



## The Effect of the Standard Classics Exercise to React Quickly in Children Aged 8-9 Years.

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**Abstract:** The problem of developing children's coordination abilities is relevant and can be solved by using Classical exercises in physical education lessons at school. The study aimed to determine the standard classic exercise's effect on reacting quickly in children aged 8-9. The children in the control group were engaged in the usual school physical education program, and the children from the experimental group additionally performed a traditional exercise classic. All children were engaged in physical education for 40 minutes, 2 times a week; 72 physical education lessons were conducted in each class during the study period. The test "Touch the ball" determined the ability to react quickly. The Student's T-criterion was used in statistical processing. After the end of the pedagogical experiment, the indicators of children in the control group improved by 3.1% ( $p>0.05$ ); the positive dynamics can be explained by a natural increase in coordination abilities at the age of 8-9 years and the effectiveness of using the standard physical education program in Russian schools. The indicators of children in the experimental group improved by 9.3% ( $p<0.05$ ). Such results can be explained by the effectiveness of using exercise standard classics in physical education lessons at school. The indicators of reacting quickly will significantly improve if children aged 8-9 also perform standard exercise classics during physical education lessons at school.

**Keywords:** School children; Physical education; Motor abilities, Exercise, Health.

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## I. INTRODUCTION

The attitude to the comprehensive development of personality presupposes the mastery of the basics of physical culture by schoolchildren, the components of which are: good health, good physical development, the optimal level of motor abilities, knowledge in the field of physical culture, motives and mastered ways (skills) to carry out physical culture and sports activities.<sup>1,2</sup> The subject of physical education in primary school is the motor system of a person with a general developmental orientation. In mastering this activity, health is strengthened, physical qualities are improved, certain motor actions are mastered, and thinking, creativity, and independence are actively developing. The academic subject "Physical Culture" is designed to form students' stable motives and needs for a careful attitude to their health and physical fitness, holistic development of physical and mental qualities, and creative use of physical culture to organize a healthy lifestyle. In mastering the educational material of this field, the formation of a holistic view of the unity of the biological, mental, and social in a person, the laws and patterns of development, and the improvement of his psychophysical nature are ensured. Today, the teacher is facing a set of new tasks that were not explicitly set before him. These are tasks such as educating the value orientations of a younger teenager for physical and spiritual improvement, the formation of needs and effective motives for physical exercises and the use of other means of a healthy lifestyle, the education of moral and volitional qualities, the formation of humanistic relationships and the acquisition of communication experience between children, children, and teachers.<sup>3,4</sup> Among the new tasks facing the teacher of physical culture today is the orientation of children to independent physical exercises, their use for recreation, leisure, and self-improvement, and mastering the ability to carry out physical culture and sports activities. The successful construction of the educational process in physical culture is possible if the teacher not only clearly understands the modern goals and objectives of physical education but also carries out his activities based on such principles as personal and activity approaches, humanization, and democratization of the educational process, the application in practice of modern psychological, pedagogical and psychological – physiological theories of education, upbringing, and personal development.<sup>1,3,4</sup> Despite the great importance of physical education for a person, several problems exist in physical education at school. One of these problems is the lack or absence of gyms or other facilities for physical education lessons. During the school year, severe weather conditions in Russia do not allow students to exercise outside constantly. One of the solutions to this problem may be the development and implementation of innovative methods and techniques in working with children in physical education classes at school. Using such equipment or a set of exercises is necessary to help develop physical abilities and not take up much space. The world-famous exercise is the standard classics. Children play them not only at school but also in courtyards. At the same time, a playful and competitive approach must be used in the classroom at school, which has proven its effectiveness in working with primary school children.<sup>5</sup> The sensitive period of the development of physical abilities is crucial in developing physical qualities. That is, it is necessary to develop those abilities purposefully and at the time when it is most relevant. For example, some authors suggest that primary school age is a favorable period for developing motor abilities.<sup>6</sup>

A good level of development of motor abilities is the basis for other physical qualities. To date, there are quite a lot of motor abilities, and there are several classifications.<sup>7,8</sup> One of the most important for children aged 8-9 years is the ability to balance in dynamic and static conditions.<sup>9,10</sup> Factors that determine the manifestation of coordination abilities: 1. The ability of a person to do a precise analysis of movements 2. The activity of the analyzers (especially the motor) 3. The complexity of the motor task 4. Level of development of other physical qualities 5. The level of General preparedness working (volume school movements) 6. Depends on the age. 7. Courage and determination.<sup>11-13</sup> A literature review showed that no studies had been found that would determine the influence of standard classics on schoolchildren's physical and mental performance. Therefore, the study aimed to determine the effect of the standard classics exercise on reacting quickly in children aged 8-9 years.

## 2. MATERIALS AND METHODS

### 2.1. Participants

The pedagogical experiment was attended by elementary school children aged 8-9 years. The students studied in the 2nd grade of the ordinary school number 60 in the Russian Federation. Out of the total number of schoolchildren (118 children), 104 students took part in the study. The doctor admitted these children to physical education lessons at school and had no contraindications for health. At the same time, consent to the study was obtained from each parent (56 girls and 48 boys).

### 2.2. Ethical Statement

The Council of Vyatka State University approved the study №1 Jan 17, 2020. All procedures conformed to the ethical standards of the Helsinki Declaration of 2013. Furthermore, written informed consent was received from the participants from parents to ensure the anonymity of the participants, to store data, conduct and publish the study.

### 2.3. Inclusion criteria

Children who are engaged in physical education at school. Students who a doctor admits to physical education classes. The study involved ninth-grade students of secondary school No. 60 (Kirov, Russia) aged 8-9 years.

### 2.4. Exclusion criteria

Children with health problems do not have a basic medical group for physical education classes. Children who are not allowed to exercise by a doctor. Schoolchildren who have deviations in health status. Parents of children who do not wish to give informed consent.

### 2.5. Research procedure

It was a cross-sectional study. The pedagogical experiment was conducted from September 1 to May 30, 2021. Students were engaged in physical education 2 times a week for 40 minutes at each lesson. During the 9 months of the study, 72 lessons were conducted. Children from the control group (classes 2A and 2B) – 30 girls and 22 boys were engaged in the standard school program in physical culture.<sup>5</sup> In physical

education, there are two specific sides or parts: the training of movements (motor actions) and the education of physical qualities (abilities). The essence of the education of physical qualities is to manage their development. The immediate object and, simultaneously, the controlling factor is the process of motor activity. Physical education forms a system of value orientations of a person for a healthy lifestyle and provides motivational, functional, and motor readiness for it. General and specific laws, principles, and rules of the pedagogical process carry it out. It affects a person's intellectual, mental, moral, purposeful, and other qualities. The general purpose of teaching the subject "Physical Culture" in primary school is the formation of the physical culture of the student's personality by mastering the basics of the content of physical activity with a general developmental orientation. The "Physical culture" course in primary school implements cognitive and sociocultural goals.

1. The cognitive goal involves forming students' ideas about physical culture as a component of a holistic scientific picture of the world and familiarizing students with the basic provisions of the science of physical culture.
2. The socio-cultural goal implies the formation of children's competence in performing basic motor actions as an indicator of human physical culture.

By the purpose of the educational subject "Physical Culture," the tasks of the educational subject are formulated:

1. Formation of knowledge about physical culture activity, reflecting its cultural-historical, psychological-pedagogical, and medical-biological foundations;
2. Improving skills in basic motor actions, their variable use in play activities and independent training sessions;
3. Expansion of motor experience by complicating previously mastered movements and mastering new motor actions with increased coordination complexity;
4. Formation of skills and abilities in performing physical exercises of various pedagogical orientations related to health prevention, physique correction, correct posture, and movement culture;
5. Expanding the functional capabilities of different body systems, increasing their adaptive properties due to the directed development of basic physical qualities and abilities;
6. Formation of practical skills necessary to organize independent physical exercises in their recreational and recreational forms, group interaction, outdoor games, and elements of competition.

To achieve the planned results and achieve the set goals, the following practical tasks are being solved:

The material of the program is aimed at the implementation of the priority tasks of education – the formation of a comprehensive harmoniously developed personality; the realization of students' creative abilities, their physical improvement, the development of basic motor (physical) vital qualities; the formation of a scientifically grounded attitude to the world around students. Through the program, the educational process in the field of physical culture in primary school should be oriented:

1. To develop basic physical qualities and increase the functional capabilities of the body;
2. To enrich the motor experience with physical exercises with a general developmental and corrective orientation, technical actions of basic sports;
3. To master knowledge about physical culture;
4. To teach skills and abilities in physical culture and health and sports activities, an independent organization of physical exercises.

Physical education at school aims to promote the formation of a fully developed personality in physical improvement.

The achievement of this goal is ensured by solving related tasks aimed at:

- health promotion, promotion of normal physical development;
- training in vital skills and abilities;
- development of motor (conditioning and coordination) abilities;
- acquisition of necessary knowledge in the field of physical culture and sports;
- education of the need and skills to engage in physical exercises independently, consciously apply them for recreation, training, improving performance, and strengthening health;
- promoting the education of moral and volitional qualities, mental processes, and personality traits.

Children from the experimental group (2B and 2G) – 26 girls and 26 boys were engaged in the same program. Additionally, they performed the traditional exercise classics for 5-6 minutes during the lesson (Figure 1).

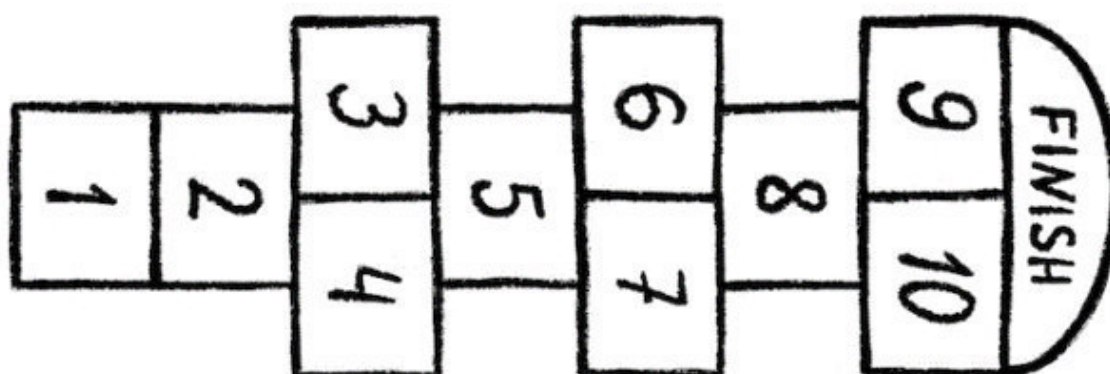


Fig 1. Standard classical exercises

Fig 1 shows the Standard Classical Exercise; in the school concert hall, you need to draw several drawings with simple chalk. The main requirements are jumping and alternating exercises of the right and left legs. After the first student performed jumps on the right leg, he returned to the starting position and performed jumps on the left leg. For 5-6 minutes, there were 5-6 students in each drawing (no more), so the motor load on each student was maximum. The control test "Touch the ball" determined the development level of the ability to react quickly. This test was chosen because it is often used in pedagogical research on physical culture and has high validity. Two gymnastic benches are attached with one side to the gymnastic ladder at the height of 1.5 m from the floor at a distance of 5 cm from each other. The benches are marked with a 5 cm marking. A volleyball ball is installed on top. The child is standing with his back to the benches at a distance of 4 meters. At the teacher's signal, the ball is lowered down the bench from top

to bottom. The child should quickly turn around, run up to the gym benches and touch the ball with his hand. The result is obtained with an accuracy of 5 cm.<sup>5</sup>

### 3. STATISTICAL ANALYSIS

All the indicators of the children who participated in the study were entered into an Excel-2016 spreadsheet, the arithmetic mean and standard completion were determined, and the Student's T-criterion was also used, with a significance level of  $p < 0.05$ .

### 4. RESULTS

Before the study, no significant statistical differences existed between the control and experimental groups ( $p > 0.05$ ). Table 1 shows the results of the standards at the beginning and the end of the study.

<b>Table 1. Results of the "Touch the ball" test at the beginning and the end of the study</b>				
<b>Indicators</b>	<b>Before</b>	<b>After</b>	<b>%</b>	<b>p</b>
Control group (n=52)	269.3±7.0	260.9±9.0	3.1	$p > 0.05$
The experimental group (n=52)	271.3±6.1	246.0±6.8	9.3	$p < 0.05$

Table 1 shows that children from the control group who studied according to the standard program improved their performance from 269.3±7.0 to 260.9±9.0 by 3.1%. Despite the positive dynamics of the results, the reliability of the results was insignificant ( $p > 0.05$ ). In the experimental group, children who additionally performed exercises on the Standard classical exercises during physical education lessons improved their indicators from 271.3±6.1 to 246.0±6.8 by

9.3% ( $p < 0.05$ ). It should be noted that in our previous studies, one of the variants of physical exercise Classics has proven its effectiveness.<sup>25</sup> Children who performed exercises in the Classics exercise (Table 2) improved their performance in the ability to combine movements significantly. It once again confirms the relevance of the problem and the ways to solve it using Classical exercises.

<b>Table 2. Exercise «Classics»</b>								
8	6	2	3	6	5	9	6	3
5	3	7	2	8	7	1	7	8
9	4	1	9	1	4	2	5	4
Square 1			Square 2			Square 3		

Table 2 shows that the exercises of the Classics are similar to each other, and the essence of performing this exercise is not only jump but also the ability to react quickly, combine your movements and react quickly.

### 5. DISCUSSION

The topic of children's health and physical development is always relevant and important. Great importance is given to the physical activity of each child at school; physical education teachers do this. It is important to note that they greatly contribute to solving the general problem of obesity, a sedentary lifestyle, and other diseases.<sup>1-4</sup> Teachers in schools work according to the standard physical education program; it is quite versatile and has a lot of advantages in working with children of different ages. The program displays a set of exercises and a period in which certain physical qualities should be developed. It is a sensitive (favorable) period for developing physical qualities. Suppose you purposefully develop certain abilities during the sensitive period. In that case, the increase in indicators will be higher, and if you skip this period, it will be impossible to catch up or get the maximum result.<sup>6</sup> Separately, it should be noted the relevance of the topic of health of schoolchildren, their lack of physical activity, the problem the authors propose solving through physical exercises, and physical education lessons at school.<sup>15-17</sup> At the same time, the authors note the benefits of physical education lessons for the development of physical

qualities and indicators of cognitive abilities.<sup>18-20</sup> It should be noted that some authors<sup>21,22</sup> offer ready-made methods that could replace the standard program for schoolchildren,<sup>23,24</sup> however, such an approach seems too extraordinary for us, in our opinion, it will only be enough to correct or supplement a sufficiently meaningful physical culture program, children from the control group have proved its effectiveness. The results of our study on children in the control group showed that the regular physical education program is composed quite well. The children improved their performance, albeit slightly. It may indicate a favorable period of development of motor abilities at 8-9 years and their natural growth during the study period. The results in the experimental group showed a significant improvement in motor abilities, as a purposeful influence on these abilities helped to increase the final result. It took only 5-6 minutes of the total duration of the lesson. It is also important that standard classics do not require expensive equipment; such a sign can be drawn with chalk on asphalt or with sticky tape in the gym. Children will be happy to perform physical exercise. At the same time, an individual-differentiated approach is used, that is, each child chooses for himself the speed of performing physical exercise, focusing on his condition and

well-being.<sup>12,13,14</sup> Thus, the effectiveness of using the standard physical education program at school has been confirmed, and a sensitive period for developing motor abilities has been proved. For the first time, the introduction of standard classics into the pedagogical process of physical culture at school for the development of motor abilities of children aged 8-9 years has been scientifically proven. The study is promising since it is possible to study the influence of standard classics on other motor abilities and physical qualities. Our previous study studied the effect of Classical exercises on the coordination ability to combine movements.<sup>11</sup> The proposed addition to the standard program in the form of a set of Classical exercises and Standard Classics for the development of coordination abilities show a significant effect in primary school age. The topic is relevant and promising for further research, so, for example, it is possible to study the influence of coordination exercises on some mental processes. The topic of children's health is relevant since more schoolchildren lack motor activity.<sup>26,27,28</sup> The low level of development of physical qualities<sup>29,30</sup>, as well as coordination abilities<sup>31,32</sup>, catalyzes the formation of new ideas for improving the standard physical education program at school.

## 6. CONCLUSION

During the study period, the literature on the topic of children's health and the benefits of physical culture for the development of schoolchildren was studied. As a result, the effectiveness of the traditional classics in physical education

lessons in working with young schoolchildren has been proven and confirmed. Therefore, using the familiar classics in each lesson for 5-6 minutes is recommended.

## 7. RECOMMENDATIONS

Conducting a physical education lesson at school follows certain principles and depends not only on educational standards but also on the age and physical condition of the students. For younger schoolchildren, the usual running, jumping, climbing, somersaults, and projectile throwing are characteristic. As a rule, 2-3 tasks are solved during the lesson. First, it is important to form a posture—mandatory use of outdoor games. Forming the right school and culture of movements from childhood is necessary. As a rule, static or heavy loads are not used to hold your breath. Finally, it is necessary to form a stable desire for self-development to lay the foundations of the technique of most motor actions.

## 8. AUTHORS CONTRIBUTION STATEMENT

Georgia Polevoy - conceptualization, methodology, writing-original draft preparation, Performing mathematical and statistical calculations. The author has read and agreed to the published version of the manuscript.

## 9. CONFLICT OF INTEREST

Conflict of interest declared none.

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