

# DETERMINING THE DIFFERENCES OF THE MOTOR SKILLS OF YOUNGER SCHOOL AGE STUDENTS PHYSICAL AND HEALTH EDUCATION CLASSES

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## Abstract

The goal of this research is to determine the differences of the motor skills between boys and girls in physical and health education classes. The research was conducted on a sample of N=83 students, of which N=38 were boys and N=45 girls, at the age of 6 to 8. The research included students from I to III grade of elementary school. The following 5 tests for the evaluation of motor skills were applied: movement speed (hand tapping), pliability (sitting reach), explosive leg power (long jumps from place), body strength (recumbency-sitting) and running speed and agility (running 10x5 m here and there). From statistical methods, the following test were applied: descriptive statistics, Chi-square test, Kolmogorov-Smirnov Z-value, and the indexes of curvature and distribution kurtosis of dependent variables, Levene's test of equality of variance errors, Box's test uniformity of matrix elements of the variance-covariance with the dependent variables and Multiple analysis of variance. On the descriptive level it was determined that there are differences in the motoric abilities between boys and girls in the MBFTAP test and ŠL 10x5 m in favor of the girls, but those differences are not statistically significant. In the MFLPRR, MFLPRT and MFESDM tests, the results are in favor of boys and these differences are not statistically significant, except for the long jump, where the difference is statistically significant on a level lower than 1% ( $F=10,3209$  i  $p<0,01$ ).

**Keywords:** differences, motoric abilities, students at the age of 6 to 8.

## Introduction

Considering that, during the growth and development, the relation of motoric abilities and morphological characteristics are changing, it is necessary to monitor them in different age periods. For the period from first to fourth grade of elementary schools, it is characteristic to have a relatively harmonious development. All of the characteristics and abilities take place harmoniously, there are no large jumps in the development at all, neither some characteristics and abilities separately (Findak et al., 1992). Motoric abilities are conditionally defined as latent motor structures that are responsible for an infinite number of manifest motor reactions and can be measured and described. Motor abilities are not important only for themselves, but also for the development of other characteristics and abilities. If motor abilities are not developed to the level which can objectively be reached considering the genetic limitation, it is highly likely that that kind of individual will not be in a condition to constructively and easily perform various everyday tasks, neither will be encouraged the development of other characteristics and abilities connected to the motor skills. Besides, the mentioned motor skills do not have identical inherent coefficients, which is why some are smaller during life, and some are higher under the influence of exercising process. Speed, coordination and explosive strength are significantly more inherent, than repetitive and static strength, and also flexibility (Findak, 2003). To perform the influence on the abilities with higher level of

inherence, it is necessary to start early with the transformation process, respecting the sensitive periods for the development of certain characteristics and abilities (Prskalo, 2004). Our school system does not monitor only weight and precision, partly because of the limited time, and partly because of kinesiometry reasons (Findak et al., 1996). There is a whole series of investigations of anthropological features of the students, both in BiH, Croatia and abroad. The researches are of different kinds and different goals, and different are the samples of examinees from infants to adults. Researching the gender differences in conditionality of motor skills by the inherent factors, it is concluded that the genetic factors are more expressed with the female subjects (Mikić, 2000). Some researches are conducted exclusively to prove the validity of certain tests of motor skill, so the research on a sample of 126 students from fifth to eighth grade with the analysis of test results for the evaluation of motor skill of explosive power such as speed of the students points that almost every value are receiving continuous increase through the period of the age 10/11 to 13/14. The research included two variables from the anthropometric characteristics area, and three variables that evaluated by the base of measuring with the help of photo cells the motoric ability and explosive strength such as speed using the tests: running at 20 m; start reaction and speed on 5 m; and start speed with pass to 10 m (Čanaki et al., 2005). The goal of the research of construction and validation of one measuring instrument for the evaluation of repetitive strength of all body parts, was conducted on 29 students at the age of 14. The variables were made of usual tests for the evaluation of repetitive strength: sit ups; lifting legs while lying; hull shelter while lying and chin-ups venture. Reliability of the measuring instrument is examined with t-test and determined that the test is highly reliable even though that characteristic should be examined on a more homogenous sample (Mikulić and Oreb, 2006). Some researches have proved that there are no differences between the students nor progression after a certain cycle of exercising. So the authors (Polančec, et al., 2007) on a sample of 180 students divided into groups elementary school Vinica and elementary school Klenovik according the gravity of elementary schools

they attend, by the given results they show that there are no differences in the bigger number of tests and that the populations can be treated as almost the same. On a sample of 22 examinees of the elementary schools in Zagreb, the students were monitored during two years with the help of 4 anthropometry tests, 6 motor abilities tests (polygon backwards, long jump from place, endurance in chin-up, hand tapping, sit and reach and hull lifting) and one test for functional abilities. It is confirmed that the students who could not additionally practice sports activities, in the classes of physical and health education of twice a week for 45 minutes could not significantly develop the anthropological characteristics (Sertić et al., 2008). Trošt Bobić et al. (2008) who have also examined 155 students of the fourth grades in three elementary schools in Rovinje. The battery of measuring instruments was made of test for evaluation of the basic motor skills (17 of them) and two morphological variables. With the discriminative analysis they did not find and differences between the students who exclusively attend the physical and health education classes, and those who additionally practice some other form of organized exercising at least twice a week. An interesting research is the one where (Delija et al., 2005) analyse the difference between the groups of examinees at the age of 10 to 11 included in different kinesiology activities. Subsample is consisted of three groups: athletics, students who exercise group sports and students who exercise other sports. They measured 3 anthropometric variables, 6 motor variables and one functional. With MANOVA method (analysis of quantitative differences) the conclusion is that the different kinesiology treatments made big differences between the groups of examinees, and that the most expressed results are of the students who practiced athletics. Pejčić (2001) researches 655 students from I to IV grade. The students are examined in 4 morphological variables and 6 motor variables (long jump, 20 m sprint, endurance in chin-up, hull liftin and backwards polygon). The conclusion it that the girls have better results only in flexibility and that the physical and health education classes can affect the changes of morphological characteristics and motor skills. Katić and Pažanin (2002) are doing a research on 249 boys at the age of 7 in 10 motor

variables (backwards polygon, balance, side steps, foot tapping, hand tapping, endurance in chin-up, hull lifting, 20 m sprint, long jump from place and ball throwing). One of the conclusions is that the programmed transformation process shorter than a year and a half can not cause changes in the general coordination-energetic integration. Babin et al. (2006) have examined 294 girl students of first grades in 14 morphological and three motor variables (long jump, hull lifting and endurance in chin-ups) with which they proved a high level of connection of latent structures of morphological space and strength dimensions; but there is a highlight on the negative effect of the increased quantity of the subcutaneous fat which affects the results in the strength tests. A big research is conducted on 1028 students at the age of 7 in 11 variables that are standardly used in the educational system (four morphological, 6 motor and one functional). In the research is shown that the students have scored better results in the test of explosive and static strength and in the coordination and aerobic endurance. There is also determined a whole connection of the anthropological space, that is significant connection of the morphological characteristics and motor abilities on an aerobic endurance. The authors point out the importance of the performance of quality classes of physical and health education in which are applied programs that efficiently contribute to development of motor skill and interconnectedly functional abilities (Pejčić et al., 2008). Transversal research (Prskalo et al. 2009) on a sample of 128 boy students and 117 girl students from first to third grade of elementary schools divided into subsamples by the age and gender is researched in 19 anthropometric variables and 12 motor variables (side steps, backwards polygon, sit and reach, sit and reach on a bench, hand tapping, hand tapping 10'', leg tapping to a wall, long jump from place, endurance in chin-up, hull lifting and high jump). The conclusion is that motor skill system does not show any significant differences justifying the mutual working organization for boys and girls from I to III grade of elementary school. Recent research was conducted on a sample of 400 students of early school age. Anthropometric measuring were conducted with three standard instruments, motor with six instruments (hand tapping, long jump from place, back-

wards polygon, hull lifting, sit and reach and endurance in chin-up), functional with one test, and motor achievements are evaluated with the use of six instruments. The analysis of condition of motor skills and achievements indicates the progress in a great part of motor area and is present the differentiation towards the gender so the boys achieve better results (Cetinić and Petrić, 2010).

## Methodology

### Sample Subjects

The research is conducted on a sample of N=83 students, of which 38 boys (45,8%) and 45 (54,2%) girls, at the age of 6 to 8. The research included students from I to III grade of elementary schools. The students were, while school enrollment and during measuring, treated as healthy and capable of physical and health education classes. The examinee sample included in total 26 (31,3%) students of I grade (14 boys + 12 girls), 28 (33,7%) students of II grade (12 boys + 16 girls) and 29 (34,9%) students of III grade (12 boys + 17 girls), with the help of test drawn out of battery made of 110 test divided into 23 subgroups, constructed in a way that it covers a hypothetical model of motor abilities structure defined by Kurelić et al. (1975). For this division of frequency cases there was a Chi-square test conducted whose value is 1,004 and is not statistically significant (Chi-square=1,004 and  $p>0,05$ ). That means that the sample are most probably good equalled according to the age (probably but not certainly because the grade is an age measurement, and not the real age of the examinee, which can be stated as one of the methodological objection to the analyses).

### Sample Variables

For the needs of the research, the following measuring instruments were applied, 5 motor variables for the evaluation of the motor abilities: Movement speed: Hand tapping (MBFTAP); Running speed and agility: Running here and there 10x5 m (ŠL 10x5m); Explosive leg strength: long jump from place (MFESDM), Repetitive strength: Hull lifting from lying with shriveled legs (MFL-PRR) and Flexibility: sit and reach (MFLPRT).

Methods For Data Processing

From the statistical methods the following test were applied: descriptive statistics, Chi-square test, Kolmogorov-Smirnov Z-value, and the indexes of curvature and flattening of distribution of dependent variables, Leven’s test of the equality of variance mistake, Box’s test uniformity of matrix elements of the variance-covariance with the dependent variables and Multiple variance analysis.

Results

The results of measuring the motor skill are displayed through six tables according to the samples defined based on the gender. Table 1 represents the basic parameters of the descriptive statistics referred to average values of measures of deviations of dependent variables, of students from I to III grade in elementary school.

Based on the results from Table 1 we can see, on a descriptive level, that the male examinees have bigger average values on MFLPRR compared to the girls. That difference can also be a reflection of accidental variations, so Multiple analysis of variance will be used separately to examined the significance of this difference between boys and girls. Male examinees also have bigger average values in MFESDM compared to girls, and con-

serving the average value of MBFTAP according to the gender we can see that the female examinees have scored a better result, 22,556, and males 21,815. Speed is an ability with relatively high percentage of innateness and it can be affected only in certain development age. Sensitive periods for speed looking from the seventh year of life are until the age of 16, and especially favorable periods are at the age of 10 to 14. The strength depends on the morphological structures, which are the systems responsible for its development and for the transfer and control. During the adolescent development the strength is getting bigger according to the physiological and chronological age, and it depends on the system of anthropometric features. Maximum muscle force depends on the physiological cross section. The bigger it is, the bigger the strength is. But what also affects the strength is the density and type of muscle fibers (Prskalo, et al., 2009). Average value of ŠL 10x5 m (running here and there 10x5 m) according to the gender, with the female examinees there is a better result, 25,438, and the male examinees 24,683. And in the end at the average value of MFLPRT (sit and reach) considering the gender, the male examinees have accomplished better results than the females, which can be seen in the table. With the growth of flexibility, also grows the total motor efficien-

Table 1. Descriptive statistics referred to the average values, deviations measures of the dependent variables

Variable	Gender	Mean	Std.Dev.	Me
MFLPRR	Male	23,900	4,477	24
	Female	22,378	3,973	22
	Total	23,072	4,254	23
MFESDM	Male	125,684	24,678	129
	Female	101,389	40,704	117
	Total	112,512	36,223	121
MBFTAP	Male	21,815	3,153	21
	Female	22,556	2,841	22
	Total	22,217	2,993	22
ŠL 10X5	Male	24,683	3,683	24,31
	Female	25,438	3,120	26,18
	Total	25,092	3,389	24,91
MFLPRT	Male	18,921	4,401	19
	Female	18,022	4,304	18
	Total	18,434	4,345	19

(MFLPRR – Hull lifting from lying with shriveled legs (lying sitting), MFESDM – Long jump from place, MBFTAP – Hand tapping, ŠL 10 x 5m – Running here and there 10x5 m, MFLPRT – Sit and reach, Mean – Arithmetic mean, Std.Dev. – Standard deviation, Me – Median

cy and the stability of locomotor system is lifted on a higher level. Flexibility is easily developed with children and youth so its development should be planned at the age od 11 to 14 (Prskalo et al., 2009). In most of the motor skill, the boys are better than the girls (Lončar, 2011), which confirms are obtained results. Higher level of motor skills with boys is conditioned with a faster protocol of impulse from the cerebral cortex to the muscle effectors. Every new learned activity is enriching child's motorics in the younger school age, which is especially reflected on his general motor ability.

The resul distribution in significantly curved and/or flattened/elongated.

From Table 2 we can see that all of the depend- ing variables meet the criteria of normality (they

are not significantly curved, flattened or elongat- ed) both in the level of subsamples formed accord- ing to the gender, and on the level of the complete sample, except for the variable regarding the long jump. According to the values of the curvature and flattening index of the result distribution of this variable, is it clear that it is one leporctic and negatice curvature distribution of the results.

Results in the Table 3 show us that, even though some variables significantly correlate with one another, the hight of those correlations is accept- able. With the multivariate analysis and multiple analysis variance, the maximum acceptable, i.e. recommended correlation between the dependent variables is  $r=0,80$ .

Table 2. Measurments and levels of significance of the deviation from normal variable distribution

Variable	Gender	Kolmogorov-Smirnov Z-value	Significance of the deviation from normality	Index of curva- ture distribution	Index of flatten- ing distribution
MFLPRR	Male	0,591	0,876	0,277	-0,453
	Female	0,840	0,480	0,271	-0,322
	Total	0,880	0,421	0,321	-0,344
MFESDM	Male	1,355	0,051	-3,562	17,795
	Female	2,434	0,000**	-2,047	2,650
	Total	2,556	0,000**	-2,418 $\pi$	5,290
MBFTAP	Male	1,017	0,252	0,255	-0,843
	Female	1,172	0,128	0,748	-0,356
	Total	1,384	0,043	0,429	-0,528
ŠL 10X5	Male	0,686	0,734	-0,156	-0,885
	Female	0,705	0,703	0,636	2,085
	Total	0,651	0,790	0,118	0,408
MFLPRT	Male	0,949	0,329	-0,450	-0,336
	Female	0,815	0,520	0,025	-0,584
	Total	1,120	0,163	-0,185	-0,601

(MFLPRR – Hull lifting from lying with shriveled legs (lying sitting), MFESDM – Long jump from place, MBFTAP–Hand tapping, ŠL 10 x 5m – Running here and there 10x5 m, MFLPRT – sit and reach).

Tabela 3. Examining the differences between male and female examinees in dependent variables (MFLPRR, MFESDM, MBFTAP, ŠL 10X5, MFLPRT)

	MFLPRR	MFESDM	MBFTAP	ŠL 10X5	MFLPRT
<b>MFLPRR</b>	1	0,321**	-0,006	0,278*	0,322**
<b>MFESDM</b>	0,321**	1	0,215	0,163	0,291**
<b>MBFTAP</b>	0,006	0,215	1	-0,038	-0,123
<b>ŠL 10X5</b>	0,278*	0,163	-0,038	1	0,217
<b>MFLPRT</b>	0,322**	0,291**	-0,132	0,217*	1

\*\* Correlation is significant on a level lower than 1%.

\* Correlation is significant on a level lower than 5%.

(MFLPRR – Hull lifting from lying with shriveled legs (lying sitting), MFESDM – Long jump from place, MBFTAP–Hand tapping, ŠL 10 x 5m – Running here and there 10x5 m, MFLPRT – Sit and reach).

Table 4. Leven's test of variance equality of subgroups in certain dependent variables (F-ratio)

	F	Liberty degree 1	Liberty degree 2	Significance p
<b>MFLPRR</b>	0,323	1	81	0,571
<b>MFESDM</b>	5,031	1	81	0,028
<b>MBFTAP</b>	1,285	1	81	0,260
<b>ŠL 10X5</b>	1,798	1	81	0,184
<b>MFLPRT</b>	0,051	1	81	0,821

(MFLPRR – Hull lifting from lying with shriveled legs (lying sitting), MFESDM – Long jump from place, MBFTAP–Hand tapping, ŠL 10 x 5m – Running here and there 10x5 m, MFLPRT – Sit and reach, F - ratio).

From the Table 4 we can see that most of the dependent variables meets the criteria of homogenous variance except for the variable **MFESDM** which has the F-ratio significant on a level lower than 5%.

Table 5. Box's test of equality of the matrix of variance-covariance of dependent variables

<b>Box's M-value</b>	30,772
<b>F</b>	1,914
<b>Liberty degree 1</b>	15
<b>Liberty degree 2</b>	24810,336
<b>Significance p</b>	<b>0,018</b>

The results in Table 5 display that the criteria of the equality of the matrix of variance-covariance is disrupted which can be concluded from the value and level of significance of Box's M-value.

Results in the Table 6 show that even though on the descriptive level, with some variables there

are smaller differences, they haven't shown statistically significant. We can say that the only significant difference between the male and female examinees is found with the variable **MFESDM** (long jump). Male examinees have better results in long jump than the female examinees and that difference is statistically significant (F=10,3209 and p<0,01). The test results for flexibility measuring: Sit and reach (MFLPRT), i.e. „sit and reach on the bench“ are not statistically significant, but are also in favor of the boys, even though it was expected for the girls to be better because they are considered more flexible than the boys. The demands and characteristics of the games that are most often the subject of children's interest in this age could be considered also the causatives of the development of certain motor abilities. That is how boys develop their speed, strength and coordination during

Table 6. Final multiple analysis of variance in examining the difference significance between male and female examinees in certain dependent variables (MFLPRR, MFESDM, MBFTAP, ŠL 10X5 m, MFLPRT)

Source of variability	Variable	Sum of squares	Liberty degree	Variance	F-ratio	Level of significance
<b>Gender (male and female)</b>	MFLPRR	47,410	1	47,410	2,674	0,106
	MFESDM	12159,639	1	12159,639	10,320	0,002**
	MBFTAP	11,275	1	11,275	1,263	0,264
	ŠL 10X5	11,754	1	11,754	1,024	0,315
	MFLPRT	16,645	1	16,645	0,880	0,351
<b>Inside groups</b>	MFLPRR	1436,157	81	17,730		
	MFESDM	96434,431	81	1178,203		
	MBFTAP	722,822	81	8,924		
	ŠL 10X5	929,986	81	11,481		
	MFLPRT	1531,741	81	18,910		
<b>Total variability</b>	MFLPRR	45667,000	83			
	MFESDM	1158290,082	83			
	MBFTAP	41702,000	83			
	ŠL 10X5	53200,949	83			
	MFLPRT	29752,000	83			

F-ratio is statistically significant on a level lower than 5%.

the various jumping, crawling, climbing, running, etc., unlike the girls who mostly play games on a smaller space, with less moving, but somewhat more precise and flexible moves that contribute to development of the flexibility (Matić, 2008). As for the test for measuring the speed movement: Hand tapping (MBFTAP) considering the gender based on the given results can be concluded that female examinees have scored a better result, 22,556, and the male examinees 21,815. As for the test for measuring the repetitive strength: Hull lifting from lying with shriveled legs (MFLPRR), based on the given results on a descriptive level, we can see that the male examinees have better results compared to the girls. Statistically significant improvement was not reached neither in the test for measuring the speed of running and agility: Running here and there 10x5 m (ŠL 10x5m). That was expected, considering that the speed as a motor ability is in a significant measure genetically predetermined. Absence of differences according to the gender inside the same age group is expected for a developing period of a younger school age, considering that the children of that age, no matter the gender, are relatively parallel developing, that is the changes during the growth and development both with the boys and the girls are mostly concurrent.

### Discussion

Similar results were obtained by many authors in their researches. Thanks to enriched motor life accomplished by running for the ball, climbing the trees and running, and also bigger will for winning and greater motifs for accomplishment in that period of growth (Maslov, 1982), boys accomplish better results in tests of strength, coordination and speed of running, compared to the girls. They have different interests, lead a somewhat „calmer life“ when it comes to games. Girls are better at more fine, precise movements (Burton, 1998). Better developed motor abilities with boys come from more intense movement in preschool and in younger school age. Exactly these conditions and characteristics of the games that are mostly a subject of children's interest at this age, could be considered also the causes for the development of certain motor abilities. With the discriminative analysis, the differences between girls and boys in

IV grade of elementary school were determined, who except for physical and health education regularly exercise any other sport at least twice a week (and for a minimum period of six months) and those who exclusively go to the physical and health education classes. The results show that there are no significant differences and that they are not statistically significant with those students who only go to physical and health education classes. The results obtained with the t-test for independent samples show that the motor skills in which starts the differentiation between boys and girls in IV grade of elementary school, is exactly the explosiveness, coordination and precision (in favor of boys) and flexibility (in favor of girls). We can explain the results obtained by discriminative analysis with the fact that exercising twice a week is insufficient to cause any significant changes in a human organism, especially at this age. The obtained results indicate the significant component of the exercising process, quantity. However, the quality of the training is a very important factor in the exercising process, but with this research we have once more confirmed that in the goal for the causing positive reactions of a human organism, it is necessary to have a quality, but also frequent training (Trošt Bobić et al., 2008). On a sample of examinees of 118 students (out of which 61 boy and 57 girls), from I to IV grade of elementary schools in Zagreb, at the age of 7 to 10, the students were measured in 7 motor variables. In the first grade while determining the differences according to the gender, the test of strength explosiveness „long jump from place“ has shown significant. In the second grade, significant are the differences in tests „backwards polygon“, „hand tapping in 15 seconds“, „long jump from place“ and „high jump from place“. In the third grade significant tests are „backwards polygon“, „sit and reach on the bench“ and „hand tapping in 15 seconds“. In the fourth grade significant was the test of coordination „backwards polygon“. The measuring results of the test „sit and reach on the bench“ are statistically significant only for the boys and girls in the third grade. Usually the girls are more flexible than the boys so it should be noticed that in this case exclusively boys from third and fourth grade are showing better results. In the test „hand tapping in 15 seconds“

statistically significant differences can be seen in the second and third grade. If we compare the results with the applicable standards (Findak et al., 1996) we can see that the results of boys are above average in the first and the third grade, and excellent in second and fourth. The results of the girls in the second grade are average, while in the first and fourth grade are above average. The results in the third grade are excellent which is according to the fact that the girls are better than the boys of that age. Statistically significant differences between the boys and the girls on the test „long jump from place“ can be seen in the first and the second grade. If we compare the results of the boys with normative values for the Republic Croatia (Findak et al., 1996) we can see that there is no progress in the measured motor ability so the boys in the first grade are that way above-average, in the second grade average, in the third grade below-average, and in the fourth grade even bad. The girls are bad only in the second grade, in the first and fourth grade are below average, while in the third grade are above-average and better than the boys of that age. On the test „hull lifting“ there were no statistically significant differences between boys and girls in the lower classes of elementary schools. If we compare the results with the nominated (Findak et al., 1996), the boys are in the first grade average, but are progressing, in the second grade above-average, and in the third even excellent and better than their peers. In the fourth grade, the results of the girls are average again (Lončar, 2011).

### Conclusion

This research was conducted with the goal of determining the differences of motor skills between boys and girls from I to III grade of elementary school (at the age of 6 to 8) in the important variables from areas of motor abilities that represent a base for success and progress of children of younger school age, in classes of physical and health education. The sample of examinees included the I grade class, in total 26 students, the II grade class, in total 28 students, and the III grade class, in total 29 students, which is in total N=83 students. The population, from which is drawn a sample of examinees, is defined as a population of students in the first triad of elementary school. The

students, when they enrolled to school and also in the time of measuring, were treated as healthy and capable of physical and health education classes. The sample of motor variables was made of following battery: explosive strength: long jump from place /MFESDM/, movement speed: hand tapping /MBFTAP/, repetitive strength: hull lifting from lying with shriveled legs / MFLPRT/, flexibility: sit and reach /MFLPRR/ and speed of running and agility: Running here and there 10x5 m (ŠL 10x5 m). Motor abilities are increasing accordingly and continuously in the function of the age with both genders. Most of the tested motor abilities have a positive trend of growth during the whole three classes, even though it would be desirable that the present results go above average, they mostly go together with the average values. The obtained results show that there are differences in the greater number of tests, but those differences are not statistically significant and that the boys and the girls can be treated as almost equal, which is normal for their age, except for the test long jump from place /MFESDM/, which is statistically significant and goes in favor of the boys. The results point that motor abilities in which starts the differentiation between the boys and the girls are visible and mostly significant later, in adolescence. The results indicate the conclusion that this age and variables should be given more time in the precise programming of the exercise process, because the results depend on the quality and the way of work which is conducted with children in physical and health education classes. Life style of today's children is mostly subservient to sitting at school, computer workshops, music schools, foreign language schools. So, the children even after those classes stay in the sitting position with minimum movement. This way of living, and fast food, lead to children's and student's abilities are ever more behind regarding their physical development. Hence, including the students in any kind of sports activity has a great significance. Because a human is not made for not moving. On the contrary, he did survive, developed thanks to moving (Findak, 1997). The analysis of the motor abilities condition indicates the progress during a three-year school attendance in a great part of motor area, but still there is no significant difference according to the gender even though the

boys achieve somewhat better results in most of the measuring because of their specific development in which the children are during their first three grade of elementary school. In any case, it would be good to upgrade this work expanding it to a greater number of examinees and conduct the research in a longitudinal shape which would increase the precision of the obtained results.

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