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Development of dexterity of preschool children using outdoor games

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Abstract

Purpose: The purpose of the study is to determine the impact of a specially developed program for the use of outdoor games on the level of dexterity development in preschool boys aged 5-6 years.

Methods: The research used the methods of scientific and theoretical analysis of literary sources; pedagogical testing, observation, pedagogical experiment; mathematical statistics (arithmetic mean, arithmetic mean error, Student's t-test).

Results: The average values of the experimental and control groups after the two-month experiment and the results of their mathematical processing showed that the value of the Student's t-test is higher than the value for this quantitative sample indicated in the table at $p<0.05$, the differences of which prevailed in favor of the experimental group.

Conlcusion: The proposed author's program using the means of outdoor games in which all components of dexterity were comprehensively implemented significantly influenced the development and education of dexterity with a significant difference in $p < 0.05$, which proves the effectiveness of this program. The comparative excess of results between the control and experimental groups ranged from 11.2 to 51.2% in favor of the experimental group.

Keywords: preschool children, dexterity development, outdoor games, dexterity development method, dexterity testing.

Introduction

The development of the child's motor qualities is an urgent area of scientific research at the present stage. A high level of physical fitness of a child is the key to his good health and successful learning in the future (4, 7, 8). Also, a high level of development of various types of coordination abilities already at preschool age is necessary for mastering new types of motor actions, successful adaptation to labor actions, household movements, successful teaching of children at school.

Dexterity significantly affects the nature of motor activity: the higher the level of dexterity development, the more diverse its types a person possesses. Therefore, the formation of dexterity is of great importance for improving the indicators of a person's physical condition (1, 2, 6).

Concurrently, the problem of dexterity development remains the most controversial and least developed in the theory and methodology of physical education of preschool children.

Methods

With reference to above, we have attempted to improve the method of developing dexterity in preschool children using the means of outdoor games. Play activity gives the child the opportunity to solve various motor tasks and realize their potential using the available motor experience, improving motor skills, achieving expediency, rationality and flexibility of their use. for this purpose, the right selection of outdoor games is necessary, which optimally contribute to the education of dexterity in preschool children. The method that we developed involved conducting outdoor games in which all components of dexterity were comprehensively implemented.

We used such research methods as scientific and theoretical analysis of literary sources; pedagogical testing, observations, experiments; methods of mathematical statistics (arithmetic mean, arithmetic mean error, Student's t-test).

The pedagogical experiment was organized as follows. At the first stage of the study, literary sources on this topic were studied.

Then testing was conducted with the participation of two groups of boys, one of which we identified as a control, the other as an experimental one.

Determination of the basic level of dexterity development was carried out on the basis of preschool educational institution No. 383 of Mirzo-Ulugbek district of Tashkent in March 2022. Testing was conducted at physical education classes held on the territory of a preschool educational institution.

The study of the peculiarities of the development of dexterity in physical education classes

of preschoolers in the experimental group and the control group with the use of a game program for the development of coordination abilities in the experimental group was conducted in the period from April to May 2022. The total number of subjects was 28 boys with 14 people in each group. Age – 5-6 years.

The aim of the study was to determine the impact of a specially developed program for the use of outdoor games on the level of dexterity development in preschool boys aged 5-6 years. To determine the reliability of the differences in the results, we used the Student's t-test.

In order to determine the level of dexterity development, a number of tests used in practice were applied (2, 5). Table 1 shows the results of testing of preschool subjects in the control and experimental groups before the start of the pedagogical experiment.

Table 1. The results of testing of preschool subjects in the control and experimental groups before the start of the pedagogical experiment

№	Tests	Control group		Experimental group		Difference		
		X	±σ	X	±σ	%	t	P
1	Shuttle Run 3 x 10 m., s	14,28	1,36	15,11	1,47	5,8	1,34	>0,05
2	Throwing the ball up and catching it	5,34	1,12	5,76	1,16	7,9	1,57	>0,05
3	Jumping rope, times	7,25	1,30	6,89	1,28	5,0	1,97	>0,05
4	Steeplechase, s	12,31	1,98	12,48	2,14	1,4	1,27	>0,05
5	Stepping over a gymnastic stick (5 cycles), s	11,43	1,57	11,15	1,31	2,4	1,74	>0,05
6	Static balance, s.	31,48	3,24	30,57	3,74	2,9	1,14	>0,05

Comparison of the test results of the groups for control exercises shows that there are no statistically significant differences in all tests (P>0.05). In the conducted test «Shuttle run 3 x 10 m.» the difference between the control and experimental groups was 5.8%, Student's t-test was 1.34. The test «Throwing the ball up and catching it» showed a difference of 7.9% and Student's t-test was 1.57. «Jumping rope» revealed differences of 5.0%, Student's t-test was 1.97. The difference between the results of the control and experimental groups in the «Steeplechase» test was 1.4%, the differences according to Student's t-test were 1.27. The results of the following tests «Stepping over a gymnastic stick (5 cycles)» and «Static balance» showed differences of 2.4 and 2.9%, respectively, and according to Student's t-test– 1.74 and 1.14, respectively.

Therefore, we can say that in these two groups, the physical quality of dexterity is almost equally developed and these groups are suitable for the experiment we are planning.

For two months, the training with the participants of the experimental group was carried out according to the program we proposed using the means of outdoor games in which all the components of dexterity were comprehensively implemented. Physical education classes of the control group were held using a traditional program designed for preschool educational institutions.

Results and discussion

At the end of the two-month pedagogical experiment, the participants of the control and experimental groups were subjected to routine testing according to the tests that were applied at the beginning of the experiment. The results of testing the participants of the experiment of the control and experimental groups after the pedagogical experiment are shown in Table 2.

According to the test results of the «shuttle run 3 x 10 m.», the subjects of the control group on average ran for 13.71 ± 1.58 s., and the subjects of the experimental group for 12.06 ± 1.33 s. The difference was 12.0%. In the test «Throwing the ball and catching it», the difference in the results of the studied groups over two months of preparation was 49.5% in favor of the experimental group (9.61 ± 1.58 times). Differences in the «Jumping Rope» test, the experimental group also showed significant results (12.38±1.28 times) than the control group (8.19 ±1.15 times), the difference is 51.2%. The percentage of difference in

Table 2. The results of testing of preschool subjects in the control and experimental groups before the start of the pedagogical experiment

№	Tests	Control group		Experimental group		Difference		
		X	±σ	X	±σ	%	t	P
1	Shuttle Run 3 x 10 m., s	13,71	1,58	12,06	1,33	12,0	2,43	<0,05
2	Throwing the ball up and catching it	6,43	1,24	9,61	1,58	49,5	2,76	<0,05
3	Jumping rope, times	8,19	1,15	12,38	1,28	51,2	2,27	<0,05
4	Steeplechase, s	12,10	1,67	10,13	1,53	16,3	2,71	<0,05
5	Stepping over a gymnastic stick (5 cycles), s	11,34	1,18	10,07	1,44	11,2	2,45	<0,05
6	Static balance, s.	33,81	3,55	40,19	4,09	18,9	2,59	<0,05

«Steeplechase» between the control and experimental groups was 16.3%, where the experimental group with a result of 10.13 ± 1.53 s. exceeded the results of the control group (12.10 ± 1.67 s.). The speed in the test of «Stepping over a gymnastic stick (5 cycles)» in the participants of the experimental group was 10.07 ± 1.44 s., which is 11.2% faster than the results of the subjects of the control group (11.34 ± 1.18 s.). The retention time of «static balance» was sustained by the subjects of the experimental group (40.19 ±4.09 s.) by 18.9% more than participants of the control group (33.81 ± 3.55 sec.). The average group values of the experimental and control groups after the experiment and the results of their mathematical processing show that the value of Student's t-test is higher than the tabular value for this quantitative sample (tabular value = 2.18): «Shuttle run 3 x 10 m.» $t = 2.43$ at $p<0.05$; «Throwing the ball up and catching it» $t = 2.76$ at $p<0.05$; «Jumping rope» $t = 2.27$ at $p<0.05$, « Steeplechase» $t = 2.71$ at $p<0.05$, «Stepping over gymnastic stick (5 cycles)» $t = 2.45$ at $p <0.05$ and «Static balance» $t = 2.59$ at $p < 0.05$ - these results prove the effectiveness of our program of games and game tasks for the development of dexterity of preschoolers.

Conclusion

Thus, based on the above, it can be concluded that the presented method of dexterity development with the use of outdoor games contributed to a significant enrichment of the motor experience of boys aged five to six years, improved results in tests to determine the level of dexterity development. On their basis, the indicators of static balance and the level of dexterity development were brought up more effectively and increased.

The proposed author's program using the means of outdoor games in which all the components of dexterity were comprehensively implemented significantly influenced the development and education of dexterity with a significant difference at $p <0.05$, which proves the effectiveness of this program. The comparative excess of results between the control and experimental groups ranged from 11.2 to 51.2% in favor of the experimental group.

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