with juices or water. It is to be concluded that most of the analysed group try to uphold rules that can endure one's life; they are also prepared to implement other health rules but there usually have to be some external factor.

# **EVALUATION OF SCHOOL PHYSICAL EDUCATION IN PRIMARY EDUCATION**

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**KEY WORDS:** evaluation, physical education, primary education

## **INTRODUCTION**

Evaluation is generally a process whereby the judged performances, expressions or characteristics of persons or things and are compared with the established criteria. Result of the evaluation is assess how and to what extent the evaluated phenomenon coincides, or departs from the following criteria (Mesárošová, 1997).

Okruhlicová (1992)introduce, that assessment in history education has always had its place, expressed in many different ways. The most common and best known evaluation of the use of marks, grades or points. First grade in schools in Europe, as we know it today appeared in the first half of the 19th century. Its purpose was to check and inform you as a student has met the requirements that were placed upon it. Many have in mind a review of the classification of the late 60th and early 70 years, in our names associated with Stracar, Jurčo, Velikanič, Rosina.

Any attempt to eliminate marks, however, sparked a great movement for their rescue. On the other hand, in the 70 years have formed a worldwide movement for the abolition of signs and changes in pedagogy, known under the new name Humanistic education. The movement called for equality in education and was based on individual approach to pupils, to his individual abilities and interests.

## **PROBLEM**

The besion for objectification of humanizing and evaluation, but also the effort to get students to regular physical activity, proper motivation, led in 1991 to replace the classification of physical education for 1 stage of primary schools in other forms of evaluation, especially evaluation of the word. Declassification in the learning process should bring a new quality in terms of humanizing education. The result of an incorrect idea and attitude of teachers to individual variation in force from 1 rating September 1994 is the

benevolent approach of many teachers to the goals, tasks and requirements of the curriculum. The current way of life of our younger generation, but also the way physical education has resulted in reduction of the physical fitness of children, a deterioration in their health and reducing the interest of students in physical education (Vladovičová - Novotná, 2007).

Requirements for knowledge and physical skills, develop motor skills and pupils first primary school level are expressed in the educational standard that is set for the year, or all-level education.

## **OBJECTIVE, HYPOTHESIS, TASKS WORKS**

The goal was to analyze the opinions of teachers elementaristov the types of evaluation of teaching physical education syllabus in selected primary schools in the Slovak Republic.

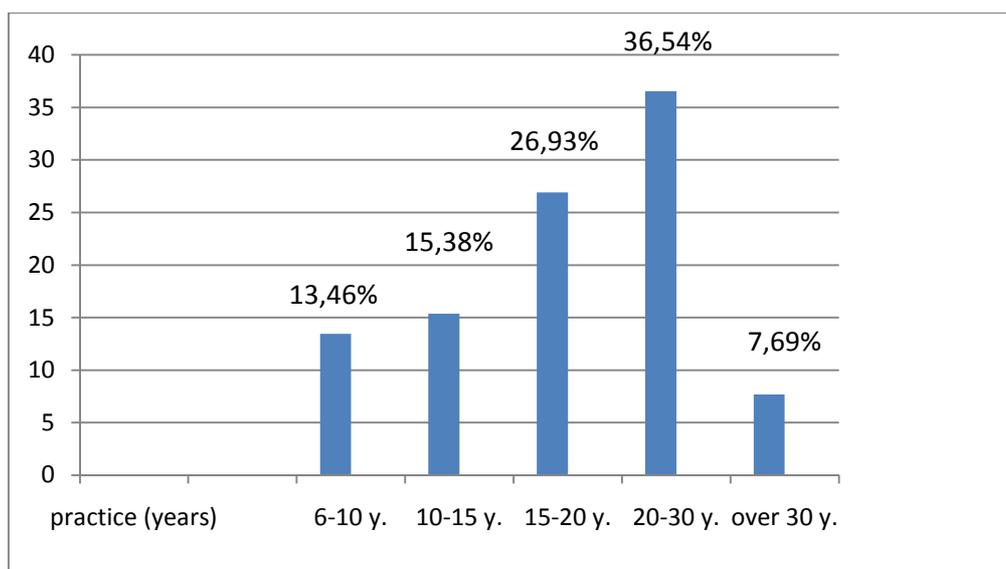
HI: We assume that teachers elementaristom suits verbal assessment.

According to research objective we set ourselves the following tasks:

1. Using a questionnaire to obtain views on the types of teacher assessment of school physical education.
2. Statements made to analyze and draw conclusions.

## **METHODOLOGY**

The research was involved to 52 teachers elemetarist from 28 primary schools across the Slovak Republic (Udavské, Humenné, Bystré, Prešov, Košice, Ružomberok, Banská Bystrica, Zvolen, Lučenec, Detva, Žiar nad Hronom, Malacky, Jakubov). All probands were women. Research we conducted an anonymous questionnaire and survey sample selection was random. The questionnaire was administered via the Internet. The processing of the data we used logical methods and the quantitative analysis we use mathematical and statistical methods such as sorting, tabulating data, the percentage calculations.

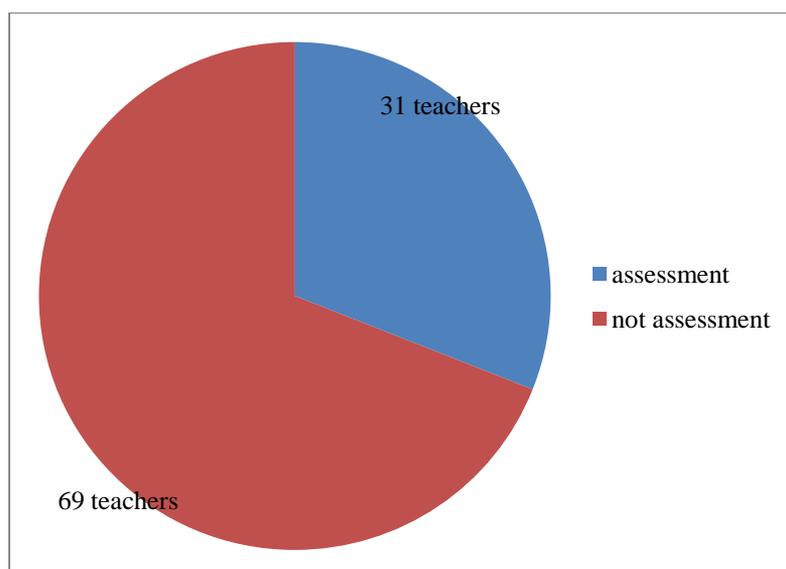


**Pic.1 Composition of the research set by the length of practice in%**

The chart shows that the largest part of the tested sample has teaching experience of 20 years and do30 fewest represented part of the length of teaching experience over 30 years. We can say that the research sample consisted of experienced teachers. According to place 78,84% of the surveyed sample members engaged in urban schools, while 21.15% subjects taught in the countryside. Most teachers teach in full organizations elementary schools 84,62%, while in schools with only first grade primary school teaching 15,38% of respondents.

## **RESULTS**

In the questionnaire, we asked whether probands evaluated for physical education students. Responded positively 69% of respondents, while 31% of teachers surveyed sample of their pupils assessed. We believe that the respondents understand the assessment and classification of other forms of assessment taken into account. However, the question of how they evaluate students responded verbally that most respondents (63,88%), while 36,11% of respondents indicated that students classified.



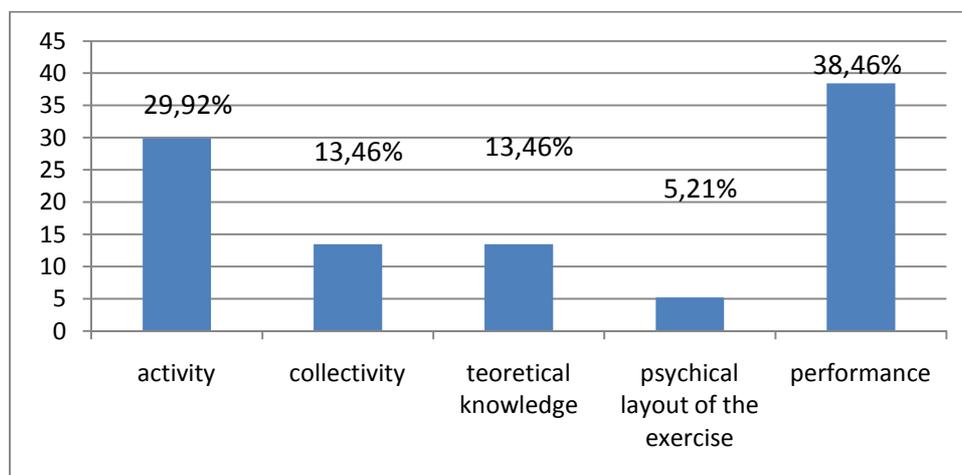
**Pic.2 Use of assessment in PE%**

As the most common reason for students not judged on physical education respondents reported avoiding stressed pupils (the reason explained 56,25% of those not evaluated). The reason that they exercise for health students and not for evaluating reported 43,75% not assessment teachers. Not yet students can not be regarded as accurate. We believe that assessment should motivate students, encourage and inform on their ability and performance. We do not mean only the evaluation of classification. Way to evaluate teacher should adapt to students to enable them to understand and reflect the results of their work in physical education. According to the curriculum (1995) must be a comprehensive assessment of pupils, based on the principle of individual approach to personality. When asked which characteristics respondents considered when assessing students as most important, respondents reported the following:

- activity 26,92%
- collectivity 13,46%
- theoretical knowledge 13,46%
- physical layout of the exercise 5,21%
- performance 38,46%

It follows that the most common criterion for evaluating the physical education is recognition of the efforts of pupils. The responses showed, however, that teachers still pay close attention to performance, we consider it necessary to have an emphatic respect for individual pupils. According to the curriculum (1995) is to be the main criterion for

evaluating individual improvement in physical skills, knowledge, psychomotor skills, in an effort to better performance, but also engagement in physical education.



**Pic.3 Criteria for student assessment in physical education in%**

Analysis of data on whether respondents or streams is certified in physical education students showed the following responses:

- not, but would like to pupils - 10%,
- yes, but students do not like it - 19%,
- yes, students are pleased with it - 29%,
- not because students do not want to - 42%.

Of the answers agree with the recommendation of school management institution that physical education in primary education of pupils assessed orally and in writing without classification. Answers to other questions the questionnaire showed that 29 respondents (56%) disagrees with the classification of pupils of school age physical education, but only 22 respondents (44%) would welcome the classification. The replies of the respondents encountered the following main reasons why students do not classify :

- each student is physically able – 20,68%,
- grades discourage students – 27,58%,
- trademark raise pupils stress – 51,72%.

The most common reason why they should be students of physical education grades, are the views that mark motivate students (65,21% indicated that those who agree with markings) and

a more responsible approach to physical education students (34,78%). In practice, often encountered with the fact that teachers use marks as a tool to maintain discipline. Mark is also used as a way to pressure the student, usually a source of negative motivation of pupils towards learning and their bad attitudes to teachers and schools. Reason to classify the pupils argues stress, increased anxiety and related conditions that accompany the classification. Verbal assessment was introduced to eliminate, reduce that negative effect. Verbal assessment is widely regarded as a more plastic to capture students, achievement, reflects several factors. Its possibilities should motivate students to progress step by step humane.

When asked what the word assessment in physical education, respondents would be considered revealing, 48% indicated that evaluation with a detailed description of the attitudes of students to teaching this subject, recording an increase in performance and level of physical coping skills. At the same time indicated that no detailed assessment of their workload at the time. Verbal assessment completed (not completed) is considered sufficient 16% of respondents. About 10% of respondents said that physical education students are not assessed, but valued. Detail their views have not made clear. Teachers, knowledge about the views of parents on their childrens verbal assessment in physical education expressed by respondents as follows:

- parents receive a positive evaluation of the word - 57,69%,
- parents are indifferent attitude to the assessment of their children in physical education - 42,31%.

None of the tested sample does not think parents have a negative attitude towards the assessment of verbal gymnastics.

## **CONCLUSION**

Results of research views elementaristov teachers to assess students in school physical education has shown that most respondents used the word review on this subject. Our hypothesis is confirmed fixed. Further stated that the word assessment should be detailed and reflect the attitudes of physical education student and his progress in learning and development. It is interesting that despite the fact that detailed verbal assessment believed to be correct, most lack the time for them to carry out.

None of the subjects stated that they would welcome a score, which is also used abroad. This way of expressing the activity and progress of students is not in our tradition. However, we think that a sufficiently broad range of point could sensitively express the level of the pupil,

the success, or negative attitude toward physical education. For the needs of the practice consider it necessary to publish more professional public views on verbal evaluation and ensure their availability to teachers first primary schol.

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## SUMMARY

The authors analyze the contribution of the research results of evaluation of physical education in primary education of which took place on a sample of 52 teachers from elementaristov. Necessary data obtained by questionnaire. They found that most teachers use the word assessment, which is not complete because of lack of time for its development.

# **RELATION OF GRAMMAR SCHOOL TEACHERS TO OUTDOOR ACTIVITIES AND VIEWS ON THEIR ORGANISATION**

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**KEY WORDS:** outdoor activities, teacher of physical education, interests, free time.

## **INTRODUCTION**

The nowadays community, which passes through striking economic, social and political changes delayed active movement, which is obvious to every living creature on the edge of its value scale. The common result of this negative trend is primarily the deteriorating health situation of the young population and therefore reduce the level of performance. The study of literature to make the theoretical analysis, relying mainly on Slovak proceedings and journal authors. We compare our results with the research of authors who have dealt with the interests of teachers in various regions of Slovakia as Židek and Petrovič (2008), Paučír et al. (2008), Paugschová et al. (2008) and Görner (1996).

Reported results can be used in drawing up individual learning plans. Our results focus on the importance in sports and different kinds of sports activities and that sport should not become only the necessity of compulsory schooling, but also an integral part of a healthy lifestyle of each individual.

## **THE AIM OF THE RESEARCH**

The current theoretical knowledge of the pedagogical activity of physical education teachers at secondary schools show a lack of effectiveness of teaching experience of teachers in the field of tourism and outdoor sports. For that reason our aim is to identify and evaluate the relationship of physical education teachers to outdoor activities in summer and winter at secondary schools in The Region of middle Slovakia and to show some main problems with organization of courses.

## METHODOLOGY

### Group characteristic

Research in the set of tasks consisted of 107 physical education teachers, of whom 68 were men and 39 women randomly selected from secondary grammar schools in The Middle Slovakia region. The main condition for teachers was at least five years teaching experience.

**Chart 1 Characteristic of teachers group**

–	Body height		Body weight		BMI		Year of Birth		
	sex	men	women	men	women	men	women	men	Women
<b>X</b>		180,1	167,49	82,324	65,205	25,34	23,32	–	–
<b>S</b>		6,83	6,95	9,45	8,37	2,02	3,37	–	–
<b>min</b>		166	153	66	48	19,325	18,253	1940	1948
<b>max</b>		197	183	106	80	29,056	32,046	1981	1989

Legend:

x - arithmetic mean

s - standard deviation

min - the minimum amount

max - the maximum amount

## RESEARCH ORGANIZATION

The research was realized as one of the targets 1/0808/09 VEGA grant project entitled “Tourism and outdoor activities in the way of life of the young population in the age of 16-18 years“, through interrogatory method. Research attended the grammar schools: grammar school Hlinská, Zilina; grammar school Rosinská cesta 4, Zilina; grammar school A. Sládkoviča, B. Bystrica; grammar school J. G. Tajovského, B. Bystrica; grammar school Okružná; grammar school Hronská Zvolen; grammar school Brezno, grammar school W. Moyzesa, Ruzomberok, grammar school Vrútky; Grammar school Sučany, Martin grammar school, grammar school Bytča; grammar school Čadca; grammar school Fándlyho 3, Lučenec; grammar school Revúca; grammar school Krupina, grammar school Veľký Krtíš. On the selected grammar schools was almost 100 % return of questionnaires.

## **METHODS OF DATA ACQUISITION**

In order to collect the data necessary for this work, we used the query method - non-standardized questionnaire. The questionnaire was adapted to the target group for teachers. Natures of questions were based on a topic of grant project VEGA 1/0808/09.

The questionnaire examined teachers group and includes the following topics:

1. Personal characteristics of respondents (health status, height, weight, length of teaching experience, organizational skills).
2. Favourite sports and time spent by sport.
3. Increasing professionalism, continuing education.
4. Organization of courses at schools.

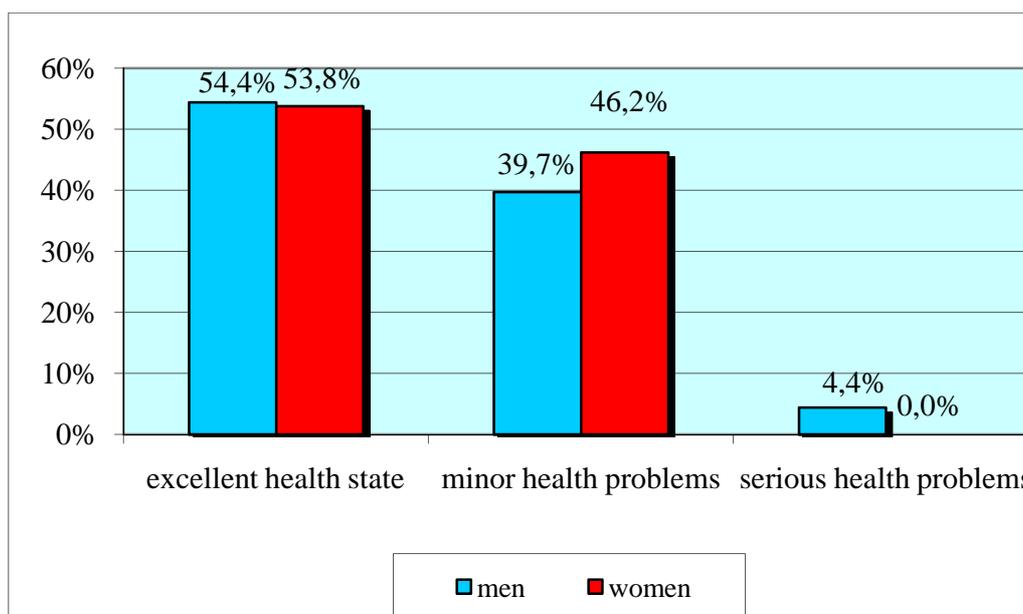
## **METHODS OF DATA PROCESSING**

By processing the collected qualitative - quantitative results, we used the basic methods of mathematical statistics in interpreting the results we use the method of logical analysis, comparison and generalization.

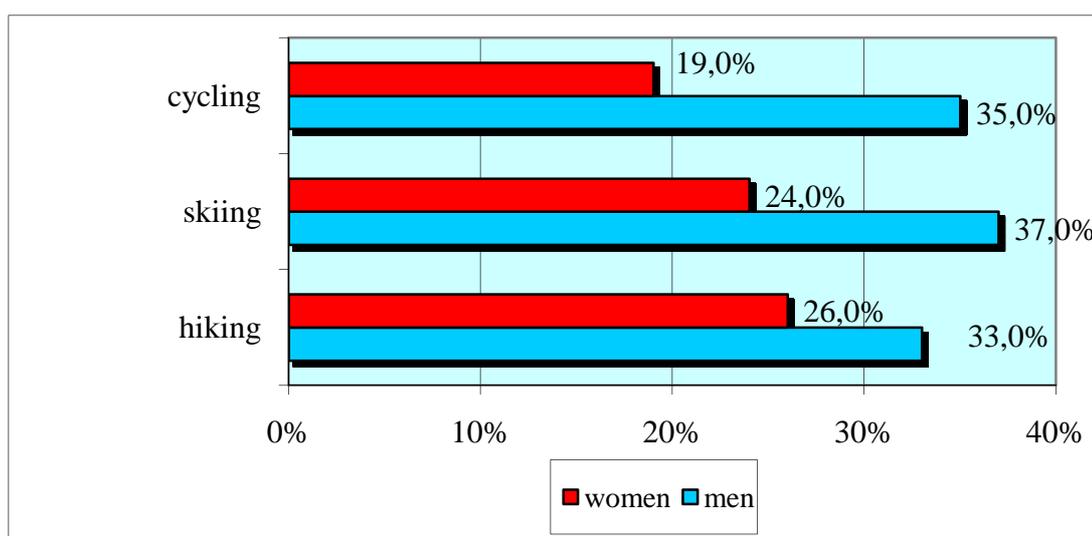
## **THE RESULTS**

### **Health state of teachers**

Knowledge of current health state of our respondents (teachers) is essential and important for the efficient operation of teaching physical education teachers in the field of outdoor sports. It is not very gratifying that only 54.2% of respondents considered their health as good, respectively feels healthy and relatively high percentage (42.1%) respondents have minor health problems, of which is 46.2% women and 39.7% men (Figure 1).



**Fig. 1 Health state**



**Fig. 2 The most popular outdoors activities among teachers**

### **Technical proficiency in skiing**

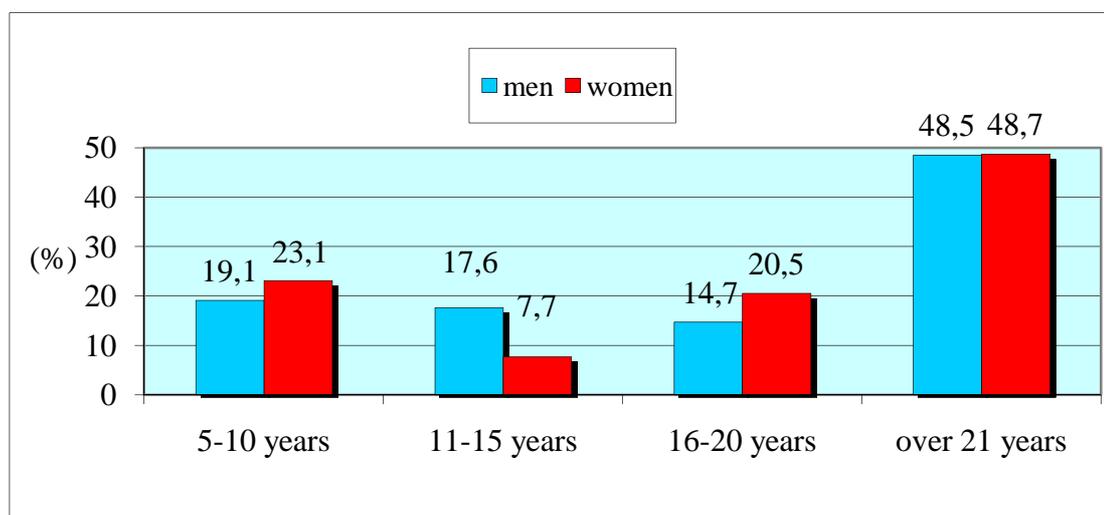
As it became clear that skiing is the most popular sport in nature so we wondered how technically proficient are our respondents. We found consistently that 92.5% of which 92.6% men and 92.3% women dominated parallel classic turns. Slightly fewer respondents controlled carving turns - 70.1% of respondents it is 64.1% of women, in contrast to the Paugschová et al. findings (2008) there were only 30% women and 31.8% men, which is quite a big difference. Classic technique of cross-country skiing controls 83.8% of men and 76.9%

women. Skating technique dominates slightly less of the respondents and 72.1% men and 59.1% women.

### **Technical proficiency in snowboarding**

Today, sport that seriously competes with the skiing is the "youth sports" - snowboarding. We wondered how many respondents know the technique of this sport. Of the 107 respondents only 16 teachers, representing 17.6 % men and 10.3 % female dominated slide turns and 8 teachers it is 10.3% men and only 2.6% of women carving turns. This alarming state troubled us because the snowboarding go trough world "boom" and inspires more and more young people and their teachers now have to support these young people and adapt on the new trends in sports. In the development of snowboarding among teachers of physical education we see reserves, which should be removed as soon as possible. For this reason our Department of physical education studies included snowboarding as a compulsory part of the ski course in the first and the third year Master's degree.

### **Time period of teachers' pedagogical experience**



**Fig. 3 Pedagogical experience of teachers**

Similar findings with our research have Židek and Petrovič (2008) in their research in The Western Slovakia region where the category 21 years and more are included to 58.6% men and 48% of women. This observation is indeed confirmed by our current nation-wide trend of an aging of physical education teacher and even teachers in the educational sphere (Figure 3).

### **Education and dissemination of technical and practical knowledge**

From our set of respondents their practical skills and theoretical knowledge extends only 29% of respondents. For comparison, the findings of Paučír et al. (2008) from The Eastern region show us that knowledge extends 64.3% of respondents and 35.7% of respondents are not interested in further education.

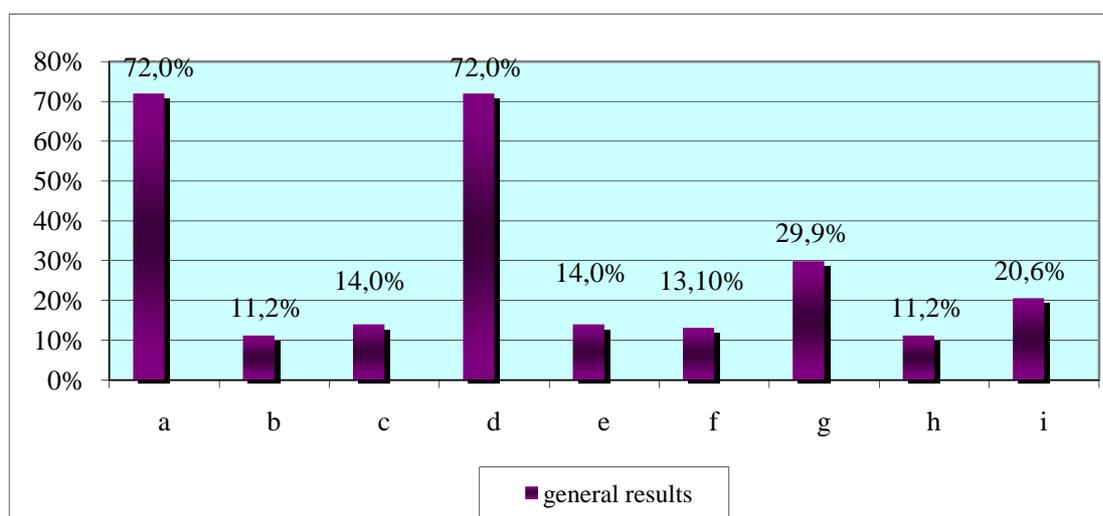
Individually extend their knowledge horizon about 69.1% men and 46.2% women. Their organizational skills that are in teachers' practice TV very important, highly assessed 63.6% of respondents and by 22.4% of respondents are on average level

### **Hourly amount of outdoor activities during the week**

It is positively that 45.8% of teachers, of which 52.9% men and 33.3% women is more than 4 hours weekly devoted to different active physical activity. On the other hand, we assume that the low percentage of sport have the reason in poor health state of respondents. Less than one hour a week is devoted to sport 8.8% of men and 2.6% of women. In Western Slovakia region, according to findings Židek and Petrovič (2008) showed that less than 1 hour a week is devoted to outdoor sports 12% women and 6.9% of men.

### **Problems in organizing hiking and outdoor sports at grammar schools**

As you can see in figure 4, the biggest problem in organizing sports at grammar schools our respondents note lack of finance and lack of interest.



**Fig. 4 Problems in organizing hiking and outdoor sports at grammar schools**

Legend:

a -finance

b - natural conditions

- c - the reluctance of parents
- d – lack of interest
- e - lacks of support from school management
- f - lack of support from colleagues
- g - undervalued importance of outdoor sports
- h - legislative problems
- i – lack of a licensed instructor

### **Satisfaction with the organization, contents and material equipment**

To avoid some errors in the organization of courses and to eliminate them, it is important to know the views of our respondents. Very satisfied with the organization and contents of courses are 24.3% of respondents. Satisfied are 55.1% of the respondents from this account it is 60.3% of men and 46.2% of women and very unhappy are about 1.5% of men.

Next question was about satisfaction with material equipment on courses. As good material equipment evaluate 43.9% of respondents, 41% women and 45.6% men. But the number of dissatisfied respondents is also significant it is 29.9% of respondents. To compare the state in the western region, here we present the observation of Židek and Petrovič (2008). In this case, is very satisfied with the material equipment 44.8% of men and 48% of women and dissatisfied were 13.8% men and 12% of women.

### **CONCLUSION**

We tried to identify and evaluate the relationship of teachers of physical education to outdoor activity in summer and winter at grammar schools in central region of Slovakia.

Results of the research showed good health condition for most teachers but the length of teaching experience is almost half of respondents over 21 years. Our findings showed that teachers' technical proficiency in selected winter sports is at a high level. Reserves are shown in the carving technique in skiing and snowboarding too. Teachers expressed satisfaction with the content and organizational courses, but have been less satisfied with the material equipment. Based on the results the biggest problems in organizing outdoor sports are lack of finances and lack of interest by the students. Therefore we need to more attract these activities and evenly to new forms.

It is gratifying that either winter or summer courses positively affect the development of relationship to physical activity in nature, which are an essential part of health prevention against diseases, whether cardiovascular, musculoskeletal and mainly psychological in nature. Disturbing situation is stationary and obese youth commits us to do. Changing social conditions, brought political and economic changes but also the civilization of the disease and minimal interest in youth work, which begins to show on the top sporting events where is the lack of talented young sport generation. We believe that time will come when competence at all levels will realize this.

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# **ANALYSIS OF THE ANNUAL TRAINING CYCLE OF REPRESENTATIVE IN MODERN PENTATHLON FOCUSED ON SWIMMING**

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**KEY WORDS:** sports training, capacity of training, swimming practice, swimming productivity

## **INTRODUCTION**

Modern Pentathlon is a sport with a long tradition. It was founded by baron Pierre de Coubertin, with a view to preserve the idea of the ancient pentathlon that means that he wants to educate versatile athlete with harmonious development of his personality. Unlike the ancient pentathlon he chose all of the modern disciplines: shooting, fencing, swimming, horseback riding, jogging and he called this new kind of sport the modern pentathlon.

The sport was first introduced in the program of early modern Olympic games in Stockholm in 1912 and since this year modern pentathlon hasn't been missed of any Olympics. Originally, it was just army sport because of its complexity and only some senior officers should compete. By the time, even women were introduced in this sport under the Olympic rings. In the 2000 Olympics in Sydney, specifically.

Swimming is one of the five disciplines of modern pentathlon. Swimming belongs into the most favorite sports and it is an important part of modern pentathlon.

## **PROBLEM**

Modern Pentathlon is one of the traditional Olympic sports, however, like many sports it needs time to adapt and change its rules, only the disciplines were never changed.

Currently, competition begins with fencing. Competitors use cord system fencing. Every sportsman hits each opponent ones. The time limit to hit the opponent anywhere on the body is one minute. Competitor gets 1000 points when he reaches 70% wins in all matches.

Point value for a victory is pictured in the table and it depends on the number of matches.

Second discipline is to swim 200 meters freestyle. When the participant reaches time of 2:30 (2 min. 30 sec.), he or she would get 1000 points. In recent years, yet in 2008, competitor gained 1000 points in time 2:40. They pushed the limit to 2:30 because swimmers are stronger and faster from year to year. Each second is 12 points. Resulting time is rounded to 1/3 of second.

The third discipline is horseback riding. Each rider completes show jumping out of 12 obstacles and 15 jumps (some obstacles are double jump or triple jump). The maximum height of obstacles is 120 cm and maximum length of it is from 350 to 450 meters. Riders have 20 minutes to get familiar with a horse. At the beginning, every competitor gets 1200 points. This number is reduced by rider mistakes (e.g. dropping barriers, refusing obedience, timeout, fall, jump obstacles out of sequence etc.), (Novotný, 1997).

The last part of modern pentathlon is combined discipline. It consists with running and shooting. The first competitor (after the three disciplines) extends the time 0:00 and the next competitors are getting on the track with their corresponding time-point loss to the loss of yet leading competitor. Shooting station is 40 meters away from the starting area. Competitors will pass it by firing on 5 folding targets. He may leave the shooting station after he shoot down each target. The time limit for shooting down the targets is 70 seconds. After this time, runner is leaving the shooting station even the all targets aren't shot down. Then competitor runs one kilometer. After this he gets the second shooting. In this way athlete completes 3 shootings on folding targets and runs 3 times 1 kilometer.

Combined discipline in the modern pentathlon was introduced in 2009 because of increasing attractiveness in this sport. Rules in the modern pentathlon are still in progress because officers want to attract people.

## **OBJECTIVE**

The aim was to analyze the annual training cycle in the swimming discipline of representative.

## **TASKS**

1. Determine the initial value level of the individual disciplines MP for representative in ATC 2008/2009.
2. Analyze ATC swimming through daily training.

3. State and evaluate the various events and major competitions.
4. Process, compare and evaluate individual results
5. Propose more effective swimming workout.

## **HYPOTHESIS**

We are expecting increase in swimming performance of representative by fulfilling the ATC during 2008/2009 period.

## **METHODOLOGY**

Characteristics of observed representative

**Table 1 Personal data of the Senior Representative of Slovakia and a member of VŠC Dukla Banska Bystrica in the Modern Pentathlon.**

<b>Name</b>	<b>Date of birth</b>	<b>height(cm)</b>	<b>Weight (kg)</b>
<b>L. K.</b>	26. 2. 1986	177	60

**Table 2 The best personal results in ATC 2008/2009 in MP discipline.**

<b>Modern pentathlon discipline</b>	<b>Result:</b>	<b>Points:</b>
Swimming 200m fs.	2: 23, 7	1076 points
Fencing épée	25V/10D	1000 points
Combined event	13: 23, 0	2148 points
Riding		1156 points

## **CHARACTERISTICS OF THE RESEARCH SITUATION**

The research was done at the senior representative of Slovakia in the modern pentathlon and also a member VŠC Dukla Banska Bystrica during ATC 2008/2009. Research was conducted on the basis of its annual training plan and results of completed events.

Analysis of ATC was done in 2008/2009 from 29 December 2008 to 27 December 2009. Slovak representative in modern pentathlon regularly participates in international

competitions and she also participated on SRCH, PLCH, HUCH, WC, ECH and WCH during our research.

**Table 3 Distribution analysis of ATC period 2008/2009**

<b>Period</b>	<b>Begin</b>	<b>End</b>
Preparatory	29. 12. 2008	23. 2. 2009
Main	24. 2. 2009	8. 11. 2009
Transitional	30. 11. 2009	27. 12. 2009

Preparatory period (29th 12th 2008 - 23 02 2009)

The task in the preparatory period was the increasing aerobic and anaerobic endurance. In this period there is a visible increase of intensity and volume load. At the end of this period was planned 10 days long fitness focus showcase in Kraliky near Banská Bystrica in the highlands area.

Main period (24 02 2009 - 08 11th 2009)

The main period has been designed to prepare representative for the most important races of the season, namely: the World Cup in Szekesfehervar, Hungary, European Championship in Leipzig and the World Championships in London. During this period we have concentrated mainly on shorter tracks of swimming with an emphasis on speed with regenerative breaks.

Transitional period (30th 11th 2009 - 27 12th 2009)

During the transitional period modern pentathlonist played other kind of sport and tried the different types of regeneration in Kraliky near Banská Bystrica in the highlands area.

#### **Methods of obtaining data**

Studying method of literary sources

This method is used to obtain knowledge of the history of the discipline on its current state and a prognosis of its development in the field of research methodologies (Starší - Görner, 1995).

#### **Method of content analysis**

This method was used to obtain information through personal papers of representative (training diary).

#### **Interview method**

Interviews were made by the method of controlled conversation. These interviews, we gathered important information about training methods and coaches' practices. Management methods were subjected to interview coaches:

- Dusan Polacek - Modern Pentathlon of Slovakia team coach and the head of VŠC Dukla Banska Bystrica.
- Jiří Walter – swimming coach VŠC Dukla Banska Bystrica

### **Methods of evaluating data**

In the evaluation we used the basic methods of assessment, namely:

- Analysis - the spread of the phenomenon to its characteristics and relationships between components.

We spread the information, data, processes for individual parts, and we determined the relationship between phenomena (relational analysis), we looked for the cause (causal analysis) and relationships between them (continuous analysis).

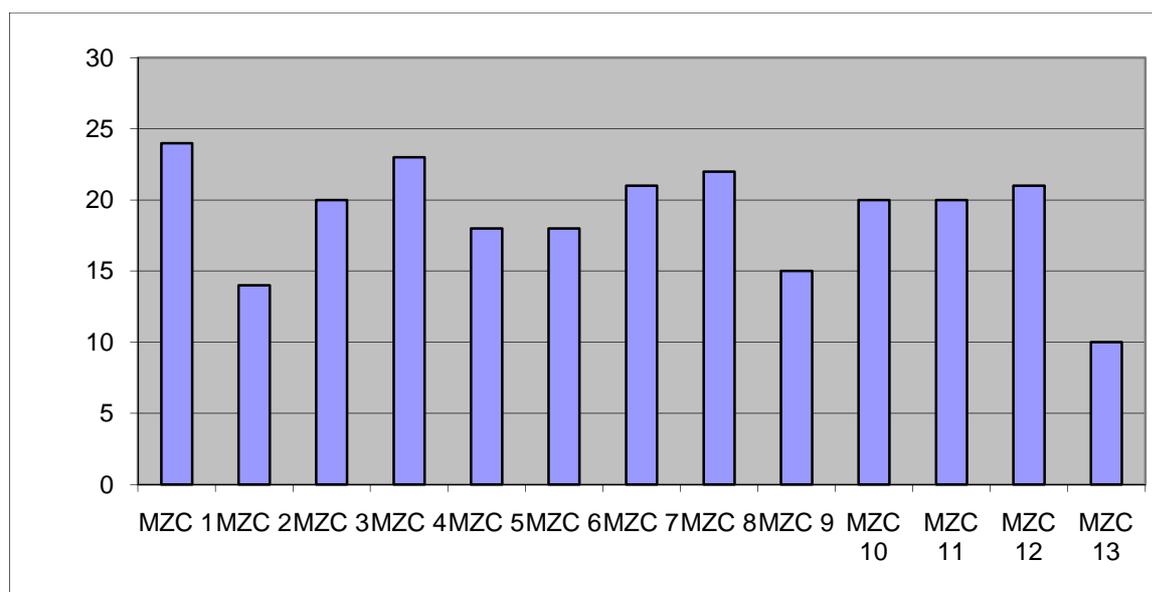
- Synthesis - combining the process of obtaining an analytical procedure. We unite divided elements of analysis into a single unit, so than we could confirm or refuse the hypothesis and we also could make assessments and measures.
- Statistics - an appropriate manner and procedure development and evaluation of the facts.

### **RESEARCH RESULTS**

From Figure 1 we can read that swim days are in range from a minimum of 14 days in MZC 2 (swimming pool was not available in Kraliky) to a maximum of 24 days in MZC 1 (there was an effort to get the lack of swimming and concentrate on swimming in MZC 2). Exceptions are days in the transition period of MZC3 in which representative attended only 10 days of swimming.

In other swimming MZC are swim days ranged from 18 to 23 and it was influenced by the number of races that representative passed during the season and also a subjective feeling of fatigue in MZC4 MZC 5 and 6th The MZC 6 is added to this sense of the light treatment with a knee injury 3 days, but the number of days of swimming weren't more affected.

No other injuries or diseases were occurred during the reporting period.



**Figure 1: Number of swim days for each MZC**

Table 4 shows that athlete made the best time in the beginning of the main period for indoor championship in Hungary. She swam faster than was her swimming time during both peak seasons (ECH and WCH in Leipzig, London). Fastest time, however, reached the international championship in Poland MZC 6, which took place after being concentrated in Prague, which was aimed at training technical disciplines. We can conclude that form in that discipline was not good timing. It is possible that this was done due to changes in training cross-country discipline, which led to a change the coach and the subsequent significant improvement in cross-country performance. The biggest decline in swimming performance was recorded in MZC 12 which ended the main period of representative. The main reason was the fatigue of representative.

**Table 4 Swam times during ATC 2008/2009. (Source: own design)**

competition, date	Swam time	Pentathlon points
indoor HUCH, 27.2.09	2:25,43	1056 p.
Sl. c. Bratislava, 14.3.09	2:28,68	1020 p.
Sl. c. B. Bystrica, 4.4.09	2:29,67	1004 p.
SRCH B. Bystrica, 25.4.09	2:26,7	1040 p.
WC Szekesfehervar, 14.5.09	2:27,97	1028 p.
PLCH, 6.6.09	2:23,7	1076 p.
ECH Leipzig, 25.6.09	2:29,6	1012 p.
HUCH, 22.7.09	2:24,79	1064 p.
WCH Londýn, 14.8.09	2:27,93	1028 p.
Bystrice, 17.10.09	2:27,3	1036 p.
AUT open, 24.10.09	2:25,11	1060 p.
Sl. c. B. Bystrica, 7.11.09	2:35,48	936 p.

**Table 5 Swam lengths during ATC 2008/2009. (Source: own design)**

MZC	km	MZC	km
MZC 1	45	MZC 8	46
MZC 2	35	MZC 9	33
MZC 3	39	MZC 10	41
MZC 4	44	MZC 11	43
MZC 5	38	MZC 12	40
MZC 6	42	MZC 13	18
MZC 7	45		

In table 5 we can see that the swam length of representative ranges from 46 km in MZC 8, when athlete prepared for the World Championships in London after 33 km. To reduce the number of kilometers influenced workouts to increase strength and reduce the length of sections. They were also contributed to reducing the number of swim days due to relaxation after the second peak of the season. Significant decrease of kilometers was recorded in the transitional period in MZC 13 when athlete used swimming just as active rest after a demanding season.

## **CONCLUSION**

Our results show that the training process has been largely focused on specific swimming (warm up and cool down). That happened as a result of focusing on other disciplines of modern pentathlon. Representative during the period focused on running and shooting which had a larger margin than in the swimming discipline. Swimming served primarily as a type of regeneration during all three periods. In the main period we could mention in training of representative special endurance, aerobic endurance and speed.

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## SUMMARY

The author dealt with the analysis of the annual training cycle representative in Modern Pentathlon focused on swimming. We focused on the analysis of swimming training, swimming training design - the various stages of training courses and sports training, components, principles and methods in sports and swimming training. Theoretical data were obtained from the studies of literary sources, which are listed in bibliographic references. Other data were obtained by observing, testing and content analysis of documents. Results

were analyzed and are displayed in graphs and tables. This research leads to recommendations for modern pentathlon coaches to select the correct volume of training load and intensity in swimming training.

# **TEACHERS VIEWS ON EDUCATIONAL PROCESS AND PUPIL ASSESSMENT IN PHYSICAL EDUCATION FOR PRIMARY SCHOOLS**

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**KEY WORDS:** physical education teacher, profiling, assessment, classification

## **INTRODUCTION**

Application of the principles of humanization in the educational process of physical education is one of the most important tasks that must physical education teachers apply at all types of schools. Recently, by the characteristic change of the education system, humanization elements become important factor of teaching process.

In this paper which is part of the solution 1/037070/08 VEGA grant project, we will focus on identifying the views, interests and profiling of physical education teachers, as well as the assessment and classification of school physical education for 2nd level of primary schools in Žiar nad Hronom.

## **PROBLEM**

Humanistic approach in education is characterized by respect for the child's personality, recognizing its value as a man who deserves the interest and seriousness without regard to its current state, which means also the attitude towards the pupil, which does not deny any of its rights. Such approach also rejects in education anything degrading the dignity of the pupil in the eyes of others and himself. The primary and key in the process of humanization of education in terms of school is a teacher. Decisive in this process is the personal attitude of teachers regarding particular willingness to make changes in the way of education, creativity, willingness to learn and love to students. If he wants to educate students of personality, he must be a personality himself.(Kosova, 2000).

Physical education teacher's personality, its profiling, interests are considered by several authors (Antal, 1997; Bebčáková, 2002, Chovanová, 2005, Kasa, 2006; L. Bence, 2009; and others) not only as one of humanisation, but also motivating factors in educational process. Today, when in primary schools there is a conversion of content in teaching different subjects, it is important to find out profiling, interests, opinions of teachers teaching in school physical education as well as its assessment and classification.

School physical education is one of those subjects where pupils become strong motivating force in particular the diversity and variety in the choice of physical activities. Properly selected physical activities, but also their variety and diversity, teachers' interest and their professional orientation significantly affect the level of physical performance and fitness, the level which is currently the school physical education major indicator information.

## **OBJECTIVE**

The article aims to identify profiling, interests, opinions of teachers teaching in compulsory school physical education and the assessment and classification in school physical education.

## **METHODOLOGY**

In the file we included physical education teachers of primary schools in the city of Žiar Hronom, where currently operate the following primary schools:

- Primary school, ul. M. R. Štefánika č. 7;
- Primary school, ul. Jilemnického č. 2;
- Primary school with Kindergarten Štefana Moyses, Ul. A. Kmeťa č. 1;
- Primary school, ul. Dr. Jánskeho č. 2.

At those schools, physical education for 2 the level of primary school is taught by 10 teachers who are 3 men. All teachers have graduated II. Degree of university studies. One teacher graduated from a teacher for the 1 st. level of primary school, one teacher does not have an approbation of a physical education and one teacher did not mention subject of her studies. The average age of male teachers was 49 years and the average age of female teachers was 40.72 years. The average time of practical training was 20 years.

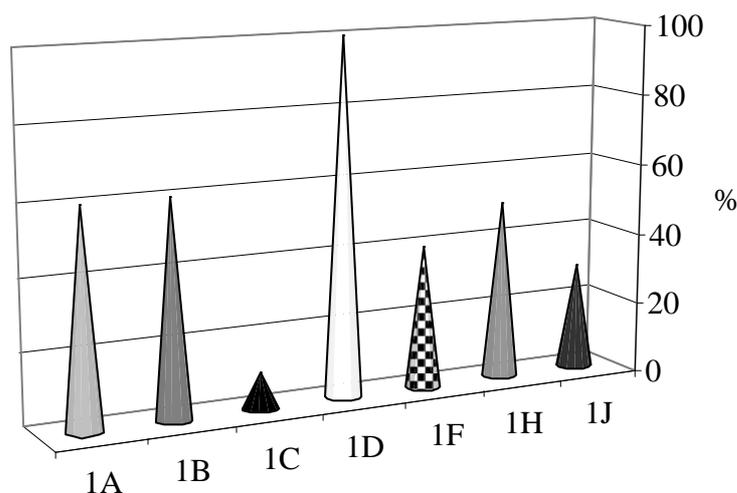
At referred primary school we did the research with the consent of directors in the month of September in the academic year 2010/2011.

To obtain the data, we used the questionnaire method. The questionnaire is not standardized. We used two questionnaires, which were named as a questionnaire A and questionnaire B. A questionnaire consisted of two parts, the first part contained in addition to the introductory questions also 11 questions about profiling, interests and views of teachers teaching in compulsory school physical education. By questionnaire B, which contained nine questions, we surveyed the views on the assessment and classification of physical education for 2nd level of primary schools.

## RESULTS

In the first part we present the results of the questionnaire A. Subsequently, we present findings by evaluating the responses to the questionnaire B.

By the first question in the questionnaire A we wanted to determine which activity teachers prefer by PE. All teachers prefer when teaching PE sport games (1D) (Fig. 1).



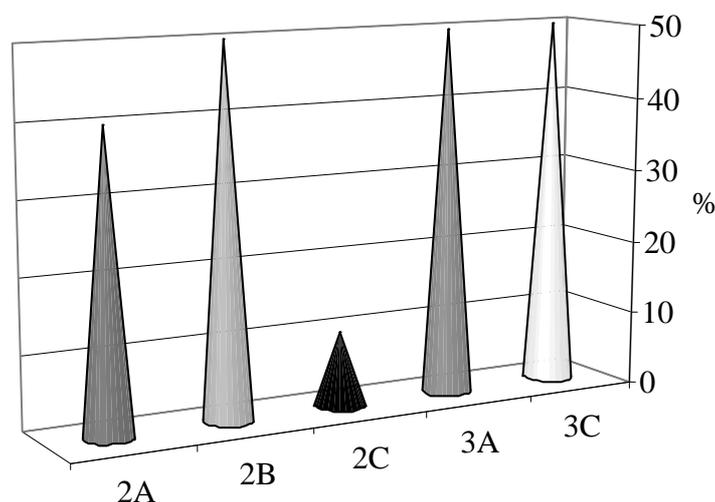
**Figure 1 Teachers' answers to questionnaire A 1st question**

Three (including 2 women) did not mention which sport games they prefer, 3 women prefer volleyball, 3 teachers (including 2 women) prefer soccer, basketball prefers one teacher, as well as one teacher prefers dodgeball and 1 teacher prefers football. Athletics (1A) is preferred by six teachers (including 4 women), gymnastics (1B) is also preferred by six teachers (including 4 women), physical games (1H) are preferred by five teachers (including 4 women), rhythmic gymnastics (1F) is preferred by 4 (including 3 women), other physical activities (1J) are preferred by 3 (including 2 women) and one teacher prefers skiing (1C).

From other physical activities, two female teachers preferred strength training and conditioning exercises and one male teacher preferred strengthening too.

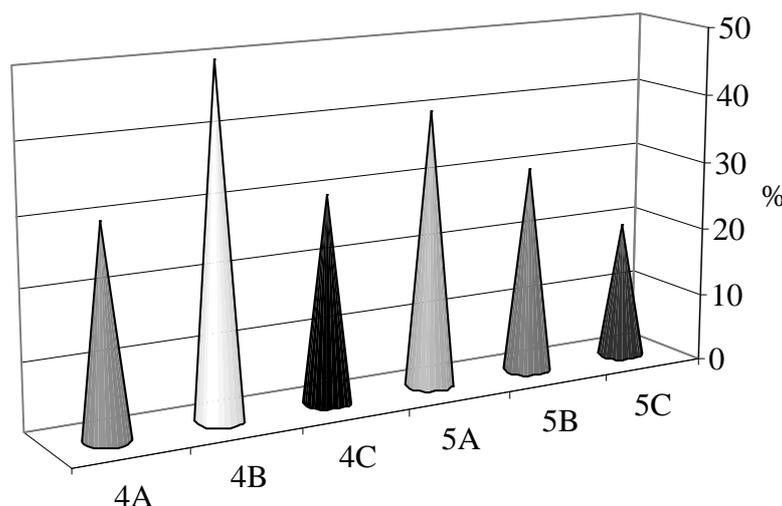
By second question, we determined if the teachers respect by the PE teaching curricula and teaching plans. Four teachers (including 2 women) responded positively (2A), 5 (including 4 women) reported that their mostly respect (2B) and 1 teacher respects them partially (2C).

The third question was aimed at respecting the interests and views of students on various physical activities in school teaching of PE. Half of teachers (including 3 women) said they respect the interests and views of students (3A) and half (including 4 women) in this respect the direction of students in part (3C) (Fig. 2).



**Figure 2 Teachers' answers to questionnaire A 2nd and 3rd question**

In the fourth question we asked teachers whether they consider the current subsidy of PE lessons at primary school as sufficient. Three lecturers responded positively (4A), 3 teachers (including 2 women) reported a negative response (4B), 2 teachers (including 1 woman) have identified opportunities 4B, 4C (other - a proposal) and both suggest at least three hours of PE a week and one teacher said that it is at first necessary to create conditions and then consider increasing the number of hours of PE. One teacher did not choose any of options (Fig. 3).



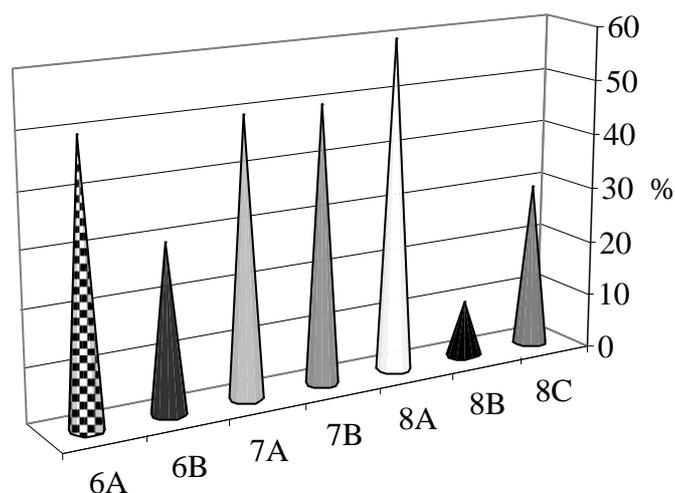
**Figure 3 Teachers' answers to questionnaire A 4th and 5th question**

In the fifth question teachers had to give opinions to different subsidy PE hours devoted to teaching sports games for girls and boys. Three lecturers have agreed to such a grant (5A), 3 teachers disagreed (5B), a teacher chose 'other' (5C) and proposes to create conditions, one teacher has identified options 5A and 5C. This one suggests to create the conditions and states that boys and girls have different interests. One teacher and one teacher did not indicate the option of either one.

In the 6th question teachers had to express their views whether there is continuity in the teaching of physical activities within the curriculum and teaching plans between particular grades, respectively compared to non-school PE. Five teachers (including 3 women) responded to this question positively (6A), 3 teachers have identified a partial continuity (6B) and 1 male and female teacher did not answer.

Within the seventh question we asked teachers whether they have after-school sports club. Five teachers (including 2 women) reported a positive response (7A) and the remaining five teachers does not lead a club. One man did not say what kind of club he leads. The other four teachers reported that they are leading football, respectively. table tennis, respectively volleyball, respectively aerobics sport club.

The subject of the eighth question was the use of modern multimedia tools for teaching PE. Six teachers (including 4 women) said they use when teaching PE particularly projector, computer, internet, video (8A). One teacher uses these tools in part (8B) and 3 teachers (including 1 woman) stated that they do not use any (8C), because students must actively practice and not sit (Fig. 4).



**Figure 4 Teachers' answers to questionnaire A 6th, 7th and 8th question**

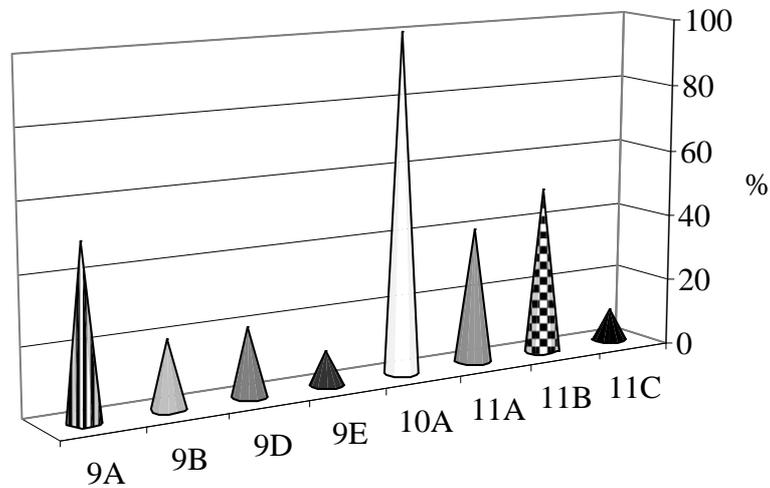
The ninth question is directly related to teachers because they had to report how much time a week they devote to movement activities. One hour during the week (9A) was stated by 5 teachers (including 4 women), 2-3 hours (9B) is dedicated to the movement of two teachers (including 1 woman), more than 4 hours (9D) was given by 2 teachers (including 1 woman) and one teacher does not spend time by moving activities at all (9E).

By tenth question we wanted to determine whether teachers devote themselves to acquiring new knowledge and information necessary for full implementation of the teaching practice. All teachers responded positively (10A). The most common way for teachers is to consult one another and multimedia resources, media. Less used is the study of literature and the least preferred are training and courses.

Within the last question we wanted to know whether the university adequately prepared the teachers for the implementation of the teaching profession of Physical Education. 4 teachers responded positively (including 3 women), one female teacher replied negatively and 5 teachers (including 3 women) responded that their school partially prepared them. (Fig. 5).

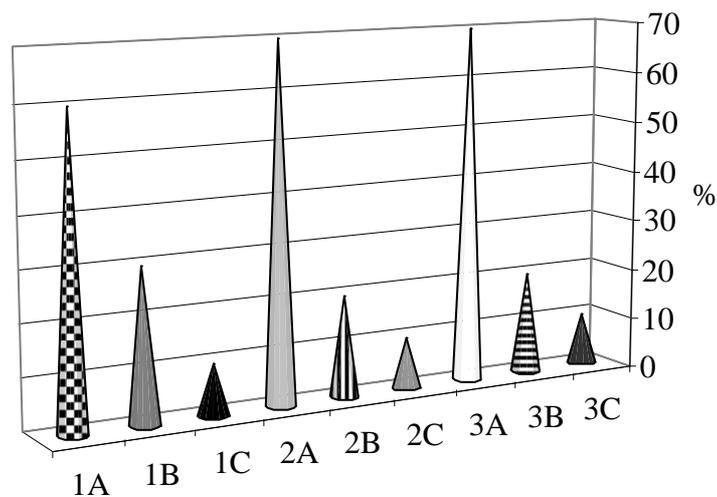
In the questionnaire B, we detected by the first question, whether teachers consider the assessment, classification in school physical education as an important factor of the educational process? From the answers to this question, we found that the teachers surveyed considered assessment or classification as an important factor of the educational process (1A) 6 (including 4 women) respondents. Three teachers (including 2 women) said that the

assessment, classification is not important in the educational process (1B). One teacher said the answer "I do not know" (1C).



**Figure 5 Teachers' answers to questionnaire A 9th, 10th and 11th question**

By second question, we surveyed teachers' views on impact assessment, classification of changes in the level of physical abilities and skills. Positive answer (2A), reported 7 teachers (5 women), two (including 1 woman) reported a negative response (2B) and 1 teacher identified the answer "other" (2C). She said that assessment, classification influences someone rather motivative, but towards the physical abilities and skills they do not have a major impact (Fig. 6).

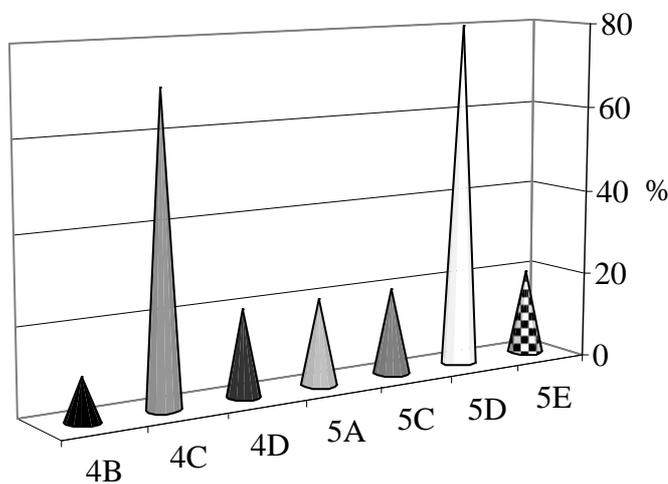


**Figure 6 Teachers' answers to questionnaire B 1st, 2nd and 3rd question**

The third question was focused on teachers' views on the appropriateness of the assessment, classification of physical education by mark. Positively (3A) responded 7 teachers (including 4 women), negatively (3B) responded two women, one of which stated that all children are not equally proficient. One teacher could not answer (3C). The most common reason of positive responses was the motivation and one teacher said that as a result of evaluation, classification exercise also those who do not have a mood for doing it.

In the fourth question teachers had to indicate the method of classifying, which they consider in physical education as appropriate. "Scoring (4B) is considered as best by one teacher, the assessment mark (4C) was identified by seven teachers (including 4 women) and evaluation by set-off - passed - failed, did – did not completed (4D) is being appropriate by two teachers.

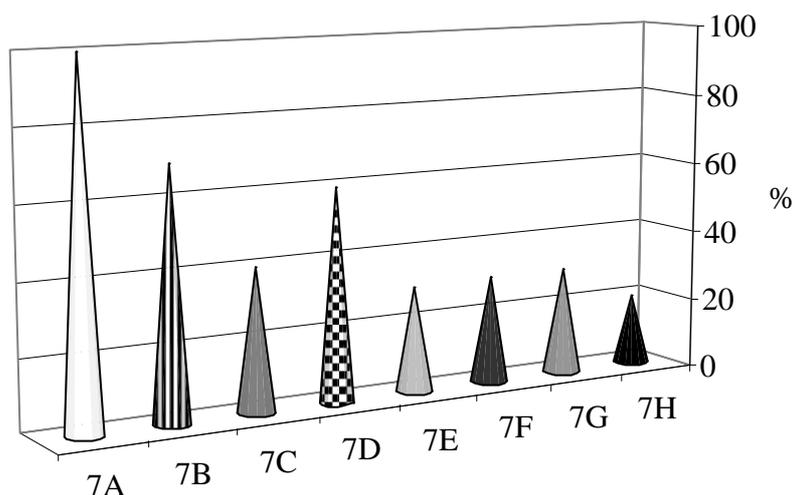
By the fifth question of questionnaire B, we asked teachers for their method of assessment, classification of pupils. Four teachers continually assess student (5D), 2 women reported that they assess by mark. One male and female teacher classify pupils by mark (5A), one man and one woman stated that they implement input and output assessment (5C) and also classify continuously (5D) and one male and female teacher and identified continual assessment (5D) and summary evaluation, classification (5E) (Fig. 7).



**Figure 7 Teachers' answers to questionnaire B 4th, and 5th question**

Within seventh question we wanted to find out what teachers take into account in classifying a pupil in school physical education. All teachers take into account pupils' sedulity (7A), 7 teachers (including 5 women) take into account the improvement in motor skills (7B),

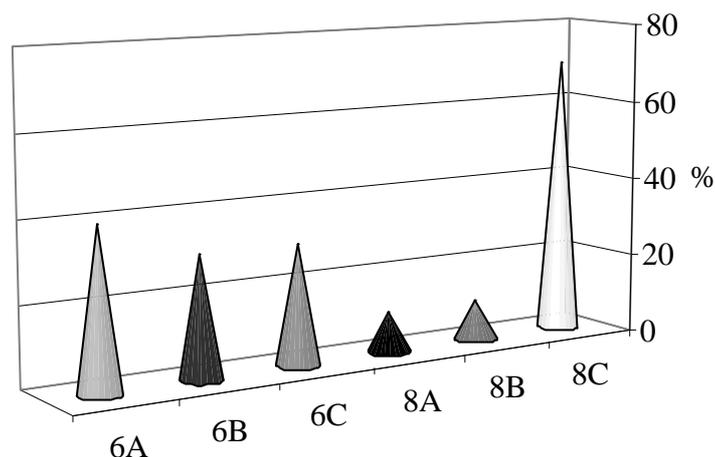
6 teachers (including 4 women) reflects the activity of pupils (7D), 4 teachers (including 2 women) take into account increase of physical performance (7C), 3 teachers (including 2 women) take into account the representation of the school (7E), 3 (including 1 female) student autonomy (7F), 3 teacher discipline of pupil (7G) and 2 (including 1 woman) take into account the theoretical knowledge (7H) of pupil (Fig. 8).



**Figure 8 Teachers' answers to questionnaire B 7th question**

In the sixth question teachers had to indicate whether they comply by the evaluation of PE with achievement in other subjects. Four teachers (including 3 women) identified a positive response (6A), 3 teachers (including 1 woman) reported a negative response (6B) and 3 women stated that they partly respect the pupil's achievement in other subjects (6C).

In Question 8, the teachers had to state whether they have knowledge about other types of classification of pupils in the school PE abroad.



**Figure 9 Teachers' answers to questionnaire B 6th and 8th question**

Seven teachers (including 5 women) has no such knowledge (8C), one man has the knowledge (8A) from the Czech Republic and France, and 1 woman has a partial knowledge (8B) about the set-off, percentage score (Fig. 9).

Within the last question in the questionnaire B, we wanted the teachers to bring specific proposals for assessment, classification of pupils respectively changes in assessment, classification in school physical education. This question was answered only by 5 teachers. Three (including 2 women) indicated that the classification by mark is satisfactory, one man said he has no proposals and one woman suggested a score assessment. Five teachers did not respond to this question.

## CONCLUSION

The aim of our work was finding profiling, interests and views of teachers teaching in compulsory school physical education and the assessment and classification in school physical education for 2nd level of elementary schools in town Žiar nad Hronom. Positive findings are particular that the teachers respect in teaching school PE the interests and views of students and that they are dedicated to acquiring new knowledge and information necessary for full implementation of teaching practices and that they are trying to use modern multimedia equipment in the educational process. Obtained and presented findings may help in making new, forming concept of school physical education. Our results presented are only a small probe into the teaching of physical education in one city, but they can become the basis for extensive research on issues of humanization in the educational process in school physical education in elementary schools.

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## SUMMARY

In this paper the author focused on gathering the views on the issue of humanization of the educational process and student assessment in physical education. The knowledge gained may indicate the direction forward for the creation of new curricula in the content conversion of the school system for primary schools.

# **THE USE OF PHYSICAL MOVEMENT GAMES TO TRAIN AND IMPROVE AN INDIVIDUAL'S GAME PLAY ACTIVITIES IN VOLLEYBALL BY THE SECOND LEVEL PRIMARY SCHOOL STUDENTS**

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**KEY WORDS:** motion games, school physical education, physical activity, education, middle school age.

## **INTRODUCTION**

In games children get introduced to the environment, preparing for work. First games for children imitate adult work, therefore we can say that the game comes from working and is as old as man himself.

According to Vladovičova (1998) teachers knew long ago that by playing teacher has a great opportunity to learn about the character of children. How a child behaves during a game, so it will behave in a real life. Knowing the child and its diagnosis is a prerequisite for active teaching, to develop a child's attitude in a positive direction.

Motion game is understood as deliberate, conscious, organized physical activity of two or more people in space and time, with in advanced voluntarily agreed and followed the rules. It is characterized by tension, joy, gladness, high motivation to work, by applying familiar skills, comfort and often competition. (Adamčák - Novotna, 2009; Michal, 2000).

According to Jalecz - Veisova (2001) the definition of physical play, in terms of its development but mainly from the possible goal of physical education results that physical games for pupils of school age are of great importance: in education, health, pedagogy, recreation and sports.

### **Pedagogical significance**

With reference to Jalecz - Veisova (2001) Education through game is the key medium for children in second level of primary schools. Motion game encourages the development of autonomy. Decisive is not the type of games, but what game develops. Student behavior in the game refers to the degree of discipline and his social nature which does not lead through commands, moral declarations, but through the sense of a need of appropriate partner.

### **Health significance**

The purpose of exercise is mainly cultivating and maintaining a good physical condition, which is characterized by good health (Rovný, 1980). Motion game contributes to healthy growth and development of children.

### **Educational significance**

According to Dewey (1991) all peoples in all times, relied by bringing up their children on the game and the game play action, because it instructs children about the world they live in and also teaches them how to live. The game is also important because it creates conditions for spontaneity, joy, thus fulfilling an important condition for success (Adamčák, 2005).

With reference to Jalecz - Veisova (2001) game from the earliest age affects the development of moral-will powers of an individual.

### **Knowledge significance**

After Jalecz - Veisova (2001) physical game takes a significant part in the intellectual upbringing of a child. A game for a child is not only fun, it is also a great school of life. Playing the child improves basic motor skills, under the control of the teacher learns to develop them and convert them into ability.

### **Sports significance**

Many games are of physical and competitive nature but are also preparing an individual for particular sport games. In schools there are organized competitions, for example. in "Dodgeball" or "of changing over the net". Already at an early age a child may show interest in such activity and with the right support of a teacher become a successful athlete - representative (Jalecz - Veisová, 2001).

### **Relaxation and recreational significance**

According to Jalecz - Veisova (2001), the motion game in school age may become a mean of relaxation and regeneration of mental powers. Although it is a kinetic activity it may not be performed only on hours of physical education. A type of a creative teacher can use the motion game as a tool for learning in other subjects and thus spontaneously self-motivate the students to work, also to force their desire for new knowledge without memorizing and coercion.

Studies in specialized literature (Krska - Adamčák, 2008) confirmed that physical games are mostly used in teaching through thematic games. In our research we also focused on this issue.

Practices of sports games through games of motion are being put forward by teachers and attach great importance to this issue. According to known authors who are in their publications devoted to games of motion (Zdenek, Rovny), these games while practicing are of great use because the situations which players have to deal with through the activity of an individual or group are similar situations like in sports games. This idea is being developed in the form of finding appropriate preparatory games for various sports games (Hondlík - Kouba - Rape - Nick, 1992).

Volleyball falls to a group of sports games with great popularity around the world. The game is net- and reflects- game. Player in the game must cooperate with teammates and is out of the personal direct contact of an opponent. (Zapletalová - Allocation, 1996)

Volleyball is one of the busiest and most popular physical activities in school physical education. It is designed for boys and girls. The content of base curriculum is focused on selected information (rules, basic terminology, basic characteristics of game play activities, organization of hours allocated to matches, the functions necessary to implement the matches), physical activity (gaming systems, combinations and gaming activities of the individual), activities associated with the organization of matches.(Mikeš, 1997)

We agree with the Adamčák and Krska (2008) that a playful form of sports games are still the most preferred physical activity by students, they encounter not only in school physical education, but also outside school.

In the process of teaching sports games is to contribute to the development of fitness and coordination skills, to improve physical fitness, consolidation of health and to compensate the unilateral psychological burden of students. Aim of the lesson is the formation of personality characteristics as self-control, self-discipline, decision making, strength, strength and resistance to fatigue. Through sports game we cultivate the discipline of students in

observance of the rules, developing a sense for the team, creativity and emotionality.

## **OBJECTIVE**

The aim of our study was to investigate the use of physical movement games in practice and the improvement of game play activities of an individual in volleyball with students of the second level primary school.

## **TASKS**

1. Study of literary sources
2. Development of a questionnaire for physical education teachers
3. Evaluate the results obtained
4. Formulate conclusions for practice

## **METHODS**

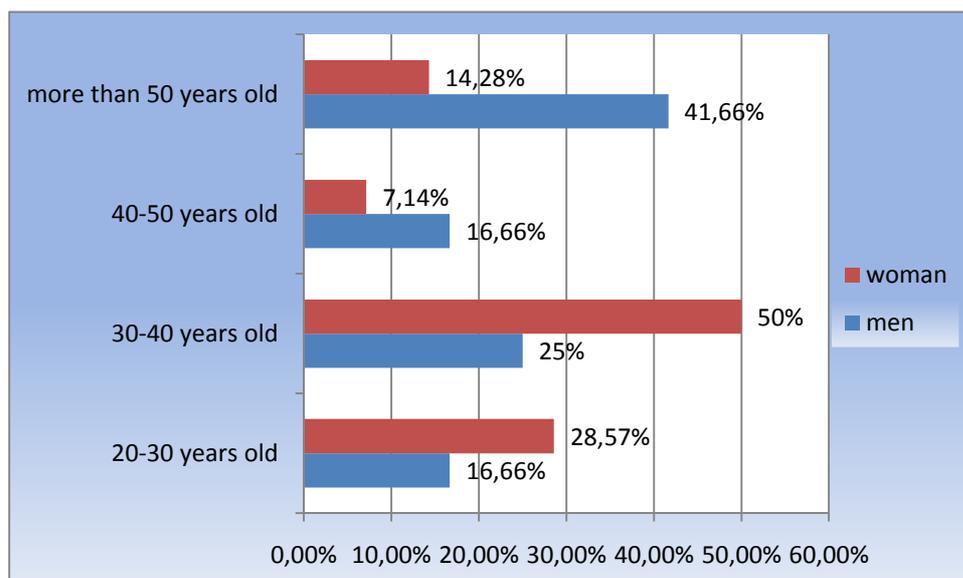
Examined sample in our survey are teachers of physical education at secondary level schools. We selected primary schools in the Orava region and have decided to make a random selection of schools. We sent out questionnaires to 34 schools and 26 to be returned. Through the questionnaire, we found out answers to 14 questions, which we evaluated through percentual results and recorded graphically to provide a better overview.

Evaluating the first, second and third question, which sounded - "indicate sex, age and length of pedagogical practice", we found out that of 26 respondents 14 women and 12 men of different ages and different length of teaching experience have answered. The results we have obtained regarding the age are visible in Picture 1.

Evaluating the second question, we also found out that in male sex dominated the respondents aged over 50 years. On this basis, we conclude that the younger generation has not that interest in working in this profession.

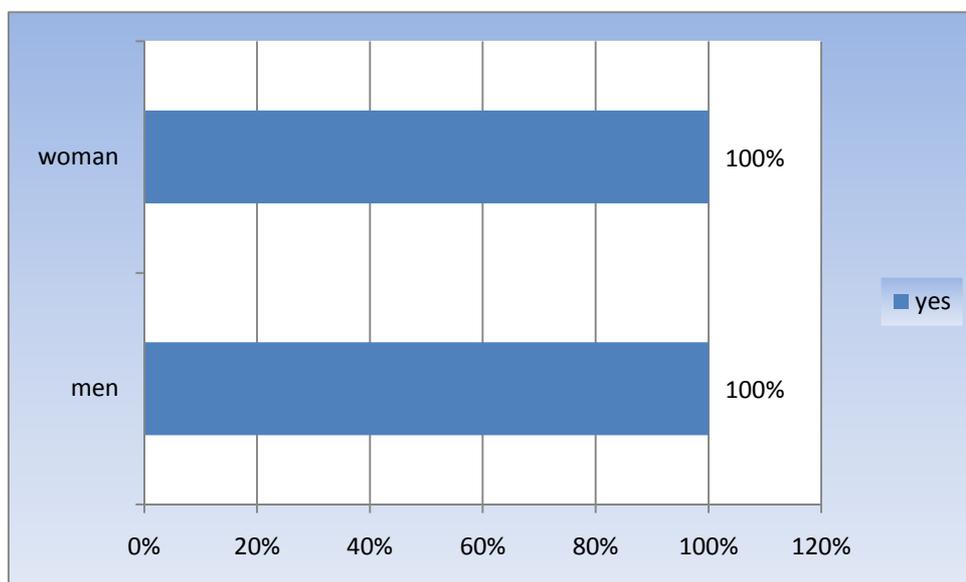
## **RESULTS OF WORK**

The female sex predominant age was of 30-40 years. This age group comprised 50% of women. We consider as positive fact if a young teacher operates in the school, because we believe that the young teacher brings new experience acquired during his studies and may be beneficial for older age groups of teachers.



**Picture 1 Age group of respondents**

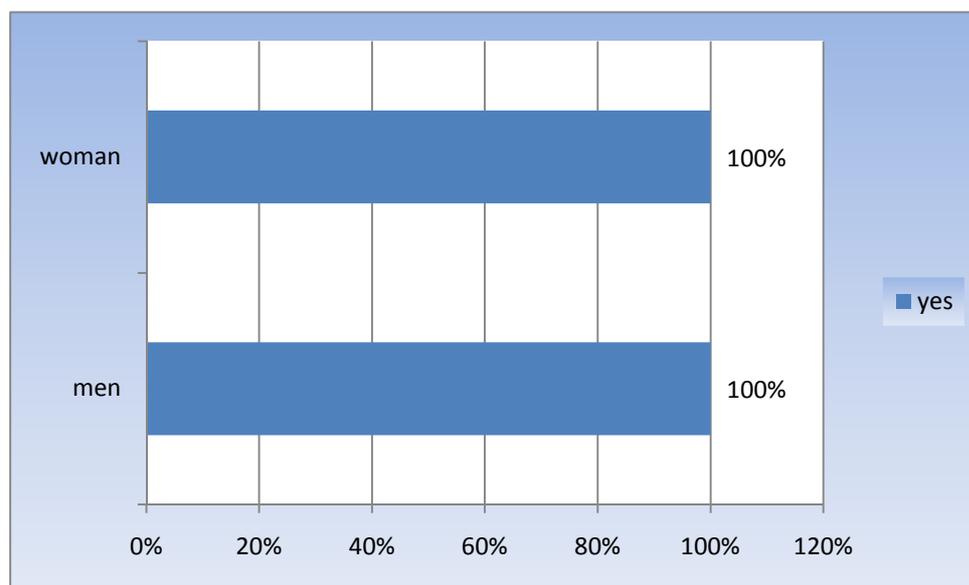
The fourth question, which sounded - "do you use movement games in class", all respondents answered positive (Figure 2), by which we understand that all respondents use physical movement games in physical education classes.



**Picture 2 The use of physical movement games in the physical education classes**

The evaluation of the fifth question - "do you think, it is important to use physical movement games in lessons of physical education", 100% of respondents reported a positive

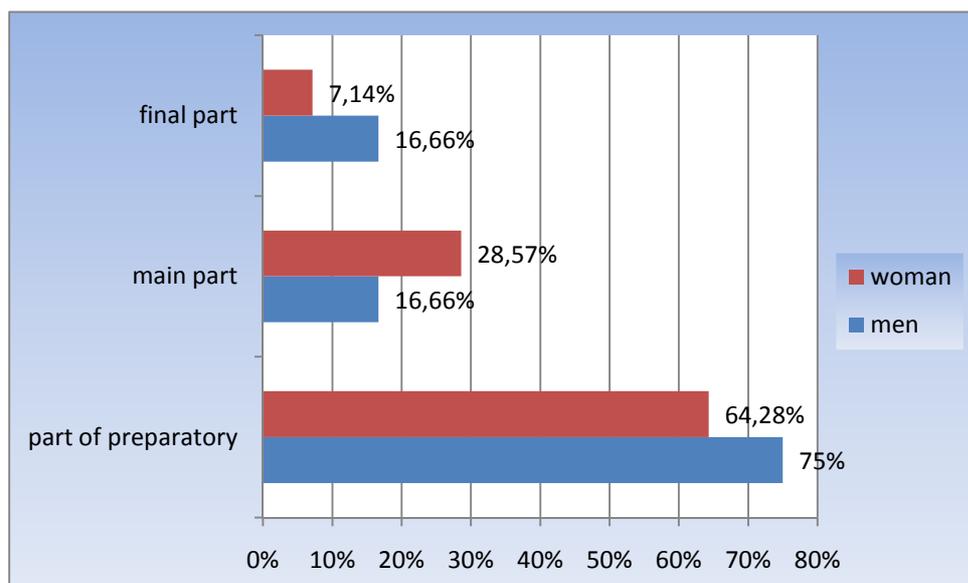
response. (Picture 3). We believe that not only teachers, but also every single person is aware of the importance of using movement games. Based on the responses we can say that teachers attach great importance to the motion games, but we believe that in practice they are not using them up to 100%.



**Picture 3 Relevance of physical games application in terms of respondents**

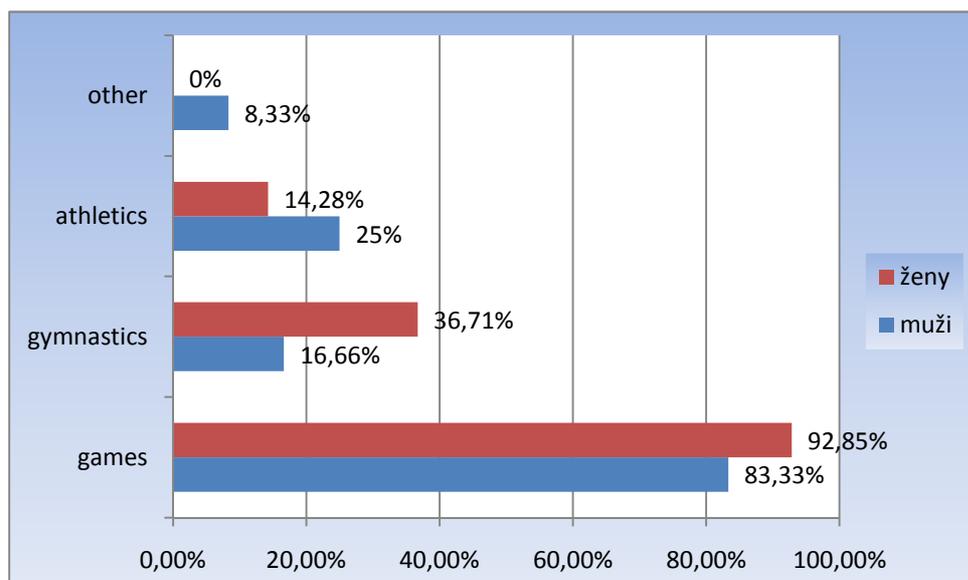
The sixth question we asked - "in which part of the lesson are the physical movement games included". We have found out that 64.28% of women are using movement games in the preparatory section, 28.57% in the body and 7.14% in the final part. By men, 75% used physical play in the preparatory section, 16.66% in the main section and 16.66% in the final part. The results we achieved in our questionnaire surprised us. We assumed that at this point, all respondents will be focused on the preparatory part. Based on the results we can conclude that teachers have no problem to use physical play, not only in preparation section but as well in other parts of classes.

We believe that the inclusion of physical games in the main section may contribute to more positive results, as well as in increase of interest and easier absorption of learning stuff. However, it is important that the teacher will ensure an appropriate mix of physical games. We think that wrongly, incorrect and inappropriate physical game can have negative even abhorrent reflection on children. We also consider that in the last part it is not recommended to include a physical game, because students should at the end of the lesson play the game itself. Exact percentage results are reported in Picture 4.



**Picture 4 Results of the most common use of physical games in different parts of the teaching lessons**

Seventh evaluated question - "please indicate in which theme you use physical games most", we found out that from all our mentioned choices, most respondents mentioned the possibility of using movement games in sports games. Women sports games gained 92.85% and men 83.33%. Precise results obtained in other thematic units are presented in percentages in Picture 5.



**Picture 5 thematic unit with the most frequent use of physical games**

In the eighth question - "do you add volleyball game into the thematic unit to practice and improve game play activities", after evaluating the questionnaire we found out that everyone - 100% of respondents replied positively. Although all respondents answered this question in positive, when dealing with specific game activities we have acquired diversity of responses. For more information see the evaluation of specific questions.

Evaluation of the ninth, tenth, eleventh, twelfth and thirteenth question we identified diversity of answers by the respondents. The responses of men to various questions are recorded in Picture 6, results of women in Picture 7.

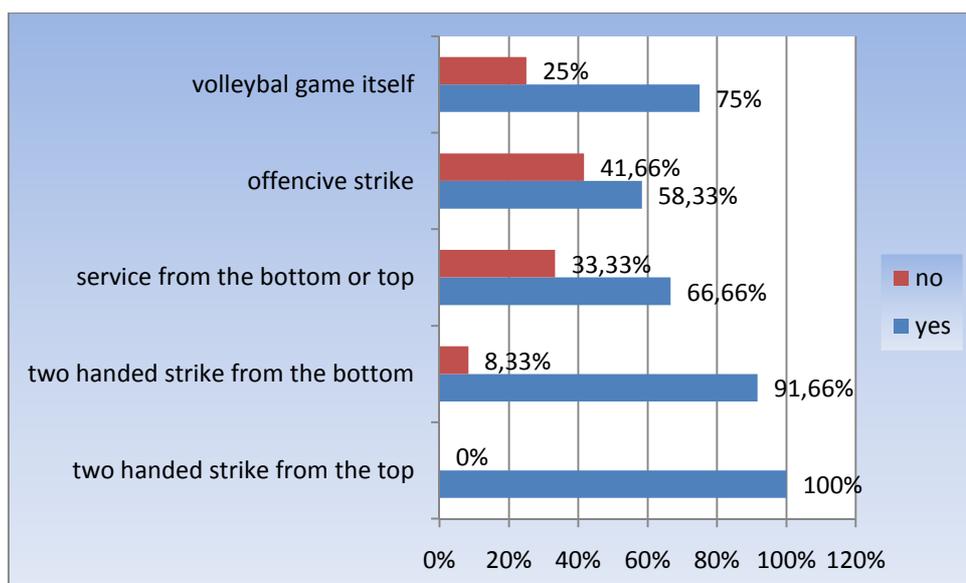
The ninth question - "do you include movement games in training and improving of the two-handed strike from the top", all the men replied positively but only 92.85% of women responded positively.

The tenth question - "do you include movement games in training and improving of the two-handed strike from the bottom", 91.66% of men and 71.42% of women replied positively.

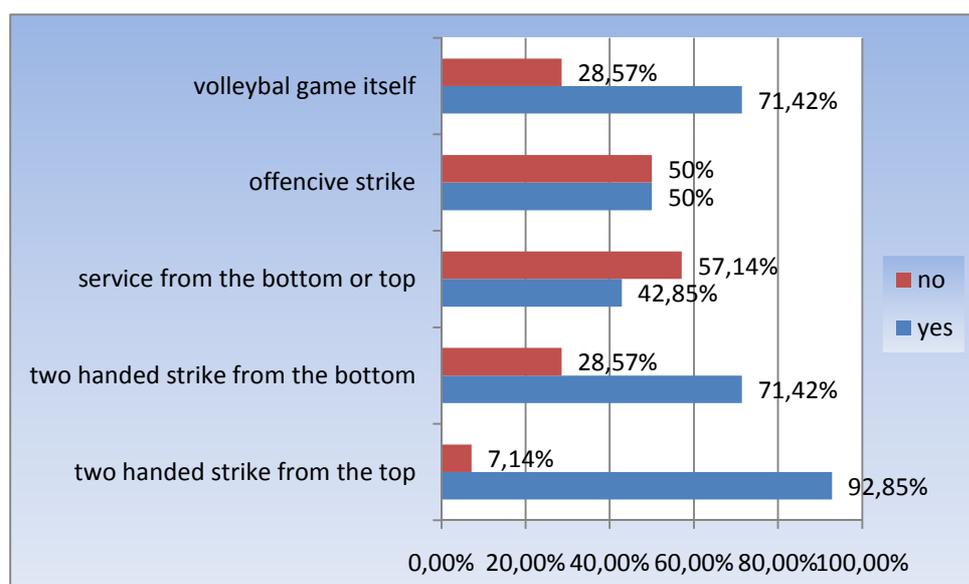
The eleventh question - "do you include movement games in training and improving of the service from the bottom and top", 66.66% of men but the majority of women 57.14% responded negatively.

The twelfth question - "do you include movement games in training and improving of the offensive strike", responded 58.33% of men and 50% of women positively.

The thirteenth issue, "do you include movement games and exercises to improve the volleyball game itself", 75% of men and 71.42% of women answered positively.



**Picture 6 Results of application of physical movement games to train and improve gaming activities in men volleyball**



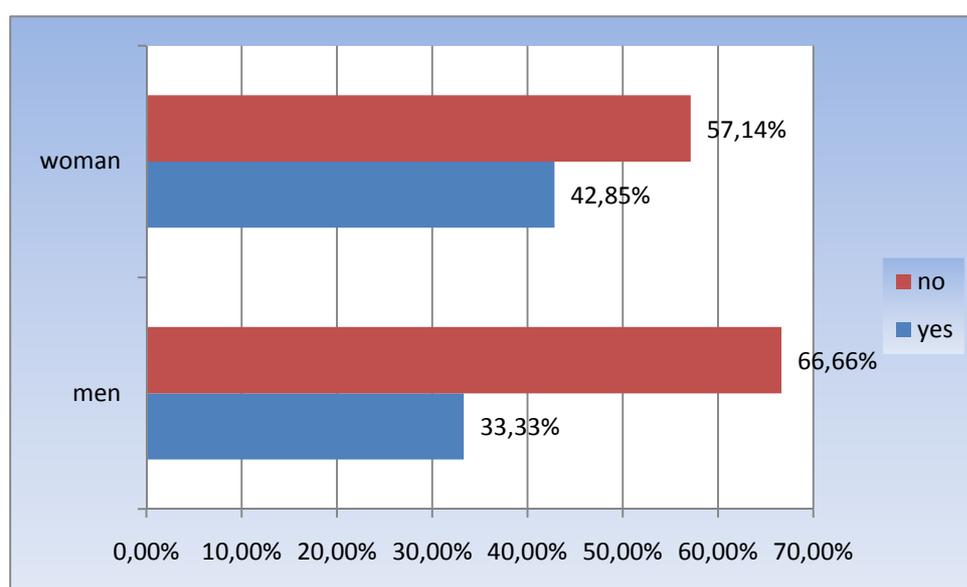
**Picture 7 Results of application of physical movement games to train and improve gaming activities in women volleyball**

Evaluating the questions, we found out that physical movement games are used in teaching volleyball and most frequently in practice to improve two-handed strike from the bottom and top. We found also that teachers have a weak knowledge; we might even say that an alarming insight about physical games. We concluded it on the basis of answers; teachers

had problem to give an answer to at least one motion game they use. In the evaluation we have come across the fact the respondent gave an affirmative answer, but could not respond to the game used.

We have also found out that physical movement games for training and improving game activities are more frequently used by men than women. This finding surprised us a lot, because we expected women use games more.

The last question - "are you devoting your leisure time in gathering information about physical play", assessing the results we observed that both females and males responded negatively. The exact percentages are recorded in Picture 8.



**Picture 8 The interest of respondents to new motion games**

Evaluating this issue, we have found out that teachers in their leisure time do not take into account the acquisition of information about new movement games. We think that teachers should realize that every new game they have learned but also will use in the class is half the success. We all know that the game is a driving force in the activities, natural based and interesting method of learning, so why are the teachers making it difficult.

## CONCLUSION

The basic objective of school physical education is and should be the increase in the functional and physical performance of pupils and the formation of a positive and lasting relationship with physical activity (Krska - Adamčák, 2008).

The aim of our study was to investigate the use of physical exercises and games to improve an individual's game play activities in volleyball by the second level primary school children.

With our work we would like to contribute to the detection and understanding of the importance of physical games, as we consider them a starting factor in the formation of a permanent relation to physical education and sport. Through the correct application of physical games in the learning process, teachers of physical education can significantly affect this relationship. However, we are not talking only about the introduction of motion games preferred by pupils, but particularly the application of new motion games unknown to children. We agree with, that every teacher should create his own book of physical games and constantly enrich it with new games. Work of many authors reveal a fact that many teachers use only a limited amount of physical games (an average of five) and other ideas for physical activity, which is in conflict to an offer on this kind of literature.

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## **SUMMARY**

The aim of our study was to investigate the use of physical movement games in practice and the improvement of game play activities of an individual in volleyball with students of the second level primary school. Examined sample in our survey are teachers of physical education at secondary level schools. We sent out questionnaires to 34 schools and 26 to be returned. Through the questionnaire, we found out answers to 14 questions, which we evaluated through percentual results and recorded graphically to provide a better overview.

## **INTEREST ABOUT PHYSICAL ACTIVITY AT ELEMENTARY SCHOOLS**

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**KEY WORDS:** first level of primary schools, physical education, physical activity,

### **INTRODUCTION**

Teaching of physical education must be adapted to the material and financial conditions of particular schools. Directive and bureaucratic norms consisting in orders and bans, which had a negative influence on the development of independence, activity and creativity of the teachers as well as the pupils, have been gradually removed (Šimonek 2004). The schools without appropriate conditions for carrying out the plans of particular thematic units can solve this problem by higher subsidization of obligatory thematic units, by integrating some seasonal activities or, in the ultimate cases, including also other movement activities and exercises, which can be carried out outside. Considering this fact during the adjustments of curriculums, we should not forget to include the activities from the thematic unit „seasonal activities“ such as summer or winter hiking, exercises in nature, skating, skiing, sledging, swimming and the others .

We agree with the assertions of some authors (Adamčák 2005; Bartík 2009; Junger 2000; Gorner, 1996; Chovanová – Majherová 2006; Nemeč 2004; Vladovičová – Novotná 2005) that pupils express heightened interest in those movement activities. The pupils also concern themselves with other activities such as roller-skating, mountain biking, etc. which are not so far included in curriculums.

During the adjustments of the thematic units it is very important to respect the principles of multilateral development of a pupil, safety precautions for teaching the PE,

material conditions of a school, surrounding environment of a school, school traditions and students' interests.

According to Šimonek (2004) and Bartík (2009) and in correspondence with previous statements, the educational process should ensure sufficient daily movement activity of various sorts for every child at the first level of a primary school (1-4 Year) and so help them develop the functions of their organs and organisms in an appropriate way, equalize the monotony caused by their student occupation. We should also assure them active recreation in the clear environment to get some fresh air, mainly after the difficult mental activity, which was quite demanding on their central nervous system.

## **AIMS**

The aim of our research is to find out new pieces of information, which would contribute to the solution of problems of using the natural environment in the PE process at the first level of primary schools.

On the basis of the knowledge gained from literature and individual experiences from a teaching process, we know the PE process at the first level of primary schools is dependent upon the spatial conditions, which can be quite often classified as insufficient. Despite this fact, their including in the PE process is inadequate and insufficient. That's why we suppose: seasonal activities are very popular amongst the pupils at the first level of primary schools, although boys prefer different activities than girls. We suppose pupils will call for the including of particular seasonal activities in the PE process.

To achieve the aim and verify the hypotheses of our research we have set the following tasks: To find out (at chosen schools) the structure of pupils' interest in particular seasonal activities, which are (or should be) included in the PE lessons at the first level of primary schools. Research was carried out under the project Kega 352-006PU-4/2010.

## **METHODOLOGY**

One of our research tasks was to ascertain the interest of first-level pupils in particular seasonal activities. To achieve this task we used the form of enquiry for pupils. The source materials were obtained from pupils at primary schools in the region of towns Banská Bystrica, Martin, Dolný Kubín. There were 521 boys and 341 girls in the examined group.

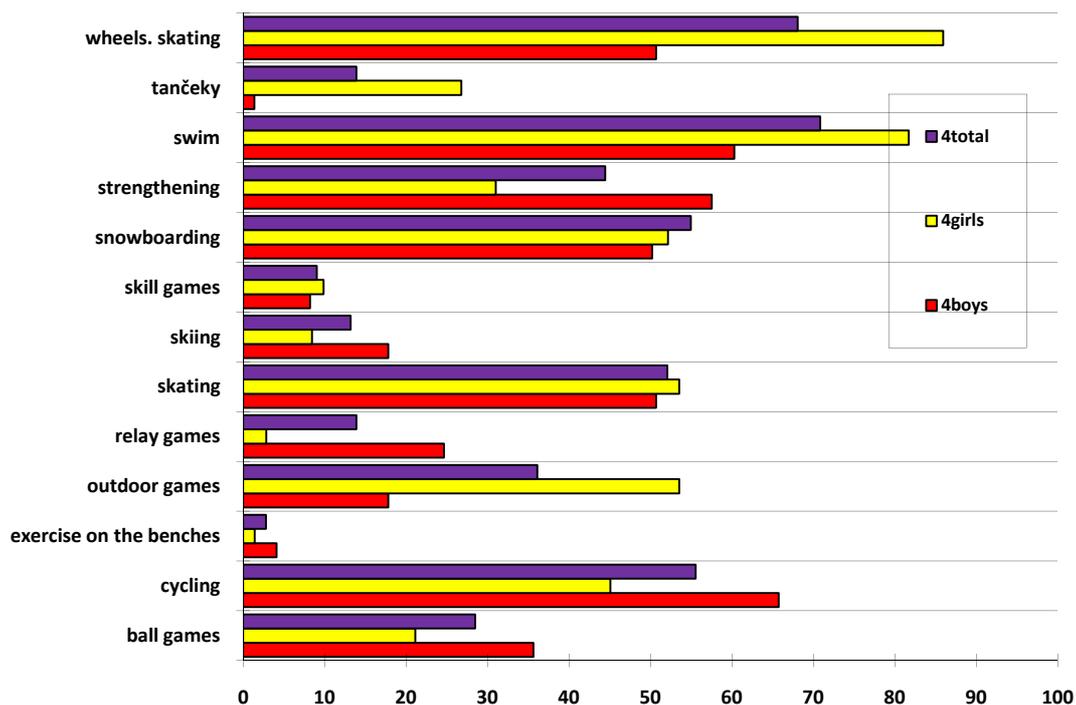
We tried to direct the selection of methods in a way that would provide us with a sufficiency of data for the problem analysis. We decided for this method in compliance with determined tasks and our work aim. We considered it as an appropriate method for gaining a lot of information and data needed for our research. We focused on obtaining the picture of schools' equipment either with material conditions or PE objects; including the PE lessons in a timetable. We got some knowledge about the use of methodical materials aimed at the seasonal activities.

We worked up the enquiry for the pupils at the first level of primary schools, by which we were finding out the popularity of a physical education among the other subjects, childrens' interest in particular movement activities within the PE lessons etc. The enquiry was anonymous and contained three questions defined in a way that would give us the data necessary for fulfilling the aim of our research task.

## **RESULTS**

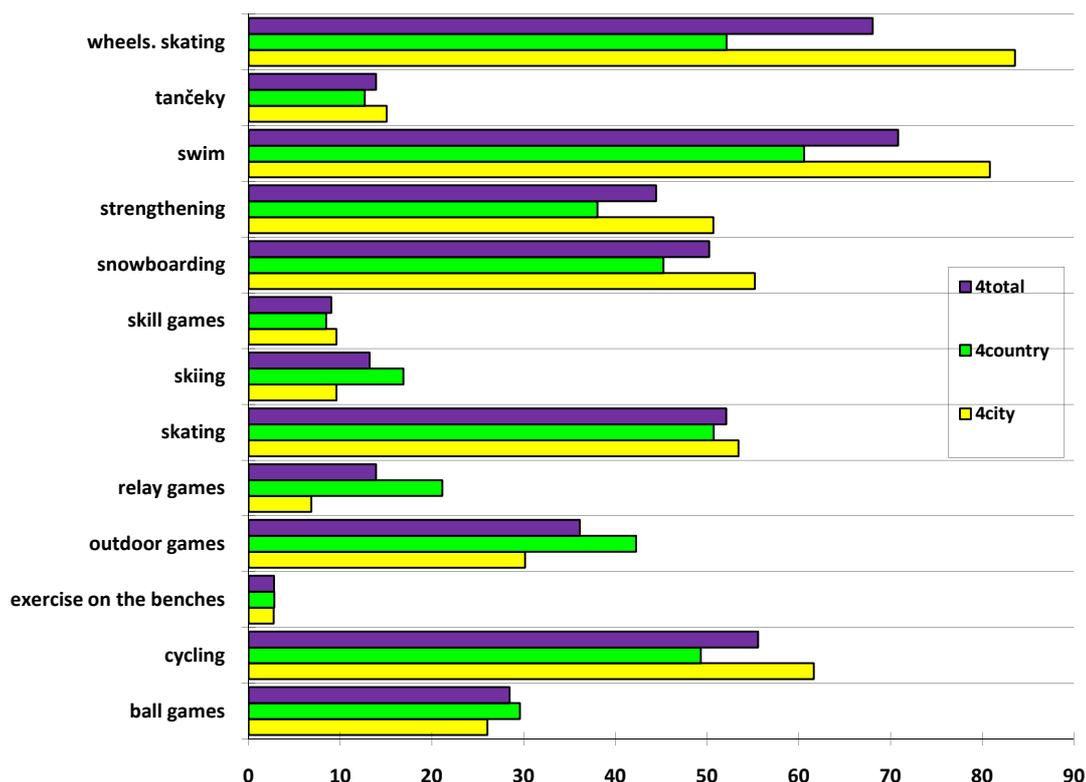
Another question of our enquiry intended to find out, which movement activities pupils would like to carry out in PE classes. The pupils' task was to select 5 movement activities from the total of 13. Before the analysis, we divided pupils according to their gender (boy and girl) and region (town or village), regardless the year they are in.

The pupils' interest in seasonal activities continues also in a fourth-year (pic.1 and pic.2). Among the most demanded movement activities belong swimming (69,21%), roller-skating (64,52%), snowboarding (54,96%) and cycling (51,55%).



**Pic.1 The interest of fourth-years in the including of movement activities, in relation to their gender**

Bodybuilding (55,42%) joined the other favourite activities among the boys such as cycling (68,27%) and swimming (59,24%). The girls in a fourth year would like to practice roller-skating (84,55%) and swimming (87,23%) the most in their PE classes. They would be glad to go to nature and play various games (52,55%) too. Concerning the region, there are no significant differences between the interests of pupils in towns and the ones in rural areas. Children in towns prefer pursuing the activities such as roller-skating (84,12%), swimming (79,56%) and cycling (60,27%). Their peers at rural schools are interested mostly in swimming (60,12%). Roller-skating took second place among the most popular activities (51,89%), in spite of the fact there are not appropriate conditions to carry out this activity in rural areas. The following activities include skating (50,89%), cycling (50,14%) as well as the games in nature (43,56%).



**Pic.2 The interest of fourth-years in the including of movement activities, in relation to region**

As we can see from the particular results, the most desired movement activities among pupils include swimming, cycling, ball games, roller-skating. The research has shown that activities which got lately within the sphere of pupils' interest, have not been so far settled in curriculums. That's why children can carry out this activities just during their free time (or they don't carry them out at all). On the whole, there is only a fractional difference in the interest of boys and girls in this age bracket to carry out seasonal activities. With regard to region, there is a greater interest in roller-skating among the pupils at town schools.

## CONCLUSION

The one of the reasons to elaborate this work was our knowledge that the seasonal activities are sporadically classified into the PE classes and the implementation of curriculums from the bases of particular seasonal activities is not performed with the form of motivating and interesting games and exercises. The teaching of seasonal activities begins and also often ends with walks into school environs and regular exercises in nature, two times a year. Many pupils at the first level of primary schools do not meet with the seasonal activities that are

ordained by educational curriculums. By our work, we would like to contribute to make pupils gain the bases of particular seasonal activities already at the first level of primary schools.

An improvement of present inconvenient state could be done by purposive and intentional preparation of particular pedagogical faculty students. The students should be during their studies already familiarised with a question of particular seasonal activity management and organization. Pedagogical faculties have to quickly react to new trends in area of seasonal activity progress and development (roller skating, cycling and so on).

It is necessary for wide teaching public in co-operation with methodical centres, Ministry of Education, educational unions in particular regions to prepare and publish the methodical handbooks, from which teachers should gain the ideas for an implementation of particular movement activities, exercises and games focused on seasonal activities.

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## **SUMMARY**

To achieve the aim and verify the hypotheses of our research we have set the following tasks: To find out (at chosen schools) the structure of pupils' interest in particular seasonal activities, which are (or should be) included in the PE lessons at the first level of primary schools. The source materials were obtained from pupils at primary schools in the region of towns Banská Bystrica, Martin, Dolný Kubín. There were 521 boys and 341 girls in the examined group.

The one of the reasons to elaborate this work was our knowledge that the seasonal activities are sporadically classified into the PE classes and the implementation of curriculums from the bases of particular seasonal activities is not performed with the form of motivating and interesting games and exercises.

## **SELECTED PROBLEMS OF PUBLIC FINANCING OF SPORTS IN SLOVAKIA**

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**KEY WORDS:** finance, sport, public finance, allocation

### **INTRODUCTION**

Two important aspects of sport finance in Slovakia are discussed in this paper. The first research goal is to estimate the role of public finance in sport in the country. We expect that especially small sports may depend too much on public grants. The second goal is to evaluate the system of allocation of grants to sport bodies in Slovakia – how the level of grant is decided and the concrete ways of providing resources from the state budget. The normal situation would be transparent allocation system and modern public financial management approaches, but we expect some problems in reality.

Standard research methods for this type of article are used – analysis, synthesis, simple quantitative methods. Formal hypothesis is replaced by above mentioned research questions, because of the character of research and research data. We do not start our paper with literature review, because of its empirical character.

### **1 The system of financing Slovak sports**

There are not many sources dealing with financing of sports in Slovakia. As of today the best account of the organization and financing of Slovak sports is the think tank MESA 10 study (2004). The data in the study start to be old, but they still can be used for general descriptions, because no major organizational changes occurred.

The study shows that the organization and financing of sports is based on partnerships between public and private (predominantly not for profit) organizations. The organizational structure was developed after the 1989 political change away from a centrally planned and managed society, and today is characterized by significant fragmentation and heterogeneity.

The central public body responsible for sport is the Ministry of Education (www.education.gov.sk). The ministry focuses both on policy and finance, but also directly delivers some services, including the National Sport Centre, university and schools sports. Two other ministries – Defense and Interior co-finance state representation. Local and regional self governments are responsible for the creation of conditions for local and regional sports (on the base of the Competence Law).

The Ministry of Education is responsible for the allocation of most of state budget resources for sports. The resources from this source are shown in Table 1. The Table 2 provides recent figures from the state budget analytical data.

**Table 1 State budget expenditures for sports in Slovakia 1997 – 2002 (current prices in Slovak crowns - Sk)**

	1997	1998	1999	2000	2001	2002
Millions Sk	1174	805	992	965	975	1121
% of the state budget	0,54	0,41	0,51	0,48	0,46	0,41
% of GDP	0,17	0,11	0,12	0,11	0,099	0,10

Source: MESA 10 (2004)

According to MESA 10 (2004) in 2003 central budget resources represented about 28 % of total Slovak sports expenditures. This was a higher proportion than for most developed countries. MESA data argue that at the same time the resources provided by local governments accounted for about 25% of total sports expenditures. If we compare their data with current official budgetary data indicating that the self-governmental levels (municipalities and regions) covers about 10 % of public expenditures for sports, seems that there was some mistake in MESA estimates.

**Table 2 Public expenditures for sports in Slovakia 2006 – 2009 (thousands of EUR, current prices)**

	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
Ministry of Education	33 867	33 867	33 559	33 604
Ministry of Defense	3 875	3 207	4 624	5 040
Ministry of Interior	4 231	4 325	2 626	2 600
Office of Government	0	199	1 992	1 992
Targeted programme for building off small sport places	0	0	0	7 967
Self-governments	3 319	3 651	4 979	6 639
<b>Total</b>	<b>45 293</b>	<b>45 250</b>	<b>47 780</b>	<b>57 841</b>
<b>Total/GDP %</b>	0,085	0,08	0,075	0,08

Source: www.finance.gov.sk

The rest of sport costs are covered by private expenditures derived from two main sources: households (still marginal – see Table 3); and sponsorships, including donations (recent data not available).

**Table 3 Household expenditure on sport as % of total household expenditures**

	<b>Recreation and culture total</b>	<b>Of which:</b>	
		<b>Equipment for sports</b>	<b>Sport services</b>
Slovakia 2002	7,21	0,23	0,26
Slovakia 2004	6,70	0,31	0,30
Slovakia 2006	5,50	0,33	0,31
Slovakia 2009	5,80	x	x

Source: MESA 10, Slovak Statistical Office

The above mentioned data indicate that public grants may represent today about 30 % of total sport expenditures in Slovakia. With this they represent important vital channel of providing resources for sports, especially for “small” sports. The proportion of public grants in budgets of sport federations in Slovakia was not investigated yet, but our provisional data (major sport federations do not publish any economic data on their webs) indicate that this

proportion significantly increases with the “importance” of the given sport. Small sports (like triathlon and orienteering where we got data) may cover more than 50 % of their costs from the public grants.

## **2 The system of allocation and management of public grants**

From 2005 the Slovak state budget (and from 2008 self-government budgets, too) is medium term program and performance based document. The resources provided by the Ministry of Education (main source, see above) are budgeted within the following framework:

Program 026 – National program of development of sports in Slovakia:

Subprogram 02601 – Sport for all

Subprogram 02602 - State sport representation and development of sport branches

Subprogram 02603 – Talented youth

Subprogram 02604 – Investments (capital expenditures)

Subprogram 02605 – Coordinating activities of the Ministry of Education, financing of organizations directly managed by the Ministry of Education

The proportions of allocation of resources between subprograms does not change significantly between years, so we can use 2007 data as an example – Table 6 (resources spent directly by the Ministry excluded).

**Table 6 The allocation of state budget grants via subprograms in 2007**

	<b>02601</b>	<b>02602</b>	<b>02603</b>	<b>02604</b>	<b>02605</b>
Thousands Sk	44 894	544272	157 594	175 301	6 095
%	4,4	54,5	15,8	17,5	0,6

Source: [www.education.gov.sk](http://www.education.gov.sk)

The allocation of resources for actual sports (Annex 1) is formally on the base of submitted and approved projects. This in reality works for subprograms 02601 and 02604, where you can find concrete project approved on the Ministry web. However, largest sums of money (state representation and youth) are distributed differently – the base was given performance allocation criteria, published last time in 2007. Seems partly similar practice continues (figures in Annex 1 support such assumption), but rules are not any more transparent.

The 2007 allocation criteria for main expenditure items ([www.education.gov.sk](http://www.education.gov.sk)) were as follows:

***Subprogram 02602 – Part State sport representation***

In the first step 2,5 % from total amount of allocated resources in this item was given to disabled sports. The remaining amount of resources was divided between Olympics sports – 85 %, and other sports – 15 %.

A. Olympics sports allocation was divided between collective sports – 50 %, and individual sports - 50 %.

B: Non-Olympics sports allocation was divided between collective sports – 10 %, and individual sports - 90 %.

The base criteria for the calculation of the sum of the grant for a sports branch were:

1. Collective sports:

- number of teams and their members participating in international championships in 2006 – 20 %
- results – 80 %.

2. Individual sports:

- equal allocation to all sports – 20 %
- results – 80 %.

***Subprogram 02602 - Part Development of sport branches***

Allocation of resources in this subprogram to support sport federations with more than 100 members was based on simple criteria, as follows:

1. Memberships - 40 %

2. Organized competitions - 30%

3. Category of sport – 30 % (Olympics sports 80 %, other 20 %)

***Subprogram 02603 – Talented youth***

The total amount of resources was divided between collective sports - 65 % and individual sports - 35 %. The base criteria for the calculation of the sum of the grant for a sports branch were:

1. Number of registered members in youth category – 30 %

2. Results of registered members - 25%

3. Qualification of trainers – 10%

4. Scale of competitions for youth organized by the sport branch - 20%

5. Results at World or European youth championships - 10%

6. Category of the sport (Olympics, non-Olympics) - 5%

## **2. 1 Conditions to use state grants**

The very specific aspect connected with state budget grants to sport federations is the conditions for the use of these grants. The rules are very strict and sport federations have first to sign an allocation contract with the Ministry of Education and then manage all provided grants in the same way as public budgetary organizations.

Transferred money has to be kept on specific account and used according to the (old-fashioned and bureaucratic – see for example Wright and Nemeč, 2002) Law on budgetary rules. Moreover, the budgeting period is one year. This means that:

- sports federations receive information about the level of allocation only in spring, and
- at the end of the year all non-used resources must be returned to the state budget.

Such a system creates extra transaction costs to cope with the bureaucratic public requirements, but especially causes large problems connected with the management of commitments, as we will show below. In the sports system a typical type of commitment involves participation in major sporting events. This involves participation in unavoidable training camps that must be held in the given period and for more or less a given sum of money: paid in most cases before the event.

The sport managers have to work out how to collect the necessary resources, and in Slovak conditions this is especially important for sports where public grants dominate in national representation activities. From our sample such sports are triathlon and orienteering, where training camps and starts at international events have to be covered by the national federation. Both sports have also their winter disciplines, where the problem of commitments and profiling is crucial.

As indicated, the system of public grants is characterized by the one year closed budgeting period. This means that expenditures for say a 2010 event can only be covered from 2010 allocations. In this situation, when the first installment of the expected (still not allocated – the sum is just calculated from previous year allocation) grant arrives in the account of the sport federation at the end of January or the beginning of February, and the final grant total is known perhaps only in April, financial managers are in a very difficult situation. The most difficult problems might be:

- For most international championships the fee and related costs need to be paid one or two months in advance. If the event is in January 2010, it is impermissible to pay these costs from the current 2009 allocation and the 2010 allocation is not yet available.

- Cheap flight need to be booked and paid for well in advance. Again, with events in January or February, this is impossible from central budget public grants. Similar situations may occur for other related costs, such as accommodation or other services offered with special discounts.

If the above mentioned or other costs have been paid from a federation's "private" account in the previous year for activities in current year, these costs will never be reimbursable from a central budget public grant and the problem of how to settle the balance in the separate "state account" can occur. If the balance is not achieved by the year end all unspent monies must be returned.

## **CONCLUSIONS**

Our paper investigated issues where sports management and public finance intersect. In the first part of our paper we briefly introduced the role of public grants in financing sports in Slovakia to respond to the first research question.

The second part examined the rules for allocation of the state budget grants and also some problems caused by over rigid rules for the use of these grants. Despite the fact that resources are allocated by programmes, their use is still regulated by strict budgetary principles. In such conditions it is evident that too high a dependence on state resources causes major difficulties for financial managers in small Slovak sports.

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- ❖ [www.triathlon.sk](http://www.triathlon.sk)

## SUMMARY

Two important aspects of sport finance in Slovakia are discussed in this paper. The first research goal is to estimate the role of public finance in sport in the country. We expect that especially small sports may depend too much on public grants. Our data cannot confirm this with full reliability, but they indicate that about 30 % of sports expenditures are covered from public resources and that small sport federations rely for more than 50 % on public grants.

The second goal is to evaluate the system of allocation of grants to sport bodies in Slovakia – how the level of grant is decided and the concrete ways of providing resources from the state budget. The normal situation would be transparent allocation system and modern public financial management approaches. Our data indicate two problems. First, the allocation of most of state grants from the Ministry of Education is not any more transparent. Second, allocated resources shall be used according to very strict budgetary rules, what creates large problems for financial managers of sport federations, especially on the level of small sports.

## ZHRNUTIE

Náš príspevok analyzuje dva významné aspekty financovania športu na Slovensku, Jeho prvou výskumnou otázkou je analýza podielu verejných zdrojov na financovaní športu v SR. Predpokladáme, že najmä malé športové zväzy môžu na verejných dotáciách výrazne závisieť. Získané údaje naše predpoklady potvrdili. Podiel verejných zdrojov na financovaní športu v SR nie je možné presne vyčíslieť, štatistické údaje nie sú k dispozícii, ale mal by sa pohybovať niekde okolo 30 %. Malé športové zväzy aj z viac ako 50 % objemu zdrojov závisia na štátnych dotáciách.

Druhou výskumnou otázkou bola analýza spôsobov alokácie a použitia dotácií zo štátneho rozpočtu pre športové zväzy. Predpokladáme, že v členskej krajine EÚ by mal fungovať transparentný systém prideľovania dotácií. Získané údaje ale indikujú dva významné problémy. Prvým je fakt, že spôsob alokácie dotácií zo strany Ministerstva školstva už niekoľko rokov nie je transparentný. Druhým je uplatňovanie prísnych rozpočtových pravidiel na použitie štátnych dotácií, čo spôsobuje značné problémy finančným manažérom najmä malých športových zväzov pri zabezpečovaní úloh spojených so štátnou reprezentáciou.

Annex 1: Grants directly allocated to selected sport federations (thousands SK, 2010 in EUR)

<b>Sport federations</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2010</b>
<b>Olympics sports</b>						
Athletics	3123	3666	3725	4125	4700	<b>276 500</b>
Basketball	6484	6000	6600	7010	8250	<b>309 800</b>
Badminton	85	75	75	277	200	<b>54 000</b>
Biathlon	1636	1787	1675	1990	2150	<b>210 000</b>
Box	357	420	345	533	750	<b>48 600</b>
Cycling, bicross	2386	2385	2435	2798	2800	<b>152 000</b>
Curling	0	0	0	100	150	<b>13 300</b>
Football	20411	20795	20885	20499	21520	<b>1 248 100</b>
Gymnastics	1904	1675	1725	1975	2050	<b>120 600</b>
Modern gymnastics	524	610	560	677	650	<b>46 000</b>
Handball	6434	6610	6015	6430	6965	<b>244 800</b>
Yachting	110	50	55	280	350	<b>55 200</b>
Riding	37	30	50	228	200	<b>67 000</b>
Judo	692	749	705	980	1100	<b>89 000</b>
Canonistic – wild water	1205	935	1015	1280	1500	<b>455 300</b>
Canonistic – speed water	1403	1435	1600	1726	2600	<b>337 100</b>
Ice skating	1324	1400	1300	1390	1450	<b>42 700</b>
Golf	30	0	30	0	0	<b>47 100</b>
Archery	202	200	205	337	300	<b>42 000</b>
Skiing	5217	4950	5000	1757	3050	<b>233 100</b>
Ice hockey	11992	14000	15115	15757	17975	<b>1 372 600</b>
Modern pentathlon	530	830	855	925	1100	<b>49 200</b>
Swimming	4183	4340	4290	4767	3900	<b>193 000</b>
Field hockey	795	840	740	840	750	<b>90 000</b>
Speed skating	340	300	300	470	550	<b>31 800</b>
Sledges	570	510	510	625	650	<b>84 400</b>
Table tennis	3440	3550	3695	4327	4715	<b>126 900</b>
Shooting	2125	2545	2680	3150	4700	<b>449 000</b>

Fencing	502	710	860	1100	1275	<b>71 900</b>
Taekwondo	80	30	30	300	300	<b>43 000</b>
Tennis	2846	3750	5875	7295	9400	<b>281 000</b>
Triathlon	465	475	495	553	600	<b>64 300</b>
Paddling	690	636	610	905	1050	<b>51 200</b>
Water polo	1932	2218	2350	2515	2965	<b>216 700</b>
Volleyball	8283	8515	8880	10230	10670	<b>424 000</b>
Lifting	1149	802	815	847	950	<b>81 000</b>
Wrestling	1286	1375	1275	1206	1000	<b>118 400</b>
<b>Non-Olympics sports</b>						
Cyclotrial	200	275	125	275	300	<b>24 600</b>
Fitness + body buidling	0	0	0	0	50	<b>150 300</b>
Floorball	0	30	30	630	600	<b>27 000</b>
Mini golf	50	30	30	50	50	<b>15 000</b>
Hockeyball	360	150	170	950	1200	<b>98 300</b>
Karate	1245	1215	1240	1393	1300	<b>125 400</b>
Kick box	30	30	50	0	0	<b>51 900</b>
Bowling	75	75	85	200	250	<b>49 400</b>
Motorcycle sport	60	200	200	495	550	<b>76 900</b>
Motorcycle sport (cars)	130	200	300	150	200	<b>50 900</b>
Noheyball	80	80	90	155	150	<b>27 400</b>
Orienteering	328	340	380	435	450	<b>33 000</b>
Diving	85	50	65	152	200	<b>26 300</b>
Chess	274	200	200	215	200	<b>67 800</b>
Rafting	0	30	30	85	100	<b>34 500</b>
Water ski	60	30	30	80	100	<b>36 500</b>
Water motorists	30	30	30	0	0	<b>35 700</b>
Disabled sports	710	2500	2000	2600	2700	

Source: [www.education.gov.sk](http://www.education.gov.sk)

# **CURRENT STATE OF PHYSICAL DEVELOPMENT AND MOTOR PERFORMANCE AT ELEMENTARY SCHOOLS IN BANSKÁ BYSTRICA**

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**KEY WORDS:** physical development, motor performance, primary school

## **INTRODUCTION**

Recently, there is an effort to change the approach to evaluation of physical fitness and basic motor performance of elementary school children. New ways of classification are coming into focus trying to motivate pupils towards long-lasting performance of physical activities and regular motor activity. Intensity of motor activity and its need at youth descends. Passive spending of free time prevails. And this is just one of negative consequences of current lifestyle.

## **PROBLEM**

In 1993, as a result of a long-time effort of our experts, a manual was published containing a battery of motor tests combined from Unifittest (6- 60) and Eurofit (Kovář, Měkota et. al., 1993). This test battery is designated for children from 6 to 20 years and following tests are included (standing jump, sit-ups in 30 seconds, 10x5 metre run, full ball throw, power of grip of a dominant hand and basic somatic indicators (height and weight).

There were many test batteries compiled and verified in the past for evaluation of physical fitness of school children, containing a few motor tests and measurements of basic somatic characteristics (height and weight). Discovered outcomes from representative sample of Czech and Slovak children was published by Pávek (1977) and Moravec et.al. (1994, 1996). The most widely spread test system of Europe is EUROFIT (Council of Europe, Committee for the Development of Sport, 1988). Council of Europe's Committee for the

Development of Sport, with the aim to obtain, by the means of standard methodology, comparable results from different countries of Europe, created a test battery designated for school children containing 9 motor tests (balance test, flamingo, tapping, wide forward bend in sitting position, standing jump, hand dynamometry, sit-ups in 30 seconds, pull-up stamina, 10x5 metre run).

Malina et.al. (2004), on the basis of published knowledge analysis, states an important information, that biological maturity influences motor performance of school age boys and girls mostly via interaction with physical height and weight. The results of correlation between biological maturity and motoric performance in physical fitness tests are influenced in the period of pre-pubescence and pubescence by mutual relations between calendar age, state of biological maturity and physical parameters. Another influencing factor is the individual pace of biological maturing during pubescence and adolescence.

Katzmarzyk et.al. (1997), Beunen (1993) point out that mutual variable relations between chronological age, skeletal age, physical proportions and motor performance make the explanation of their particular effect on motor performance more complicated. These mutual relations are the strongest in boys of 14-15 years of age.

The article presents partial outcomes of a long-lasting research, which is a part of VEGA no. 1/ 0409/10 project: Biorhythms and sport efficiency.

## **THE AIM OF THE WORK**

The aim of the work is to assess the current state of physical development and motor performance of 12-15-year-old pupils (boys) at elementary schools in a relation to norms made up on the basis of research measurements performed 13 years ago (Eurofit, 1996).

From the aim of the work we drew the following tasks:

1. Specify the aims and methodology of physical performance and fitness measurement in preparation of 2<sup>nd</sup> grade elementary school pupils in Banská Bystrica
2. Set a battery of tests – UNIFITTEST
3. Execute measurements during February – March of 2008/2009 school year.
4. Compare the overall results of elementary school pupils in Banská Bystrica with the results measured in the nationwide research of Moravec (1996).
5. Evaluate results and on their basis compose recommendations for the practice.

## **METHODOLOGY OF THE RESEARCH**

### **1. Characterisation of the examined group and organisation of the research**

The research was realised in March of 2009 at elementary school – Gaštanová ulica, Podlavice in Banská Bystrica. The group consisted of 60 probands – boys of the 7<sup>th</sup> – 9<sup>th</sup> grade of elementary school, and their decimal age was 11,63-15,02. Measuring of somatic characteristics and their testing was performed under standard conditions in the elementary school gym under the supervision of a physical education teacher. Probands had no health problems during the testing and realized a short loosening-up before the testing.

### **2. Methods of research material acquisition**

We were investigating the basic somatic characteristics such as the body height (cm) and the body weight (kg), according to the methodology /Moravec, 1996/. Motor performance was measured by the test battery: 4x10 metre run, standing jump with legs together, sit-ups in 30 seconds, heavy ball throw with both hands, dynamometry of the left and right hand /Měkota, Blahuš, 1983/.

### **3. Methods of research material evaluation**

We used basic qualitative methods – analysis, synthesis, comparison and quantitative methods such as average and standard deviation. The evaluation of motor abilities was compared to the nationwide research of Slovak population by Moravec /1996/.

## **OUTCOMES OF THE RESEARCH**

Statistical characteristics of physical development represented by body height and body weight are indicated in the table 1 and 2. Acquired values of the research were compared to the population of Slovakia by Moravec (1996). The assertion of Moravec (1996) that the most intensive body height growth is between the 14-15 years of age was proved, caused by a so-called pubertal impulse. Body height increase of +6cm was recorded between the 12<sup>th</sup> and the 13<sup>th</sup> year of age of probands, +5 cm between the 13<sup>th</sup> and 14<sup>th</sup> year, and +7 cm between the 14<sup>th</sup> and 15<sup>th</sup> year of age. The period between the ages of 12-13 years, influenced by pre-pubertal acceleration, in reality starts the physical growth of the body. In comparison of statistical data of Slovakia, in Moravec (1996), we have recorded, in our research sample, following rise: in 12-year-old probands +8cm, in 13-year-old +11cm, in 14-year-old +8 cm, and in 15-year-old probands +8 cm. The highest body height acceleration of our sample was recorded in 13-years-old, compared to the data of Slovakia from Moravec(1996).

**Table 1. Body height of 6<sup>th</sup> to 9<sup>th</sup> grade elementary school boys**

Age	n	x (cm)	s	SR 1996	n	x	s
11,63	20	158,00	8,93		324	150,00	6,59
13,12	12	166,08	8,16		235	154,90	7,64
14,34	14	171,07	7,22		530	163,10	9,23
15,40	17	175,82	6,61		301	170,24	8,59
15,02	17	178,12	5,94		301	170,24	8,59

Body weight of probands (table 2) shows the rise in every group category in comparison to the body weight of probands from Slovakia in 1995. The highest rise of body weight was recorded in 13-year-old category, +14 kg. The rise of +9 kg of the body weight of our probands was the highest between 12-13 years of age. We can note that children are exposed to increased linear growth, as well as increased body weight compared to the past population, which testifies the secular trend theory.

**Table 2. Body weight of 6<sup>th</sup> to 9<sup>th</sup> grade ZŠ Podlavice elementary school boys**

Age	n	x (kg)	s	SR 1996	n	x	s
11,63	20	49,28	11,60		324	40,85	8,88
13,12	12	58,33	19,37		235	44,00	8,40
14,34	14	58,66	6,41		530	50,46	10,29
15,40	17	62,09	8,48		301	57,31	10,14
15,02	17	66,71	10,82		301	57,31	10,14

The motor test outcomes of 6<sup>th</sup> to 9<sup>th</sup> grade ZŠ Podlavice elementary school boys in Banská Bystrica are stated in tables 3-7. They are compared to the quoted motor test table values according to the research of Moravec (1996) in Slovakia. The highest rise of lower limbs explosive strength level was recorded at probands between 14-15 years of age, which is identical to assertion of Moravec (1996). In comparison of our data to the population of

Slovakia no demonstrable differences were recorded. In fact there are, on the contrary, lower values of our sample in the groups of 12- and 14-year-old category.

**Table 3. Standing jump with legs together (cm)**

Vek	n	x	s	SR 1996	n	x	s
11,63	20	152,23	27,79		324	167,52	19,42
13,12	12	172,42	26,27		235	171,62	18,28
14,34	14	175,71	21,20		530	184,11	20,36
15,40	17	196,65	26,01		301	200,11	21,56
15,02	17	202,65	22,82		301	200,11	21,56

Abdominal and lumbar-trunk strength rises regularly in particular age periods as shown in table 4 by Moravec (1996). Probands in our group had the highest growths of this motor ability between the age of 14-15, specifically in the 60s test. In the 30s time-interval we have recorded no differences between the age categories of our sample, and values of this test were lower to the values of Slovak sample probands. We can state that during the course of years no dynamic development of this motor ability was reached.

**Table 4. Number of sit-ups in 30s and in 60s.**

Age	n	x-30s-60s	s	SR 1996	n	x-30s.	s
11,63	20	23,00- 37,75	8,16- 10,43		324	23,36	4,45
13,12	12	22,00- 38,50	5,92-8,44		235	24,60	4,64
14,34	14	22,93- 39,86	4,43-5,80		530	25,81	4,50
15,40	17	25,18- 41,12	5,05-7,84		301	26,82	4,18
15,02	17	22,41- 40,18	3,14-7,20		301	26,82	4,18

From the average values of 4x10m-run test it is clear that during the course of time boys' speed and skilfulness ability rises. We cannot compare the test with Eurofit values because of its methodological dissimilarity.

**Table 5. 4x10 m run (s)**

Age	n	x	s	SR 1996	n	x	s
11,63	20	12,77	1,28		324	21,13	2,24
13,12	12	12,63	1,82		235	21,10	1,97
14,34	14	12,29	0,54		530	20,60	2,05
15,40	17	11,39	1,11		301	19,94	1,83
15,02	17	11,00	0,73		301	19,94	1,83

The lowest growth in heavy ball throw in our sample was observed between 12-13 years of age, the highest between 14-15 years of age. We can state that boys' performance in heavy ball throw rises evenly with the rise of muscular strength. In the contrary to the research of Moravec (1996) we have to state that lower limbs strength ability in present population was not risen.

**Table 6. Heavy ball throw with both hands (m)**

Age	n	x	s	SR 1996	n	x	s
11,63	20	5,58	1,49		324	4,50	0,78
13,12	12	6,03	0,99		235	5,99	1,23
14,34	14	6,60	0,88		530	7,08	1,44
15,40	17	7,51	0,98		301	8,13	1,62
15,02	17	7,94	1,04		301	8,13	1,62

A static strength ability of upper limbs in isometric contraction shows the table 7. Statistical values of observed probands certify the data of Moravec (1996) that by aging the static strength rises and the preference of the right hand and higher strength of the right hand to the left hand prevails. The highest growth of the static strength in our sample was between

the ages of 12-13 years. The outcomes of static strength ability do not reach the level of Slovak population.

**Table 7. Right hand dynamometry (N)**

Vek	n	x	s	SR 1996	n	x	s
11,63	20	23,82	8,71		324	27,87	4,81
13,12	12	30,00	6,34		235	30,40	5,65
14,34	14	34,64	6,50		530	34,48	8,22
15,40	17	40,35	8,22		301	46,00	7,72
15,02	17	40,35	8,22		301	46,00	7,72

## CONCLUSION

We have confirmed the research of Moravec (1996) that the most intensive body height growth is between 14-15 years of age, caused by a so-called pubertal impulse. The highest body height acceleration of our group was observed in 13-year-old and the body weight of our probands (table no. 2) shows the growth in each age category compared to the observed group in Slovakia in 1995. We can state that in children there is a drift towards a risen linear growth as well as risen body weight compared to the past population that proves the theory of the secular trend. Overall motor performance of children descends, which was proved by all data gained in motor tests.

Discovered insufficient development of tested motor abilities in boys is the most probably caused by the present-day way of life resulting in their low involvement in organized forms of free-time motor activities. Prevailing sedentary way of life leads to hypokinesia with all its consequences. Therefore the role of school physical education and its forms is very important, giving increased attention to motor performance development and stimulation of the pupils to a regular motor activity after the school.

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## **SUMMARY**

In this contribution the authors are presenting the pre-research results of VEGA 1/449607: Biorhythms as a significant phenomenon in sport.

We used the standardised Unifittest test battery of (6- 60) (Kovář, Měkota et.al., 1993). It contains four motor tests for pre-pubescent and pubescent individuals: standing jump with legs together, sit-ups in 60s, 4x10 m run, heavy ball throw. The group consisted of 60 boys between 11-15 years of age. All of them come from elementary schools in Banská Bystrica.

We observed an increased linear growth and increased body weight in our group compared to the population of the past that confirms the theory of secular growth.

## **THE MISTAKES IN UNDERHAND AND OVERHAND VOLLEYBALL SERVING TECHNIQUE**

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**KEY WORDS:** volleyball, underhand and overhand serve technical mistakes

### **INTRODUCTION**

The serve is playing activity of an individual by which volleyball starts every play while only one hand can contact a ball (Sobotka, 1995; Zapletalová, Kasa 2006; Přidal, 1996). According to the authors (Hančík, Mašlejová, Tokár, 1994; Zapletalová, Přidal, 1996) serve is the only activity in volleyball, which is created in standard conditions. A serving player can choose from two serving types i.e. underhand or overhand serve. The overhead serve is more challenging for beginning players because it requires being able to toss consistently (<http://y-coach.com/volleyball.html>). If a player tosses a ball incorrectly, then he/she has problems to „contact“ the ball and in the worst cases it means a score point for an opponent (Popelka, 2010). The authors (Hančík, Mašlejová, Tokár, 1994) consider underhand serve as the simplest technique how to put the ball in play because in this serve a player has the highest certainty and it requires low demands for swinging arm speed, which creates pendulous motion.

At evaluation in volleyball of pupils we focus on evaluation of their theoretical knowledge level, performance in play, handling technique level and also handling basic playing activities of an individual.

In the past, the authors (Majerský, 1984; Popelka, 2009; Popelka, 2010) dealt with diagnostics of technique in sport plays. At the diagnostics of motion abilities we are interested mostly in the degree of knowledge of some abilities.

## THE AIM

The objective of this paper is to review the technique level of underhand and overhand serve at students of KTVŠ FHV UMB and point out the most often technical insufficiency and frequency of mistake occurrence in the academic years 2008/2009 and 2009/2010.

## TASKS

1. Analyzing and reviewing the technique of men underhand and overhand serve from video recording.
2. Finding out the most often occurrence in individual phases of motion by arm, feet and body positions in the academic years 2008/2009 and 2009/2010.
3. Comparing mistakes of men in the academic years 2008/2009 and 2009/2010.

## METHODOLOGY

The analysis of underhand and overhand serving technique was realized at the beginning of semesters in the academic years 2008/2009 and 2009/2010. For evaluation of underhand and overhand serving technique we used video recording of a video camera placed on the side distanced 7 m far from a player. Three specialists evaluated the quality of both techniques while used the methodology for specialized evaluation. We focused on mistakes, which the authors (Zapletalová, Přidal 1996; Hančík a kol. 1982) introduce and on the basis of own experience. *At the underhand serve* (table 1) we focused on mistakes made at arms – missing toss or dropping the ball, insufficient arm swing, swing is not led directly to a ball, the tossed ball is not hit by so called volleyball bowl. Lower extremities are straight, compliant leg is forwards, at the moment of contact the ball the back leg is not on the ground and at the motions and body positions – incorrect weight handling, the player's hips do not rotate. *At the overhand serve* (table 2) we focused our attention on mistakes made at arms – high or low toss, toss is in front of the body or behind the body, the arm is wrinkled at contact the ball, insufficient arm swing. Lower extremities are straight, compliant leg is forwards, at the moment of contact the ball the back leg is not on the ground, insufficient feet position and at the body positions – the player's body is not swung to the objective of serving and the player's hips do not rotate.

At evaluation of underhand serve the research groups consisted of 36 men in the academic year 2008/09 and 42 men in the academic year 2009/10 and at overhand serve the research groups consisted of 38 men in the academic year 2008/09 and 43 men from second

study year of combined and one line study program in bachelor's degree at KTVŠ FHV UMB in Banská Bystrica in the academic year 2009/10.

## RESULTS

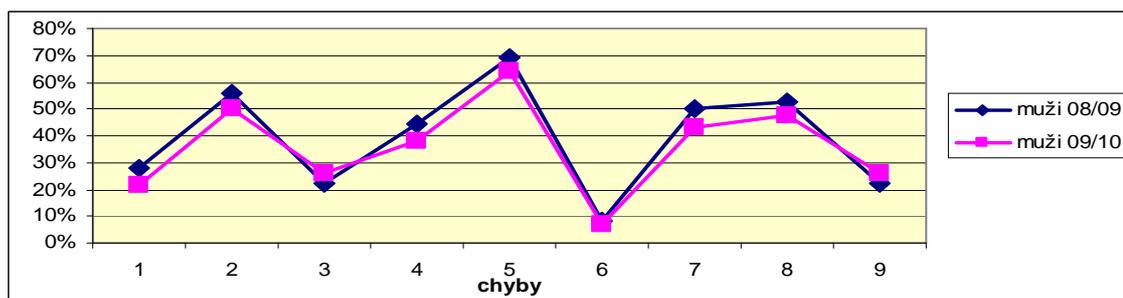
**Underhand serve:** Analyzing men underhand serve technique we can review that both groups made the biggest number of mistakes at lower extremities motion i.e. 66,7% of men could not have correct stand at serving and they served from straight extremities. This mistake is expressed with wooden stand and insufficient body motion and we guess that it comes from incorrect putting body weight from the back to the front leg. The percentage expression of individual mistakes in underhand serve is shown in Table 1.

**Table 1. The most often occurred mistakes in the underhand serving technique (%)**

Body	Execution	Error	Men 2008 / 2009	Men 2009 / 2010	Total
Arms	missing toss or dropping the ball	1	27,7	21,4	24,4
	insufficient arm swing	2	55,6	50	52,6
	swing is not led directly to a ball	3	22,2	26,2	24,4
	the tossed ball is not hit by so called volleyball bowl	4	44,4	38,1	41,2
Lower extremities	Lower extremities are straight	5	69,4	64,3	66,7
	compliant leg is forwards	6	8,3	7,1	7,7
	at the moment of contact the ball the back leg is not on the ground	7	50	42,9	46,2
Motions and body positions	incorrect weight handling	8	52,8	47,6	50
	the player's hips do not rotate	9	22,2	26,2	24,4

This mistake was found out in 50% of men. The absence of decreasing and then increasing the center of gravity with its synchronic motion from back leg to the front one minimizes the power required for tossing the ball. It results from the mentioned, that if the player wants to serve the ball over a net to opponent's field, he/she has to strike more by serving arm. The next important finding out is that 52,6 % of men had insufficient swing by a serving arm and the ball was hit mainly by power and not by an arm swing. We guess, that mentioned mistake could cause rapid tiredness of serving arm with following failure to get a ball to opponent's field mainly to the pupils of primary schools.

The comparison of mistakes in groups of men at underhand serve technique is shown in Fig. 1. While comparing both groups we found out that there is approximately equal course and percentage part of observed shortages in the underhand serve technique and differences are minimum. The common attribute of both groups is the fact that the biggest number of mistakes in serve was made while men had straight extremities and the smallest number of mistakes was made while their compliant leg is in front e.g. a right leg at a right-hander.



**Fig. 1 The mistakes at underhand serve**

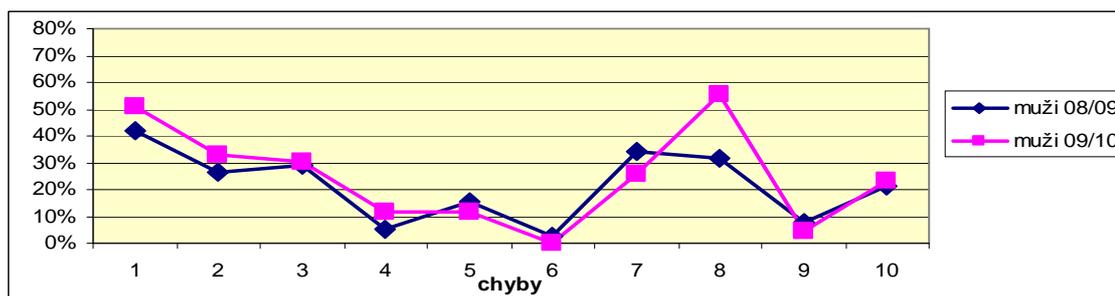
*Overhand serve:* The percentage expression of individual mistakes in overhand serve in frontal position is shown in Table 2.

**Table 2. The most often occurred mistakes in the overhand serving technique (%)**

Body	Execution	Error	Men 2008 / 2009	Men 2009 / 2010	Total
Arms	high or low toss	1	42,1	51,2	46,9
	toss is in front of the body or behind the body	2	26,3	32,6	29,6
	the arm is wrinkled at contact the ball	3	28,9	30,2	29,6
	insufficient arm swing	4	5,3	11,6	8,6
Lower extremities	Lower extremities are straight	5	15,8	11,6	13,6
	compliant leg is forwards	6	2,6	0	1,2
	at the moment of contact the ball the back leg is not on the ground	7	34,2	25,6	29,6
	insufficient feet position	8	31,6	55,8	44,4
Motions and body positions	the player's body is not swung to the objective of serving	9	7,9	4,7	6,2
	the player's hips do not rotate	10	21,1	23,3	22,2

Analyzing overhand serving technique we found out that the biggest mistakes were in tossing the ball. We consider the tossing the ball as the most important moment of success in overhand serve so it is a serious mistake. Men tossed the ball either too high or too low in 46,9% of all cases. In the first case, the too high ball can cause coordination problems at less skilled players and they often have problems with contact the ball. Then, the player often hits the ball only by fingers or bottom part of a palm. We guess that incorrect tossing (mainly low) is closely related to the next mistake at arms and it is serving the ball with a wrinkled arm, what significantly decreases the arm swing (the range of motion of a serving arm) or he/she has to toss the ball again and does not have time for swinging his/her arm what means a score point for an opponent. The mentioned mistake was recorded in 29,6% of all cases.

The comparison of mistakes in groups of men in overhand serving technique in frontal stand is shown in Fig. 2. At comparison of mistakes in both groups we can review that the biggest part was recorded in the position of feet at serving. At men in the academic year 2009/10 there was recorded incorrect position of feet in 55,8% of all cases, while at men in the academic year 2008/09 it was recorded only in 31,6% of all cases.



**Fig. 2 The mistakes at overhand serve in frontal position**

It is a mistake of a basic player's position before and during serve, i.e. incorrect harmony of motions of the whole body during overhand serves performing.

## CONCLUSION

*Underhand serve:* On the basis of results we can review that we did not record significant differences at reciprocal comparison of men groups in the academic years 2008/09 and 2009/10. We found out that we evaluated men in three observed categories of underhand serving quality with 50% and more error rate what we consider as insufficient acquirement of underhand serving technique. Men made the mistake in serve on straight low extremities the most often and it was in 66,7% of all cases. Except above-mentioned mistakes, both groups of

men could not create and hit so called volleyball bowl. We recorded this mistake in 41,2% of men.

*On the basis of determined facts we recommend:* At training and improvement of underhand serve it is necessary to take care of correct basic stand at serve, emphasize importance of low extremities and body work from the back leg to front one, concentrate to train so called volleyball bowl.

*Overhand serve:* On the basis of analysis we can review that tossing was the biggest technical mistake. It was expressed mainly by high or low tossing and it was in 46,9% of all cases. We guess that the activity of arms is limiting factor in volleyball serving, which influences certainty, exactness and efficiency of serve. This is the reason why we recommend paying attention to tossing a ball for game-masters or trainers. Interesting finding is the fact that only in 55,8% of all cases we recorded significant mistake of feet stand in the academic year 2009/10.

*On the basis of determined facts we recommend:* Paying attention to work of arms at training and improvement of overhand serve in frontal stand i.e. mainly tossing a ball, trainers or game-masters should pay attention pupils to stand correctly the basic serving stand, mostly at pupils at primary schools trainers or game-masters should develop power-speed abilities of arms using different motion games, having short breaks while training and improvement of overhand serve because of difficulty on power abilities of arms and support them by additional exercises.

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## UTILIZATION OF BASIC KARATE TRAINING ELEMENTS IN PHYSICAL EDUCATION

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**KEY WORDS:** physical education, elementary school level, motivation, basic karate techniques.

### INTRODUCTION

The wide spectrum of martial arts offers a lot of possibilities of their application in physical education. For instance in a form of the basic karate training elements which, with their content, principles and methodical processes, can have a very positive impact on physical as well as mental development of personality. It has been proved that the martial sports and arts, among which karate belongs inseparable, are highly effective methods to reach the harmonic development of personality (Ďurech, 1993). Unambiguously we can say that despite of the high popular and efficiency of mediums, methods and content of martial arts and games in educational process of children, these sports are utilized rarely in physical education (Zemková et. al., 2006; Bartík, 1999, Bartík et. al., 2007, 2010). This is a reason why we set great store by convincing teachers of all classes at system of education that they try to utilize some of proved elements like for example from karate. Of course with this process will be realized contents specification of education programs for students of sport`s education at universities (Vladovičová, 1998). Many of studies proved that level of theory but mainly level of practical preparation in this area is not good for future teachers in primary classes, students of faculties of education (Rozim, 1996). Children in period of younger school age pass a lot of physical and psychical changes, which knowledge, acceptance but mainly the right influence on their following development will able to have an important influence on quality of their harmonious personality development. A lot of authors describe this children`s period of development like “period of big changes” in all areas (**physiological** – changeability of growth functions and EEG displays, somatic- growth of extremities, higher weight, bigger volume of heart; **psychological**- development of intellect, fear from new surroundings; **emotional**- emotional addiction on family, frequent emotional tokens of

behavior; **social**- change of social surroundings, achievement of new social rank- student) (Karíková 2001).

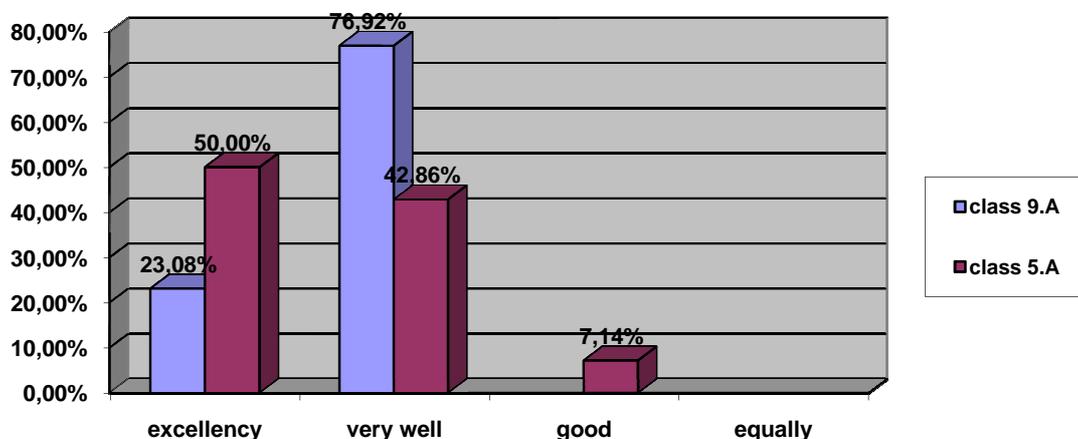
## **METHODICS**

In our work we tried exploit on lessons of physical education in 2. and 3.form on first level of primary school some elements of basic preparation in karate. We instructed lessons contested like this, two in each class of both forms in terms of unit of martial sports. We worked with children in the age of 8 until 11 years, at 6.primary school in Zvolen and at Primary school on Ďumbierska street in Banská Bystrica. From the total number of 126 children, who participated our lesson was 42% boys and 58% girls. All of the materialized lesson, were under supervision of one teacher, Miroslav Sližik, PhD., the trainer of first class in karate and a long time member of representation of Slovak republic. At the same time, Sližik is also an author of contesting and methodic part of lessons that were materialized. After finishing both of our lessons, we are ascertaining children`s opinions in the form of anonymous questionnaires on our lessons. We used questionnaires that we worked out with four questions with a possibility of choice of answers and with one opened question. We asked children: if they liked lessons, if they were looking forward to the following lesson, if they found the exercises not very exciting, if they would like to come back to the techniques of karate sometime in the future and at the last if they know other fighting sports. As we did our best to orientate this contribution in contests mainly to methodic and contesting part of lessons of physical education , that we instructed , we mention only brief summarize of results in our inquiry. Mentioned results are expression in percentage of individual opinions and standpoints on our lessons.

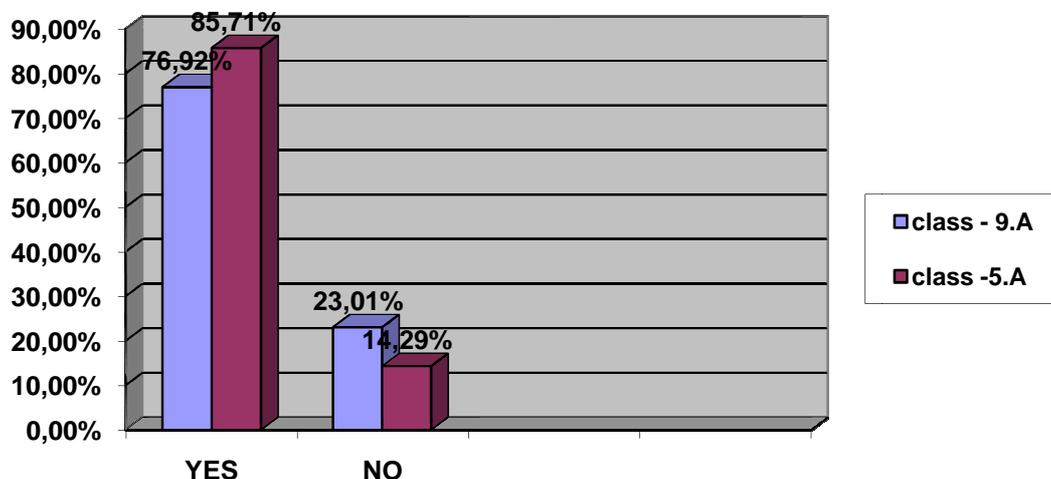
## **RESULTS OF EXPLORATION**

In general, we can claim, that that the differences between opinions of boys and girls on our lesson were minimal. Immediately in the first question for ascertaining positive and negative feelings from being on lessons, approximately 75% boys and 60% girls expressed very positive, than 20% boys and about 20% girls were neutral and only 5% boys and 10% girls express to our lesson negative. At the answers on other three questions the opinion was not expressively changing. In the last opened question we ascertained the biggest differences between the answers of boys and girls, where boys had in average for move than 1/3 better

survey about the other fighting faculties than girls. The results of each questions of our questionnaire you can see on the next pictures 1-3.

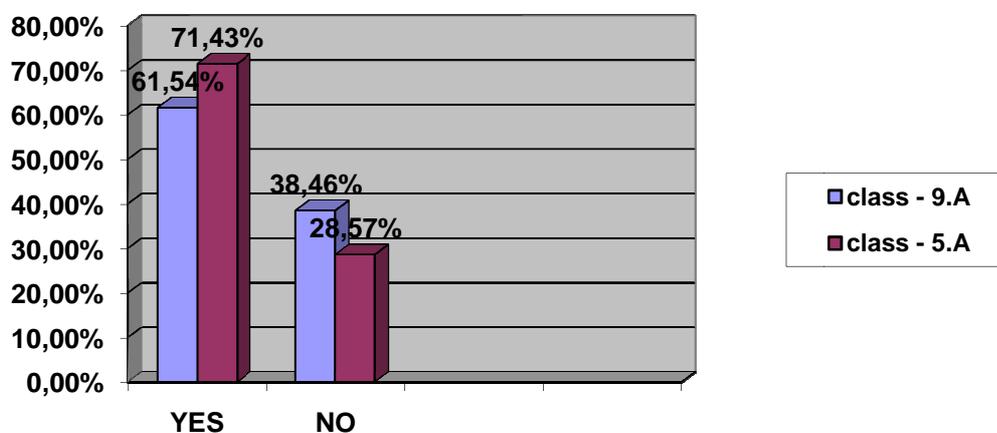


Picture 1 – Students evaluation of implementation lessons intent on martial arts with basic elements of karate training.



Picture 2 – Students sympathy of lessons intent on martial arts with basic elements of karate training.

Would you like to practise more martial arts with karate elements on physical education lessons?



**Picture 3 – Changing of students reference with physical education after the experimental lessons with martial arts and basic karate elements.**

After take the experimental lessons with karate techniques was change your sympathy of physical education lessons ?

### **What is the commission and the aim of the sports-and-move education in primary level?**

We think that the first and the foremost is the **motivation** of children to move regular. Creation of optimal biorhythms, health and hygienic habits and stereotypes. We can not forget to mention the influencing on the whole physical and psychomotor development, development of intellect and characteristic qualities of children in this age. And at last we mention also some move, as we think some important aims of this instructing and educating process like the development of movement`s skills, which is characterized by individual sensitive époques. Our opinion and also the opinion of other experts, who occupy with problems in developing conditioning and coordinating skills of children in younger school age is development moving skills and psychomotor development as important in the process of upbringing and education in the primary level as in education theoretical subjects itself, which creates the main part of this process. Lots of sports pedagogues still try for innovation but mostly the specific elements of sport preparation in individual sport discipline at the lessons of physical education in terms of concrete units of themes. This trend of development in terms of move education in all levels of educating is as we think right and requesting for the most effective achieving educating aims.

## **What does karate offer to us and what utilization could it have at physical education's lessons?**

Karate with its more than 2000 years history has in continuity with its own evolution very strong roots in his essence, sense, contents and total philosophy which remained until this time practically not change (Lind, 1996; Nakajama, 1994). Conception and apprehension of philosophy this martial art – fight without gun, unambiguously follows from its plentiful history which has still spoken about ethics and morale, versatility and complex body's and spirit's development in each age of human life. Karate is famous with its pretensions on precisions, honour, justice, respect, discipline, self – control and nature respect to authorities. Karate training is directed on general coordinating abilities with its systems and methods is directed for optimal general development children's personality, his mind and psychic (Mannini, 1998; Aschieri, 1992). This martial art offers to children a big set stimulating, interesting and untraditional moving activities, which manage to evoke an attention and interest in movement inside them spontaneously. O the base our present practical experiences from our several years training practice and plentiful theoretical knowledge we suppose that just items of karate and his principles can manage by effective way to minister forward adaptation children for: new life – rhythm, new more difficult responsibilities, harder self – discipline, deliberating observation, resolution, personal responsibility, precision, straightness, relation to self – rights and responsibilities and for spontaneous relation to authorities.

### **Basic preparation in karate**

The purpose of the first lap elementary sport's preparation in karate is development of general movement's abilities and acquirement of basic specific skills. Its subject is choice fight games, specific stretching exercises but the most it is rehearsal and education of basic karate techniques. Into the first lap of basic training we refer these basic techniques and technical karate systems:

- *dachi-waza* – technique of stances
- *nogare-waza* – diaphragmatic breathing
- *tsuki- waza* – technique of buffets
- *geri-waza* – technique of kicks
- *uke- waza* – technique of blocks

- *tai / ashi – sabaki*- movement of body and legs, displacing in stances
- *yokusoku-kumite* – rehearsal of techniques, stances and displacing in pairs

The children are in this phase of the sport preparation acquainted with karate technique, which they acquire little by little by system of visually – motor operated learning (object – lesson) and by system of movement's repetition. Rehearsal's methodic of individual karate techniques involves various requests, principles and fundamentals of effect and sufficiency – sensational – mobile education of children in younger school age (Mannini, 1998). We recommend for all that from right – meaty – methodical way, to refer to this preparation's lap the easiest techniques and movements which are children able to perform in this age. We refer them in this logical order:

- from easy techniques forward more difficult
- we perform exercises on the standing at the beginning and then in movement
- we start to teach stations and then hand's techniques [buffets, blocks], kick's techniques, then follows rehearsal of locomotion in stations together with learned execution techniques and as the last we refer so – called yokusoku – kumite – rehearsal of techniques in pairs
- to the content of technical part of preparation we refer cordial exercises or stretching

For the coach and teacher is very important to receive children in this age with consideration on density their movement's period. The coach or the teacher must be still considerate, flexible, consistent, useful to quickly react (to answer questions of children) but the most he must be able to nail, to motive the children.

### **The structure and the content of our effective lessons**

The lesson (long 45 minutes) we has dealt into these parties:

- Introduction - length of duration: 10-15 min. (warm up, stretching)
- Main part - length of duration : 20 min. (rehearsal of karate techniques)
- Final part - length of duration: 10 min. (change of measured sensational activity to spontaneous – games)

Introduction and final part both of weaned away lessons in one class has not changed in the content only resources and systems has not changed. For example: the content is game, mediums are individual types of game and systems are individual abilities of their

organization. It means that we tried to refer different games and stretching exercises in each lesson.

Introductory part :

- the lesson started with traditional salutation “REI” in pose *musumi-dači* (bow with heels together but tiptoes are not together). Children were lined up in one queue.
- at the beginning we utilized same fighting games like :

**1. Feet pushing:** Two partners sit against each other on the ground, hands behind their backs, touching each other by their feet. Hearing the teacher’s order, they start pushing each other by their feet, keeping the permanent connection. They can move only by the help of their hands on the ground. The fight is over when one of the partners pushes out the other one from the initial position, or after 30 seconds. The result of fight after the time limit is judged by the teacher.

**2. Wrestling by Palm Pushing:** Face-to-face in a standing position, elbows bent, the wrestlers place their palms against the opponent’s palms. The winner is the wrestler, who by jerk or feign movement, manages to move his opponent.

The most complex variant of this game is to have the wrestlers stand on logs cut in two down the middle (vertically).

Other different variants of the same game:

- the wrestlers face each other in a squatting position,
- the wrestlers face each other in a squatting position on one leg,
- on their knees, one against the other, each wrestler tries hard to overturn the other by pushing him,
- the wrestlers kneel down and fight by executing holds.

**3. Runaway horses:** The two wrestlers take a back-to-back position by hooking each other’s arms, elbows bent. Each starts pulling. The winner is the wrestler who manages to make his opponent step back. For this type of exercise the wrestlers may also hold each other by the hands.

**4. Wrestling by pushing:** The wrestlers are in a standing position, face-to-face, or back-to-back, with their arms folded (in front or behind, depending on the position) and start pushing with the body. The winner is the wrestler who succeeds in pushing his opponent beyond a marked line or a given object. The same game may be organised for two against two wrestlers or more, and also from different initial positions.

There are several options:

- pushing with the back between horizontal bars,
- pushing with shoulders' back to back,
- pushing with shoulders on all four,
- pushing with shoulders in a standing position,
- pushing with the extended hands placed on the opponent's shoulder,

**5. Wrestling by Arms Pushing:** Each of the wrestlers tries to push the arm of his opponent. The winner is the wrestler who makes his opponent bend his arm at the elbow. Alternate the arms, left and then right.

Other Variants:

- The wrestlers hold a stick with both their hands, each pressing as much as he can attempting to overcome the resistance of the other. Success in this effort determines the winner.
  - Each wrestler, after having placed the same arm on the opponent's nearer shoulder, forcefully presses the opponent's biceps with the arm.
- we realized stretching with utilization of oriental systems e.g. Suzuki's system of department flexibility, which is working on the principle of isometric muscle contraction as follows
- stretching the muscles

### **Main part of first lesson**

#### **drilling main poses**

1. *musubi-dachi* (MD) – the pose with heels together but tiptoes are not together, knees are straight
2. *heiko-dachi* (HD) – legs are temperately astride, soles are parallel, knees are temperately shrugged, it is for drilling techniques in a standing position
3. *shiko-dachi* (SHD) – legs are wide astride, knees are shrugged to the shape of letter L, soles are tended to like in pose *musumidači*
4. *hazenkutsu-dachi* (fighting pose – BP) – pose with one leg out advance, knees are temperately shrugged, it is for performed techniques in a standing position and also in movement in combination with other poses
5. *zenkutsu-dachi* (ZD) – attacking pose

#### **drilling choice punches**

1. *seiken-choku-tsuki* – in pose HD, straight hit to the chest, hand is closed to fist (“seiken”) and hit is straight forward, right and left hand are changing and one of them is always pulling forward to body
2. *kizami-tsuki* – in pose BP, it is same hit like seikenchokutsuki but hit is realized with only one hand and it is the hand which leg is in front
3. *giaku-tsuki* – again in pose HD, it is the same hit like seikenčokucuki, hit is realized with only one hand which leg is behind

#### **drilling choice blocks**

1. *uchi-uke* – in pose HD, block with shrugged hand tended to out of body, hand is closed to fist, blocking the middle part of body from internal side
2. *soto-uke* – in pose HD, block with shrugged hand tended from outside in front of body, hand is closed to fist, blocking the middle part of body from outside
3. *age-uke* – in pose HD, block with shrugged upward hand, hand is closed to fist, blocking head
4. *gedan-baraj* – in pose HD, block from shrugged position, hand is stretch out to bow tended to down and it is closed to fist, blocking the lower part of body

#### **drilling the choice kicks**

1. *mae-geri* – in pose BP, forward direct kick, kick is with bending tiptoe, fingers upward (“koši”)
2. *mawashi-geri* – in pose BP, forward kick on bow, kick with straight instep
3. *joko-geri* – in pose BP, direct kick on side, kick with little toe side of sole

#### **drilling the movement of displacing in stances**

1. *aiumi-ashi* – in pose BP, ZD, SHD natural walking wit exchanging front and back leg
2. *suri-ashi* – from pose BP with front leg advance to ZD and back to BP with back leg

#### **Main part of second lesson**

- repetition previous techniques from the first lesson
- drilling techniques in couples yakusoku-kumite - children stand in pose BP opposite each other in safe distance, they have divided tasks defender/aggressor, both exert aggressive and defensive techniques which are determined and controlled by teacher (e.g. aggressor –perform hit giakucuki, which is tended to the opponent`s trunk and defender –defend himself with block sotouke), in this part of lesson is very important discipline and teacher`s organisative abilities.

**Final part**

- final part of lesson we give a time to play some games which are for development perceive, speed of reactions, tactical abilities and balance. We utilized games like that:

**1. Sticky hands** :Two partners are joined together by using the same hand on both sides, i.e. either their right or left hand. The role of the first one is to move and guide the partner without any use of power. The main task is to concentrate on the leader by means of the contact between their palms. This activity should be done within 30-60 seconds, without the use of strong pressure between palms.

**2. Fast hands** : Two partners are kneeling or crouching against each other, their hands are lowered. The palms of the first one are opened upward (attacker), the palms of the second one downward, i.e the defensive role. They slightly touch their connected palms. The teacher gives a clear signal. The attacker tries to grasp quickly his opponent palms, and the other partner tries to do the same thing. They do it 5-10 times, and then change their role. Each partner gains for every successful grasp one point.

**3. Leg trip:** Face-to-face, with hands on the shoulders of the opponent, the two wrestlers try hard to throw each other off balance. The winner is the wrestler who forces his opponent to contact the mat with a part of his body other than his feet.

We finished the lesson with salutation, same like on the beginning. It means all of us did the bow “REI” in pose “*musumidaci*”. During the lesson at every repetition we tried to count in foreign languages like for example: Japanese, English or German. The most interesting for children, was counting in Japanese and also together with another Japanese expressions from karate.

**INHIBITION**

In the end we would like to state on foundation our experiences, that it is important to try improve the quality and concreting the martial sport`s lessons in framework of studying physical education at universities. The positive results, which are attributed to this area of physical education can be unambiguously demonstrate so we regard as important to give a time and proper attention to this problematic of martial sports and arts in process of education. Only good quality prepared teachers with broad theoretic but mainly practical knowledge at each areas of physical education can install trend to improve quality of educational process.

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## SUMMARY

In the work the author concern with an application of basic karate training elements in physical education, thematic part martial sports and games. They would give an idea of some content parts and some methodical processes in the basic karate training that is possible to

apply by the martial games and other martial sports in physical education on elementary school level. This is a methodical contribution which aim is to provide more broad view to skilled public on the application possibilities of content and the old martial art of empty hand philosophy from Okinawa which is adapted to needs and particularity of children development on elementary school level.

## **Pokyny pre spracovanie príspevkov**

Termín zaslania príspevkov pre jednotlivé vydania časopisu **je 30. maj, resp. 30. november** v elektronickej forme na adresu: [michal.jiri@fhv.umb.sk](mailto:michal.jiri@fhv.umb.sk)

Všetky príspevky budú recenzované. O zverejnení príspevku rozhoduje redakčná rada na základe posudkov.

Príspevky v rozsahu 6 - 20 strán môžu byť napísané **iba v anglickom jazyku**

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