



Development of Coordination Abilities with Use of Classic's Exercises

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ABSTRACT

Background: If you add the basic program of physical culture in the school with new physical exercise, the effectiveness of lessons for younger school children in physical culture will increase. **Aim of the study:** Development, testing, and study of the influence of the exercise «Classic's» on the indicators of coordination abilities. **Subjects and methods:** The study lasted 9 months. 50 children attended it. Boys and girls 8-9 years old, who study in the second grade in a regular school engaged in physical education 2 times a week for 40 minutes. The study used tests Shuttle run 3×10 m and Jumping rope. Analysis of the results was performed using the software bio-stat 2009 and Microsoft excel 2016. The parametric criterion (*t*-student) was used, the result was considered reliable at $p > 0.05$. **Results:** Before the study, the difference between the tests in the EG and the CG was not significant. After the end of the pedagogical experiment, the results changed in both groups. In CG in the test Shuttle run indicators improved from 10.1 ± 0.9 sec to 9.7 ± 0.5 sec ($p < 0.05$). In the test, jumping rope performance also improved, but only by 4.7%. In the EG, in which children in the classroom additionally performed the exercise «Classic's», indicators have improved significantly in both tests. In the Shuttle run test, the values improved from 10.5 ± 0.8 sec to 8.5 ± 0.5 sec ($p < 0.05$). In the test, jumping rope performance also improved significantly by 16.1%. Such results may indicate the effectiveness of the proposed physical exercise and its use in physical education classes at school. **Conclusion and recommendations:** If you use the exercise «Classic's» in physical education classes at school, the indicators of coordination abilities will improve and school children will increase their interest in physical education.

Keywords: Coordination abilities, School children, Physical culture, Physical exercise, Lesson

INTRODUCTION

In general education schools in Russia, today provide a program of two lessons in physical education per week. A standard program allows you to comprehensively and harmoniously develop children physically and teach them new motor actions. One of the problems in schools is the lack of space for a physical education lesson. In most ordinary schools in Russia, there is only one gym. Gyms are usually small and do not allow you to fully realize the abilities of the body engaged in children. Usually, after the teacher has explained and shown the exercise, children begin to try it or improve, if it studied before. As a rule, if one school children perform the physical exercise, the rest have to wait for their turn. The motor density of this class drops sharply and as a result, the school children do not receive sufficient physical development in the lesson of physical culture. Despite the fact, the main purpose of the lesson of physical culture is the development of the body. How to fill such pauses? How to increase interest in the classes of schoolchildren, to enable them to move more? At the same time, if possible, to avoid injuries, use a minimum of equipment and sports equipment. Need an exercise that is not difficult, but interesting for the child and developing at the same time. In our opinion, such exercise is «Classic's».

In many regions of the world today, the problem of physical education of children is studied. Of course, physical exercises and physical culture, in general, have a positive impact on the intellectual abilities of schoolchildren, their academic performance; increase their mental and physical performance [1-3]. Actively conducted research on the development of physical qualities of school children, school-age athletes. The authors investigate the influence of some abilities on others in different people [4-6]. Among the diversity of studies are those that emphasize the importance of the development of such quality as agility. Dexterity, in other words-coordination ability, is the foundation for the development of technical skills in sports, it is necessary for life and everyday life.

Despite the sufficient study of the issue of coordination abilities, this topic is very relevant not only in Russia but also in other countries [7-9]. A favorable period for the development of coordination abilities is the primary school age. Most authors recommend paying special attention to the development of coordination abilities in comparison with other physical qualities at this age [9-12]. Thus, there is a contradiction between the need to develop the coordination abilities of younger school children and the ability to realize the potential of the physical abilities of children in physical education classes at school.

The hypothesis of the study is the assumption that if the lessons of physical education in school to perform the exercise «Classic's», the children 8-9 years will improve the performance of coordination abilities, they will increase the desire to attend physical education classes, increase the density of physical education classes in general.

The aim of the study was to develop and test, as well as to study the impact of the exercise «Classic's» on the indicators of coordination abilities.

SUBJECTS AND METHODS

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

The study lasted from September to May (9 months). 50 children attended it. These are boys and girls 8-9 years old, who study in the second grade at the regular school №60 in Kirov, Russia. All the children were completely healthy and are admitted for practical training in physical culture in school. Physical education lessons were two times a week for 40 minutes each session.

First Before the beginning of the pedagogical experiment, conditionally, 2 groups were formed: The Control group (CG) and the Experimental group (EG). CG children of 2A class of 25 people. During the school year, they were engaged in a standard program for ordinary schools [13]. EG children of a 2B class of 25 people. During the school year, they were also engaged in the standard program, but at the same time, at each lesson in physical culture, if possible, they performed the exercise «Classic's» (Table 1).

Table 1 Exercise «Classic's».

8	2	5		3	2	5		2	4	8
7	9	3		9	4	8		6	9	5
1	4	6		7	1	6		3	7	1
Square 1				Square 2				Square 3		

On the floor, there are 3 large squares. The side of each square is 180 cm. Inside a large square, there are 9 identical squares with a side of 60 cm. These squares have numbers from 1 to 9. The location of the numbers in the square is arbitrary. Before each class numbers in the squares were varied.

Task: With a jump, one foot or two the school children must land on a square with a digit from 1 to 2, 2 to 3 and so on until square number 9. After that, the school children jump in the reverse sequence from 9 to 8, from 8 to 7 and so on to No. 1.

Result: During the lesson, each schoolchild, preferably, must overcome all 3 large squares in a direct and reverse sequence. You can enter any square at any time. The time of the exercise is limited only by the duration of the lesson. Large squares differ from each other in that the numbers in them are arranging in a different order. The school children can continue physical education at any time. If during the exercise the school children make a mistake, he returns to the previous square and continues to perform the task.

It was possible to perform the exercise «Classic's» during the lesson: after the construction, during the run or in all the pauses that arose during the lesson. Before the beginning of the pedagogical experiment, all children passed two control tests, which show the level of development of coordination abilities.

1) Jumping rope. The result is the number of jumps in 60 seconds

2) Shuttle runs 3 × 10 meters, on the floor at a distance of 10 m from each other drawn 2 lines. The school children

run from the start line to the finish line touch lines hand. Then he returns to the starting line and touches it again with his hand. Then he overcomes the last 10 meters towards the finish, the result the time in which the school children overcame the distance [13]

Biostat 2009 and Microsoft excel 2016 were the main programs for mathematical and statistical processing of results. The parametric criterion (t-student) was used, the result was considered reliable at $p > 0.05$ [14,15].

RESULTS

Prior to the beginning of the pedagogical experiment and after its completion, all the children of the CG and the EG class handed control tests (Table 2).

Table 2 Indicators of coordination abilities of school children 8-9 years

Test	CG				EG			
	Before	After	%	p-value	Before	After	%	p-value
Shuttle run 3 × 10 m (sec)	10.1 ± 0.9	9.7 ± 0.5	3.9%	p<0.05	10.5 ± 0.8	8.5 ± 0.5	19.1%	p<0.05
Jumping rope (the number of jumps)	55.6 ± 6.7	58.2 ± 7.2	4.7%	p<0.05	59.2 ± 8.0	69.1 ± 5.2	16.1%	p<0.05

From Table 2 it is seen that before the study the difference between the tests in the EG and the CG was insignificant. After the end of the pedagogical experiment, the results changed in both groups. In the CG, in which children were engaged in a standard program for physical education in school, there were improvements in both tests, but they were not significant. In the Shuttle run test, the values improved from 10.1 ± 0.9 sec to 9.7 ± 0.5 sec ($p < 0.05$). In the test, jumping rope performance also improved, but only by 4.7%. Such results can speak about some efficiency of the actual program on physical culture in Russia.

In the EG, in which children in the classroom additionally performed the exercise «Classic's», indicators have improved significantly in both tests. In the Shuttle run test, the values improved from 10.5 ± 0.8 sec to 8.5 ± 0.5 sec ($p < 0.05$). In the test, jumping rope performance also improved significantly by 16.1%. These results suggest that the proposed exercise «Classic's» has a significant positive impact on the development of the coordination abilities of younger schoolchildren.

DISCUSSION

It is necessary to develop children's abilities from birth. Increasing the level of their physical and intellectual abilities. Most centrally, this occurs in schools in physical education classes. It is also known about the benefits of exercise for the development of mental and cognitive processes [1-3,16,17].

Despite the sufficient study of the issue of development of coordination abilities, the topic is relevant today. The role of coordination abilities for children, especially in sports, is known enough, but it should be noted that most of the techniques offered by the authors are additional or those that replace the main programs. Cillik and Willweber, talk about the effectiveness of the impact of the exercise program on the level of coordination in children aged 6 to 7 years, in which coordination of movements is important in the development of other skills. Issurin and Lyakh, give a detailed description of coordination abilities and give them a primary role in the technical training of athletes. Dallolio, et al., talk about the need to increase physical activity of schoolchildren, actively develop coordination abilities that have a beneficial effect on the health and physical shape of school children [7, 9,18,19].

At school it is quite difficult to change the program of physical culture, as it covers all the spectra of the comprehensive harmonious development of children, promotes the development of physical qualities, mental processes, the formation of discipline in the classroom, children learn new movements and exercises and much more [13].

The results of the study show the effectiveness of the use of the standard program of physical culture in school, at the same time, we can affirmatively say that the exercise «Classic's» without problems can be a Supplement to the standard program. If you perform the exercise «Classic's» during the lesson on physical culture, the indicators of coordination abilities will improve, this is evident from the results of the study. Objectively, we can note the fact that an unusual exercise is of interest to children, they perform it with great desire. While children in CG without the desire was expecting the run queue of the next exercise, the children of the EG at this time took up positions in

squares and doing the jumps. Of course, without the creative thought of the teacher, it is difficult to keep the high motor density of the training session. He must make sure that the children in the classroom for physical education moved as much as possible because this is the main goal of the lesson. The results of the study in the EG showed that, performing the exercise «Classic's» increases the motor density of the lesson, as indicators of their coordination abilities have improved significantly in both tests. School children instead of standing in line while doing the next exercise can perform the exercise «Classic's» and then try out a new movement, which is studied in the classroom. When performing the exercise, there is also a competitive aspect, when the people are trying to perform the exercise at a speed, one faster than the other does. The effectiveness of the use of games and competitive methods in physical education lessons at this age is very high [20].

The hypothesis put forward at the beginning of the study completely solved by using the exercise «Classic's».

It is important that the uniqueness of this exercise «Classic's» is that it does not require special equipment, a separate large place or a long time. Exercise is not difficult to explain and perform.

It is also important that the exercise «Classic's» use a differentiated approach to schoolchildren. This approach is effective and there is no doubt. This approach allows identifying and developing the makings and abilities of children. Indicators of physical development of schoolchildren, their physical fitness are growing, the functional state of the organism is improving, and the density of classes is increasing [21-23]. Exercise «Classic's» is performed individually, at any pace, in any sequence and at any time during the lesson on physical culture, that is, an additional load is chosen for himself by the schoolchildren.

CONCLUSION AND RECOMMENDATIONS

At each lesson on the physical culture at school, it is recommended to use exercise «Classic's». This exercise does not distract from the program of physical culture, from the lesson. It is additional in terms of load for younger school children. It also improves the performance of coordination abilities, increases the motor density of classes and interest in physical education in school. The study is promising in terms of studying new relationships of coordination abilities and the effectiveness of the use of the exercise «Classic's».

DECLARATIONS

Conflicts of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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