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Organization of Physical Activities as a Precondition of Quality Development of Motor Abilities of Pre-School and School Children

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Abstract: *In their work authors consider the significance of the organization of physical activities for the development of abilities of pre-school and school children. Led by theoretical basis that physical development of children represents the basis of their whole development, and that "fine motor skills" are determined by the development of its large motorics, the authors point to the significance of the content and structure of physical education programme in preschool institutions and younger age school classes. It is evident that the effects of cultivating of children development during preschool period can be seen in younger primary school classes. The goal of this research was to determine if and how much the different organization of preparatory part of physical education lesson for younger school children, determines the differences in the development of their motor abilities. By the use of experimental method, the effects of prolonged preparatory part of a lesson in younger school classes. This part was realized through complex of exercises which were supposed to have influence on transformation of motor abilities in relation to the structure with standard duration of certain parts of a lesson. It is determined that certain increase in body movement of*

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students during physical activity can significantly contribute to better development of motor abilities. These abilities determine correct physical development and strengthening of health, which determines general aim of physical education.

Keywords: lesson structure, preschool institution, programme of physical education, school

Introduction. In the system of unique practice in preschool institutions and in schools, motor abilities of children (students) determine their development in all aspects. Because of this it is essential to plan adequately and organize everyday physical exercise, which has to be in accordance with children's age, psychophysical laws of their development and individual abilities. When it is known that children in young age develop very fast in motor abilities and that this development is genetically predetermined, regular and properly applied physical activity of a child contributes to more complex motor abilities. One of the most important functions of preschool education and upbringing is preparation of children for school, which also implies their preparation in motor abilities (the development of large motor abilities, small motor abilities and graphomotorics).The development of motor abilities for young school children can be developed by correct physical education lesson structure. It is important to consider different possibilities for structuring of these lessons. One of the possibilities is organizing prolonged preparatory physical education lesson part, by introduction of additional complex of exercises for students which could have influence on transformation of their motor abilities. The effects of such structuring of physical education is possible to monitor trough student results in the domain of the quality of these abilities.

Significance of physical education for preschool and school children

The unique goal of physical education in preschool programmes as well as in school programmes has been strengthening of health, correct physical development and establishing grounds for healthy physical constitution. Even in first preschool programmes in Serbia, by the end of the 19th century, education of preschool children had as a goal, development of child body, senses and spirit, to keep children's out of bad influences and accidents, strengthen child's organism and improve its body development (Kopas-Vukašinović, 2010). It meant establishing basis for healthy physical constitution and gradual complexity of physical activities of preschool and school children. During that time there was a demand in curricula of national schools for realization of gymnastics, swimming, excursions and children games with the aim of protecting and strengthening of their health.

From such goals, trough physical activities in preschool institutions and schools, tasks of physical education were realized, in relation to the

development of healthy, physically good and properly developed child, who will gradually master with its motorics, develop its senses and physical abilities like safety, skillfulness, and accordance of motorics, to the forming of habits for everyday physical exercises. When physical abilities of school children are considered, it should be highlighted that they are significantly genetically determined and influenced by the laws of their physical development during preschool and younger school age. This statement is approved by the results in the space of speed, done in 1990-ies, on the sample of students of the first grade of primary school. In this research significant improvements were not determined in experimental group, in relation to control group, considering their speed as a significant ability in the context of their physical development (Panić, 1999).

Motor development of preschool child is determined by cephalous-caudal and proximo-distal direction of its development. This implies that adequate development of "large motorics" of a preschool child contributes to qualitative development of "fine motor skills", which enables them to have precise and fine movements in older age (Ackermann, 2004; Fine Motor Development...). Because of that "exercises of expansion" for preschool children have special place in method instructions for the realization of physical activities, because they initiate "*the development of their trunk, shoulders, hips and muscles*" (Fine Motor Development...).
The fact that physical development of a child represents basis for the development of its total potentials. Therefore it is not coincidental that among physical education tasks, in preschool and school programmes, development of positive personal characteristics is determined, as well as strengthening of self-confidence, development of cognitive abilities, cultivation of positive emotions and strengthening pro-social behavior of children. These tasks are even today actual in previously mentioned programmes.

Concretisation of physical education tasks of preschool and school children, in relation to all aspects of their development, determines complexity f the organization of physical activities with children (directed activities in preschool institutions and programme activities at school). It is certain that adequately organized physical exercises of children (students) mean their preparation for more complex physical activities in school age, which contributes to the strengthening of their motor abilities. Physical education has been a subject of research of many foreign and domestic theoreticians and researches. When we consider the work with preschool children, trough different body, perceptive and health hygienic activities which initiate motor development from rudimentary abilities of movement, exercise and acquiring of basic children movements, up to general and specific abilities of movement (Kamenov, 1999; Ministarstvo..., 2006). Structuring of physical activities in preschool institutions means their adequacy to age and individual abilities of children, by the laws of their development, as well as their needs for movement, with the aim of acquiring motor abilities. When we talk about organization of physical activities of school children, they are systemized in the system of lessons, starting from the optimal level of physical development of a student. Gals and tasks of students are determined in relation to advancing of already developed general abilities for movement (speed, strength, endurance...) then the development of specific abilities for movement, according to the

potentials of each individual student. The contents of the programme of physical education are presented in three thematic areas: development of physical ability, sport technical education and connection of physical education with life and work.

It is certain that adequate organization of education activities at school implies correct time articulation of students planned activities. Mercurialis was researching the structure of physical education lesson in the 16th century. In his book *Gymnastics Skills,* he divided the concept of a gymnastics lesson into three parts: preparatory, basic and final part. Since then, different authors have determined in different ways the physical education lesson structure (exercises). According to Ling, exercise lesson has five parts and these are: regular exercises, preparatory movements, basic (main) exercises, applied exercise and exercises for appeasement. The timing of each part of the lesson is determined according to the student's age the time of the lesson (Ilić & Mijatović, 2006). In the beginning of the 20th century with the aim to adapt the scheme of physical education lesson to the demands of modern education conceptions, Linhart suggested shortening of time for students exercise (Milanović, 1986). Today prominent methodologists of physical education indicate the possibility of flexible time articulation of some lesson parts, which can last differently, which determines special things in the structure of lessons (Arunović, 1982; Milanović, 1986; Findak, 1999; Marković & Višnjić, 2008; Matić, 1978; Mejovšek, 1962; Rodić, 2000; Tripković, 1983; Višnjić, Miletić & Jovanović, 2004). It is clear that the lesson structure should not be understood as a scheme, as a ready-made recipe which would always and in every situation be applied (Krsmanović & Berković, 1999).

It is a fact that different structure of a lesson can determine the results of children in physical activities. Therefore we started from the statement that organization of physical activities can be significant starting point of qualitative development of motor abilities of children in preschool institutions and schools.

The methodology of research

The Goal of the Research

To determine if and how much different organization of preparatory part of physical education lesson for younger school students, determines the differences in the development of their motor abilities. This primary goal of the research is divided into the following goals: a) evaluate *the effects of prolonged preparatory part of physical education lesson,* which is realized by the complex of exercises, which could influence on transformation of students motor abilities; b) evaluate *the effects of the application of the additional exercise* for students, in prolonged preparatory part of a lesson, in relation to the development of their essential physical characteristics and bigger muscle zones.

The research tasks

1. Evaluate the level of motor abilities of students in experimental and control group (initial and final evaluation).
2. Determine the significance of difference between experimental and control group of students on initial and final evaluation in relation to motor abilities.
3. Determine significance of difference of the effects of experimental and control treatment in relation t the state of motor abilities.

Methods and procedures, place and time of research

It was longitudinal research of experimental character. Pedagogical experiment was prepared with parallel groups. The research was realized in primary school "Jovan Jovanovic Zmaj" in Svilajnac, Republic of Serbia, in the first term of 2010/2011 school year. Experiment was realized with fourth year primary school students and lasted 35 lessons.

The course of research

Initial evaluation was done during the first two lessons of regular physical education teaching. After the initial evaluation, a 30 lesson treatment started. Experimental treatment consisted of prolonged preparatory part of physical education lesson, which was named "obligatory part" and it was aimed at improvement of students' motor abilities. Beside obligatory complex of shaping exercises, which lasted five minutes, preparatory part took ten more minutes of organized activities which were meant to have influence on transformation of students' motor abilities. The complex of shaping exercises was changed every ten lessons. In the first complex students did the exercises individually. The second complex consisted of exercises in pairs, and the third complex consisted of shaping exercises, with equipment (balls, punts, rods...). After the complex which consisted of 8 to 10 shaping exercises, the "obligatory part" of preparatory part of a lesson was realized.

Programme of additional exercise consisted of organized strength exercise. This programme is divided according to topology criterion. This means that during one week, exercises for arms and shoulders and torso were done in one lesson. Then in second lesson exercises for torso and legs were done and in the third lesson there were exercises for arms and shoulders and legs. With this dynamics all bigger muscle zones were subjected to intensive load two times a week. Beside topology criterion, exercises in "obligatory part" of preparatory part of a lesson were organized in the function of strengthening of those muscle areas which were less engaged during main part of the lesson. These exercises are organized as additional exercises in relation to primary exercise during the main part of a lesson.

During intensive work (exercising) students got the instructions about correct initial posture, movement amplitude, repetition number in one

series, number of series, character and length of a break between series, proper breathing during exercises. In this way the students acquired a certain corpus of theoretical knowledge which will be used for individual exercising during extracurricular activities. The students age conditioned that all contents are planned so that the load in exercises is represented by gravity force, own body, resistance of a partner with similar abilities and equipment for a certain age.

Control group of students worked (exercised) according to classic physical education lesson structure. In control group the preparatory part of a lesson lasted seven to ten minutes and consisted of the complex of eight to ten shaping exercises without "obligatory part".

For the evaluation of motor ability six standard motor tests were applied - "*Eurofit*" battery (Kukolj et al., 1993). All motor tests were realized in standard conditions in physical education gym.

During the tests the schedule of the realization of motor abilities was : plate tapping (EFTA), - for the evaluation of segmentary hand speed; 10x5 meter shuttle run (EFAG) - for the evaluation of speed - agility; a 30 metres running (EFSB) - for the evaluation of sprint speed; sit-ups for 30 seconds (EFLS) - for the evaluation of repetitive strenght of stomach muscles and flexors in hip joint; bent arm hang (EFZG) - for the evaluation of isometric force of upper body part and flexors in elbow joints; standing broad jump (EFSK) - for the evaluation of explosive strenght of extensor leg muscles.

Statistical data processing

The data which were acquired by this empirical research were processed by the use of certain statistical procedures. From descriptive statistics, for each variable, arithmetic middle was calculated.(M); standard deviation (Sd), minimal result (Min); maximal result (Mah); variation coefficient (Cv); trust interval (Interv. pov.); the degree of curve inclination - skewness (Skew), the degree of curvation of the top of the curve - kurtosis (Kur) and Konglomorov - Smirnov test (KS-p).

In order to test the significance of differences of arithmetic middles for each group multivariant analysis of variance (Manova) and discriminative analysis were done. For the significance of differences of variables univariant analysis of variance was done (Anova).

In order to test the significance of differences of the effects of the treatment univariant analysis of covariance was applied (Anokova).

Research sample

In this research - experimental treatment 56 fourth grade primary school students were involved. They were divided into experimental group (26 students) and control group (30 students). All students were healthy and capable of physical education lessons. During experimental teatment their absence was not higher than 10% of total number of planned physical education lessons. During this research they did not participate in any

other active physical exercise. Complete initial and final evaluation of motor abilities was done for these students.

Results and interpretations

In accordance with the planned goal and methodological approach, motor abilities of experimental and control group were researched on initial and final evaluation, as well as of experimental and control treatment.

Motor abilities of experimental and control group students (initial and final evaluation)

Table 1. Descriptive indicators of experimental group of students on intial evaluation

Varij.	*M*	*Sd*	*Min*	*Mah*	*Cv*	*Interv.*	*Pov.*	*Skew.*	*Kurt.*	*KS-p*
EFTA	128.15	13.18	109.0	158.0	10.28	122.83	133.48	.66	-.35	.371
EFAG	228.96	40.14	181.0	299.0	17.53	212.75	245.18	.58	-1.07	.103
EFSB	55.65	3.46	50.0	64.0	6.22	54.26	57.05	.72	-.18	.303
EFLS	22.42	2.74	17.0	27.0	12.24	21.31	23.53	.13	-.83	.539
EFZG	204.62	164.98	10.0	540.0	80.63	137.96	271.27	.43	-1.11	.224
EFSK	139.08	17.42	100.0	168.0	12.52	132.04	146.11	-.62	-.12	.995

Legend: M - arithemtic middle; Sd - standard deviation; Min - minimal results; Mah - maximal results; Cv - coefficient of variation; Interv.pov. - trust interval; Skew. - the degree of curve inclination; Kurt - the degree of curvation of the top of the curve; KS-p - Konglomorov-Smirnov test.

By the insight of *Table 1.* it can be noticed that the initial evaluation results of experimental group motor ability do not differ from the optimal indicators for their age.

Table 2. Descriptive indicators of control group of students on initial evaluation

Varij.	*M*	*Sd*	*Min*	*Mah*	*CV*	*Interv. Pov.*		*Skew.*	*Kurt.*	*KS-p*
EFTA	129.07	12.65	104.00	151.00	9.81	124.34	133.79	.28	-.92	.407
EFAG	224.13	38.85	184.00	295.00	17.33	209.63	238.64	.79	-1.15	.006
EFSB	55.90	3.13	50.00	62.00	5.61	54.73	57.07	-.10	-.45	.798
EFLS	22.67	2.83	17.00	27.00	12.50	21.61	23.73	-.14	-1.14	.465
EFZG	319.30	219.73	10.00	670.00	68.82	237.23	401.37	.06	-1.30	.699
EFSK	143.47	16.66	108.00	170.00	11.61	137.24	149.69	-.52	-.40	.998

By the insight into data in *Table 2* it can be noticed that the results of initial evaluation of motor abilities of control group of students also do not differ from optimal indicators for their age. By further analysis of the results on initial evaluation of motor abilities of students in experimental and control group, the difference can be noticed between arithmetic middles. Experimental group on initial evaluation had on average better results in plate tapping (EFTA) for 0.92 s, in a 30 meters running (EFSB) for 0,35 s, in the activity “sit-ups for 30s” (EFLS) for 0.25 repetitions. Control group of students on initial evaluation had on average better

results in 10x5 meter shuttle run (EFAG), for 4,83 s, in activity "bent arm hang" (EFZG), for 114.68 s, in standing broad jump (EFSK), for 4.39 cm.

Table 3. Descriptive indicators of experimental group of students on final evaluation

Varij.	*M*	*Sd*	*Min*	*Mah*	*Cv*	*Interv. Pov.*		*Skew.*	*Kurt.*	*KS-p*
EFTA	116.00	6.78	102.0	125.0	5.84	113.26	118.74	-.39	-1.22	.533
EFAG	204.27	32.38	170.0	280.0	15.85	191.19	217.35	1.16	.01	.028
EFSB	53.27	3.70	48.0	62.0	6.95	51.77	54.77	.74	-.40	.350
EFLS	25.23	2.32	20.0	29.0	9.20	24.29	26.17	-.23	-.31	.285
EFZG	318.23	182.00	26.0	649.0	57.19	244.70	391.76	.29	-.99	.608
EFSK	147.92	14.76	119.0	178.0	9.98	141.96	153.89	-.12	-.54	.955

In experimental group of students there were positive effects of experimental treatment, which produced improvement of average results in all six variables. The improvement of average results was determined for plate tapping (EFTA) for 1.17 s; in 10x5 meter shuttle run (EFAG) for 2.47 s; in a 30 m running (EFSB) the results were better for 0.24 s; in activity "sit-ups for 30s" (EFLS) results were better for 2.81 repetitions; in activity "bent arm hang" (EFZG) the improvement was for 11.36 s; in standing broad jump (EFSK) the result was better for 8.84 cm. The highest deviation from middle value was for the activity "bent arm hang" with values of 164.98 on initial and 318.23 on final evaluation.

It is significant to say that the skewness values with negative mark indicate especially positive asymmetric curve. The value of kurtosis is less than 3.00, which determines the model of leptokurtic curve, which states that the results are homogenous.

The results of Koglomorov-Smirnov test show that the distribution of values for the results of researched variables on initial and final evaluation are in the frame of normal distribution (*Table 1, Table 3*).

Table 4. Descriptive indicators of control group on final evaluation

Varij.	*M*	*Sd*	*Min*	*Mah*	*Cv*	*Interv. Pov.*		*Skew.*	*Kurt.*	*KS-p*
EFTA	126.10	11.41	102.0	150.0	9.05	121.84	130.36	.11	-.55	.971
EFAG	322.87	545.27	180.0	3202.0	168.88	119.21	526.52	5.15	24.73	.000
EFSB	54.90	5.71	29.0	63.0	10.41	52.77	57.03	-3.10	12.36	.152
EFLS	22.83	2.79	19.0	28.0	12.23	21.79	23.88	.27	-1.44	.139
EFZG	313.47	219.98	10.0	703.0	70.18	231.30	395.63	.22	-1.20	.870
EFSK	144.13	16.92	100.0	173.0	11.74	137.81	150.46	-.69	.22	.996

In control group of student's classical structure of physical education lesson influenced with its positive effects improvement of average results in four out of six researched variables. Average improvement of the results on final evaluation was in plate tapping (EFTA) for 0.3 s and in a 30 meter running (EFSB) for 0.1 s. In activity "sit-ups for 30 s" (EFLS), the improvement was 0.16 repetitions, while in standing broad jump (EFSK) this improvement was 0.66 cm. The highest deviation from the middle value, which is indicated by standard deviation, on initial evaluation was for the activity "bent arm hang" (EFZG) with a value of 219.73. On final evaluation, the highest deviation was in 10x5 meter shuttle run (EFAG) and for the activity "sit-ups for 30 s" (EFLS) higher than 3.00, which

indicates the model of leptokurtic curve, which proves that the results are very heterogeneous.

The values of Koglomorov-Smirnov test indicate that the distribution of values for the results of the researched variables, on initial and final evaluation, is within normal distribution (*Table2, Table 4*).

Significance of difference between experimental and control group of students on initial and final evaluation in relation to the state of motor abilities

The value of multi-variant analysis of variance (*Table 5*) proves that between experimental and control group of students on initial evaluation, in relation to six researched motor variables, there is no statistically significant difference, since the level of statistical significance is p=.153. This is also proved by the value of discriminative analysis which denotes that there is no statistically significant difference and clearly defined borders between experimental and control group of students on initial evaluation in relation to six researched variables. The level of statistical significance is p=.163.

Table 5. Significance of difference between experimental and control group of students on initial and final evaluation in relation to the state of motor abilities

Analysis	n	F-i	p-i	F-f	p-f
Manova	6	1.652	.153	6.591	.000
Discriminative	6	1.618	.163	6.457	.000

Legend: n - number of variables; F-i - value of F test on initial evaluation; p-i - the level of statistical significance on initial evaluation, F-f - the value of F test on final evaluation; p-f - the level of statistical significance on final evaluation.

On final evaluation it can be stated that there is statistically significant difference between experimental and control group in relation to all six researched variables, with a level of statistical significance p=.000. Discriminative analysis, as one of the most precise statistical procedures, indicates the existence of statistically significant difference and clearly defined borders between experimental and control group of examinees, in relation to researched variables.

Table 6. The significance of differences between experimental and control group on initial and final evaluation in relation to the state of motor abilities by variables and discriminative coefficients on final evaluation

Variables	*F-i*	*p-i*	*F-f*	*p-f*	*Kd-f*
Plate tapping (EFTA)	.070	.793	15.580	.000	.434
10x5 meter shuttle run (EFAG)	.209	.650	1.223	.274	.000
A 30 meter running (EFSB)	.078	.781	1.551	.218	.101
Sit-ups for 30 s (EFLS)	.106	.746	11.983	.001	.286
Bent arm hang (EFZG)	4.755	.034	.008	.931	.000
Standing broad jump (EFSK)	.927	.340	.785	.379	.026

Legend: F-i - the value of F test on initial evaluation; p-i - the level of statistical significance; F-f - the value of F test on final evaluation; p-f - the level of statistical significance on final evaluation; Kd - discriminative coefficients on final evaluation.

By the application of invariant analysis between experimental and control group of students on initial evaluation there is a statistically significant difference only for the variable "bent arm hang" (EFZG), with a level of statistical significance p=.034. Statistically significant difference is in favour of control group.

Statistically significant difference between experimental and control group of students on final evaluation of all six variables was in plate tapping (EFTA) with a level of statistical significance p.000 and in variable "sit-ups for 30s" (EFLS) with a level of statistical significance p=.001.

The highest difference in motor characteristics between experimental and control group of students on final evaluation was determined for the following variables: plate tapping (EFTA), with discriminative coefficient of .434 and "sit-ups for 30s" (EFLS, with discriminative coefficient .286 (*Table 6*).

The effects of the treatment

Application of invariant analysis of covariance had as its aim to determine which variables had statistically significant changes because of the realized treatments. By the data analysis statistically significant difference can be seen between experimental and control treatment in plate tapping (EFTA) with a level of statistical significance p=.000, sit-ups for 30s (EFLS) with a level of statistical significance p=.000, bent arm hang (EFZG) with a level of statistical significance p=.000, and standing broad jump (EFSK), with a level of statistical significance of p=.000 (*Table 7*).

Table 7. The significance of differences between the treatment of experimental and control group in relation to the state of motor abilities on final evaluation of variables and discriminative coefficients

Anocova	*F*	*p*	*Kd*
Plate tapping EFTA (EFTA)	31.450	.000	.924
10x5 meter shuttle run EFAG (EFAG)	1.087	.302	.000
A 30 meter running EFSB (EFSB)	1.556	.218	3.214
Sit-ups for 30 s EFLS (EFLS)	43.635	.000	2.470
Bent arm hang EFZG (EFZG)	32.353	.000	2.748
Standing broad jump EFSK (EFSK)	25.944	.000	.155

Legend: F - value of F test; p - level of statistical significance, Kd - discriminative coefficients

Statistically significant differences are in favor of the effects of experimental treatment which had in preparatory part of realized physical education lessons in experimental group so called "obligatory part" whose application improved motor abilities of fourth year primary school students.

Discriminative coefficients indicate that the biggest contribution to discrimnativity between different treatments, in relation to the researched variables (i.e. that the difference is the highest) is in a 30 metre running (EFSB), with discriminative coefficient of 3.214 and bent arm hang (EFZG) with discriminative coefficient 2.748.

Table 8. Significance of differences between the treatment of students in experimental and control group on the basis of trust interval of corrected arithemtic middles in relation to the state of motor abilities on final evaluation

Groups		*Variables*	*Corrected middles*		*Trust intervals*	
Experimental	Control	EFTA (EFTA)	116.27	125.87	-12.83	-6.36
Experimental	Control	EFAG (EFAG)	205.15	322.10	-340.29	106.38
Experimental	Control	EFSB (EFSB)	53.38	54.80	-3.66	.81
Experimental	Control	EFLS (EFLS)	25.33	22.75	1.88	3.29
Experimental	Control	EFZG (EFZG)	374.54	264.67	69.56	150.18
Experimental	Control	EFSK (EFSK)	150.00	142.33	4.79	10.56

Since trust intervals for four out of six variables do not have zero, it can be stated that there is a difference between experimental and control treatment in plate tapping (EFTA), sit-ups for 30s (EFLS), bent arm hang (EFZG) and standing broad jump (EFSK). The difference is in favor of experimental treatment (*Table 8*).

It is possible to notice that the results of experimental group on final evaluation for both variables are better in relation to those of control group of students.

Conclusion

On the basis of the results of this research it can be stated that experimental treatment which was realized with students in experimental group, influenced more qualitative transformations of motor abilities, in relation to regular programme of physical education lessons which was realized in control group. Experimental lesson structure was confirmed which had prolonged preparatory part (in this work presented as "obligatory part" of a lesson). The accent was on the development of motor abilities in six variables. The results of this research confirmed significant progress in students' abilities who were in experimental group in relation to students who were in control group, for all six researched variables.

Statistically significant improvement of the results was determined in experimental group on final evaluation for two out of six researched variables, in comparison to initial evaluation. The treatment effects show statistically significant improvement of the results for four out of six variables in experimental group. By the analysis of covariance, once again the results of experimental treatment were confirmed, which consisted of prolonged time of preparatory part of physical education lesson. Statistically significant improvements of the results were not realized in a 30 meters running and 10x5 meters shuttle run. This was expected because the speed, as a motor ability, is significantly genetically predetermined. Besides, time of experimental treatment was too short to provoke statistically significant transformations in students' speed of both groups. Planned and realized contents in experimental group by their nature could not make more significant transformations of students' speed.

This research confirmed that modified structure of organized physical exercise in education activities is not only possible, but also desired, with a goal of stimulating of the development of children's motor abilities. For younger school children, at the time of their transfer from pre-school to school status, it means proper physical activities to their age and individual characteristics and actual children's need to learn by playing and to develop their potentials.

It is believed that the results of this research will be motivating for the researchers in the area of motor ability of pre-school and younger school children. Significant segment of further research could be organization of physical activities of pre-school children as a factor of their motor development in lower school years.

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