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ORIGINAL ARTICLE

The Influence of Outdoor Games on the Development of Physical Qualities in Children 7-8 Years Old in Physical Education Lessons

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ABSTRACT

Background. The problem of insufficient motor activity in schoolchildren can be solved at physical education lessons at school by using outdoor games. **Objectives.** to study the influence of outdoor games on the indicators of physical fitness of primary school children in physical education classes at school. **Methods.** The pedagogical experiment was conducted based on secondary school 14 in Kirov, Russia. The study involved school children who entered the first grade, 7-8 years old. Physical education classes in the control group were conducted under the requirements of the general school curriculum. The children from the experimental group also fulfilled the aim and the tasks of the general education program, but they played outdoor games for 9-10 minutes during the lesson. **Results.** Despite the improvement in the indicators in the control group, there was no significant increase from the beginning to the end of the study. In the experimental group, from the beginning to the end of the study, a significant increase in indicators for all tests was revealed: "Running for 30 meters" improvement by 18.2% (p=0.02); "Pull-up from the lying vis" improvement by 40.2% (p=0.01); "Shuttle run 3x10 m" improvement by 10.3% (p=0.02); "Tilt forward" improvement by 43.2% (p=0.01). **Conclusion.** The results of the pedagogical experiment showed that the use of outdoor games in physical education lessons at school with children who study in the first grade has a positive and significant impact on the development of the physical qualities of children 7-8 years old.

KEYWORDS: ***Physical Abilities, Physical Education, Favorable Periods, Health, Physical Inactivity.***

INTRODUCTION

The problem of insufficient physical activity has been discussed for quite a long time and various measures are proposed to combat it. It should be recalled that physical inactivity leads to some problems, such as increasing fatigue, rapid fatigue, decreased performance, sleep disorders, increased causeless nervousness requiring jamming, regular headaches of varying intensity, increased risk of fractures, weight gain, shortness of breath with little physical exertion, back pain (1).

Modernization of physical education in general education directly relates to the preservation and strengthening of children's health, which is one of the priorities in the activities of educational institutions. The education system has a specific task, to create such conditions for learning at school

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so that the child is comfortable psychologically and physically (2).

At the same time, active recreation is important, which implies a passion for various types of physical activity, whether it's playing sports, swimming or just jogging in the nearest park or square. The essence of active recreation is to increase the motor activity of a person, which allows you to ensure normal physiological processes in the body and maintain muscle tone. As a result of motor activity, all systems of human organs maintain their working capacity, which is the key to good health and a cheerful mood (3).

For the education of primary school children to be more successful, it is necessary to interest them in this activity. Due to the current situation, children often do not make up for the lack of motor activity, which leads to inactivity and other negative consequences. There is a need to find the most appropriate means and methods to improve the physical fitness of students (4-6).

Among a large number of various means of physical education, outdoor games are widely used, which assist in solving health problems. Outdoor games greatly contribute to the education of physical qualities (4-6): speed, agility, strength, endurance, flexibility, and, importantly, these physical qualities develop in a complex. Games and exercises are the best "medicine" for children from motor hunger – inactivity since children spend most of their time in a static sitting position. Students are given space for creative solutions to motor tasks, a sudden change in the situation during the game obliges them to solve these tasks in the shortest possible time and with full mobilization of motor abilities. The competitive nature of collective outdoor games can also activate the actions of players, and cause a manifestation of determination, courage, and perseverance to achieve the aim (4-8).

In the system of physical education, the game is used to solve educational, health, and educational tasks. Tasks need to be solved in a complex, only in this case, each mobile game will be an effective means of versatile physical education for students (2, 5, 8, 9).

Primary school age is the most favorable for the formation of almost all physical qualities and coordination abilities in children, realized in motor activity (10-12).

The anatomical and physiological features of a younger student and the level of his physical development should be taken into account when organizing pedagogical work in primary classes. At the age of 7-11, the child physically develops relatively calmly and evenly. The increase in height and weight, endurance, and vital capacity of the lungs is fairly uniform and proportional. According to most development indicators, there is no big difference between boys and girls of primary school age, and up to 11-12 years of age, the body proportions of boys and girls are almost the same (10, 13, 14).

The analysis of the literature showed a negative attitude of schoolchildren toward physical education and a high level of physical inactivity in primary school age (15, 16). Therefore, there was a need to supplement the physical education lesson with outdoor games that would attract the attention of schoolchildren and have a positive effect on the children's bodies.

The aim of the study: to study the influence of outdoor games on the indicators of physical fitness of primary school children in physical education classes at school.

Tasks:

1. To analyze the state of the issue according to literary sources;
2. Choose outdoor games that can be aimed at developing the physical qualities of younger students;
3. To experimentally substantiate the effectiveness of the influence of selected outdoor games on the development of the physical qualities of children 7-8 years old in physical education lessons at school.

Working hypothesis: it is assumed that the selected outdoor games will increase the level of development of physical qualities in 1st-grade children in physical education classes at school.

MATERIALS AND METHODS

Study procedure. The pedagogical experiment was conducted based on the municipal autonomous educational institution "Secondary School No. 14" in Kirov, Russia. The study involved schoolchildren who entered the first grade. The age of children is 7-8 years old. The study was conducted during the academic year from September 15, 2022, to May 15, 2023. In total, 58 schoolchildren took part in the experiment, which was divided into 2 groups: a control group (29 children from class 1a) and an experimental group (29 children from class 1b). Children in both groups were engaged in physical education 3 times a week according to the school schedule for 40 minutes each lesson. All the children were

healthy and admitted by the doctor to physical education lessons at school. Informed consent was received from the parents for the child's participation in the pedagogical experiment.

Physical education classes in the control group were conducted under the requirements of the general school curriculum.

Children from the experimental group also fulfilled the goals and objectives of the general education program, but during 9-10 minutes of the lesson they played outdoor games.

From a wide variety of well-known outdoor games (17, 18), those games that corresponded to the tasks of a particular lesson were selected and upgraded. This implies the use of the game method in the physical education lesson in the experimental group, while in the control group, the method of continuous exercise (repeated method) was used more often.

1. For the development of speed and speed-strength qualities (physical exercises with accelerations, sudden stops, rapid jerks, instant delays, running short distances):

"Relay race with turns", "Empty space", "Sentries and scouts".

2. For the development of dexterity and speed, which require the manifestation of precise coordination of movements and rapid coordination of their actions with teammates, the possession of a certain physical dexterity: "Precise turn", "number two is superfluous". "If legs became hands".

3. For the development of flexibility and dexterity: "Tunnel of hoops", "Forbidden movement", "Crucian carp and pike".

4. For the development of the eye and the accuracy of movements: "Mobile target", "Sparrows and a cat".

5. For the development of speed and strength qualities: "Geese-swans", "Fox and chickens".

The games that were selected for the pedagogical experiment were also differentiated by academic quarters.

In the first quarter, outdoor games of an athletics orientation were used: "Don't stumble", "Wolf in the pit", "Seine", "Tag", and "Accurately on target", since the material on athletics is studied according to the curriculum in this quarter.

In the second quarter, the children studied exercises with elements of acrobatics and gymnastics, so games with elements of acrobatics and gymnastics were used, such as: "The Bear in the Forest", "Owl", "The Sea is Agitated", "Tightrope Walker", "Thread and Needle".

In the third quarter, the following games were used: "Winter Fun", ski and sled relay games "Who is faster?", "Snowball on the Ball", "Marksman", and "Two Touches of Frost", as ski training is planned according to the curriculum.

In the fourth quarter, most of the time was devoted to sports games, so we used outdoor games with elements of sports games: "Duck Hunters", "Shootout", and "Fight for the Ball". Various relay games using balls: Counter relay, "Who will throw next", "Throwing at a moving target", "Jumping sparrows".

To determine the development of physical qualities in the experiment, physical fitness testing was used with the help of specific exercises and tests from the school physical education program for students from the first grade (2):

1. Running for 30 meters (measuring speed abilities) (2). Two control lines are marked at a distance of 30 meters from each other. At the command "To start!" the subject gets into the high start position at the starting line, followed by the command "March!". The subject runs 30 m to another line, the result is detected by a stopwatch, with an accuracy of 0.01 seconds. Two attempts are made; the best result is counted.

2. Pulling up from the vis while lying on a low crossbar (measuring strength abilities) (2).

Starting position: vis lying face up with a grip from above, arms shoulder-width apart, head, trunk, and legs form a straight line, feet together. The height of the crossbar is 90 cm. From the starting position, the participant pulls up to the intersection of the crossbar neck with the chin, returns to the starting position, fixes it for 1 second, and continues the test. The result is the number of pull-ups performed correctly.

3. Shuttle run 3x10 m (measurement of coordination abilities) (2). There are two control lines, starting and finishing, at a distance of 10 meters from each other. At the command "To start!" the subject gets into the high start position at the starting line. When he is ready, the command "March!" follows. Runs a distance of 10 meters 3 times. The result is accurate to 0.1 seconds.

4. Leaning forward from a standing position on a gymnastic bench (measuring flexibility) (2). The subject stands on the edge of the gymnastic bench and tilts his torso and arms down, touching the

linear markings with his fingers. Legs are straight. Three attempts are given. The result from the bench level in cm.

Mathematical and statistical methods of results processing. To determine the development of the physical qualities of children of primary school age, the statistical reliability of the test results obtained during the pedagogical experiment, the methods of mathematical statistics widely used in pedagogical research were used: determination of the arithmetic mean and standard deviation, and according to the Student's t–Criterion, the reliability of differences was determined at a 5% significance level (19, 20).

RESULTS

Before the beginning of the pedagogical experiment, all students took control tests (Table 1).

Table 1 shows that at the beginning of the study, there were no statistically significant differences between the groups (p>0.05). Such results indicate the relative homogeneity of the control and experimental groups before the start of the pedagogical study.

Table 1. Indicators of physical qualities of schoolchildren 7-8 years old before the start of the study

Types of control tests	CG (n=29) X+m	EG (n=29) X+m	p
Running for 30 meters (sec)	7.5±0.5	7.7±0.4	p>0.05
Pull-up from the lying vis (number of times)	7.5±0.9	7.2±1.1	p>0.05
Shuttle runs 3x10 m (sec)	10.5±1.3	10.7±1.1	p>0.05
Tilt forward (cm)	4.6±0.4	4.4±0.3	p>0.05

After the end of the pedagogical experiment, the indicators of all children who participated in the experiment were also measured (Table 2).

Table 2 shows that during the year of the study, the indicators in both groups became higher for all tests. In the control group, there was an improvement of 5.3% in the "Running for 30 meters" test and 5.7% in the "Shuttle run 3x10" test (p=0.02). In the "Pull-up from the lying vis" test, the indicators were higher by 13.3%, and in the "Tilt forward" test by 10.8% (p=0.02). Despite the positive increase in indicators in the control group, there was no significant increase from the beginning to the end of the study.

Table 2. Indicators of physical qualities of schoolchildren 7-8 years after the study

Types of control tests	Groups	Before the study X±m	After the study X±m	Growth of indicators	p
Running for 30 meters (sec)	CG	7.5±0.5	7.1±0.4	5.3%	p>0.05
	EG	7.7±0.4	6.3±0.6	18.2%	p<0.05
Pull-up from the lying vis (number of times)	CG	7.5±0.9	8.5±1.3	13.3%	p>0.05
	EG	7.2±1.1	10.1±1.2	40.2%	p<0.05
Shuttle runs 3x10 m (sec)	CG	10.5±1.3	9.9±1.2	5.7%	p>0.05
	EG	10.7±1.1	9.6±0.9	10.3%	p<0.05
Tilt forward (cm)	CG	4.6±0.4	5.1±0.5	10.8%	p>0.05
	EG	4.4±0.3	6.3±0.5	43.2%	p<0.05

In the experimental group, from the beginning to the end of the study, a significant increase in indicators for all tests was revealed:

1. "Running for 30 meters" improvement by 18.2% (p=0.02);
2. "Pull-up from the lying vis" improvement by 40.2% (p=0.01);
3. "Shuttle run 3x10 m" improvement by 10.3% (p=0.02);
4. "Tilt forward" improvement by 43.2% (p=0.01).

The increase in indicators over the study period is presented in the form of Figure 1.

Figure 1 shows that the results of the work of schoolchildren from the experimental group may indicate the effectiveness of the use of outdoor games in the process of physical education of first-graders.

DISCUSSION

The game has long been an integral part of a child's life, used for the upbringing and physical development of the younger generation. In outdoor games, natural movements peculiar to a person are used in an entertaining form:

walking, running, jumping, and throwing (15, 16).

Play activity is more attractive for children of primary school age, which is provided by a variety of movements, sharp, chaotic movements, jerks, static, and a variety of outdoor games. The game contributes to the creation of a positive emotional background in the classroom and the emergence of a sense of satisfaction, which, in turn, creates a positive attitude in children to physical exercises. All this makes it possible to fully replenish and satisfy the motor activity of children 7-8 years old (16, 21, 22). The formulated problem was solved by the inclusion of additional, specially selected outdoor games in the general school curriculum (4-7, 23-25).

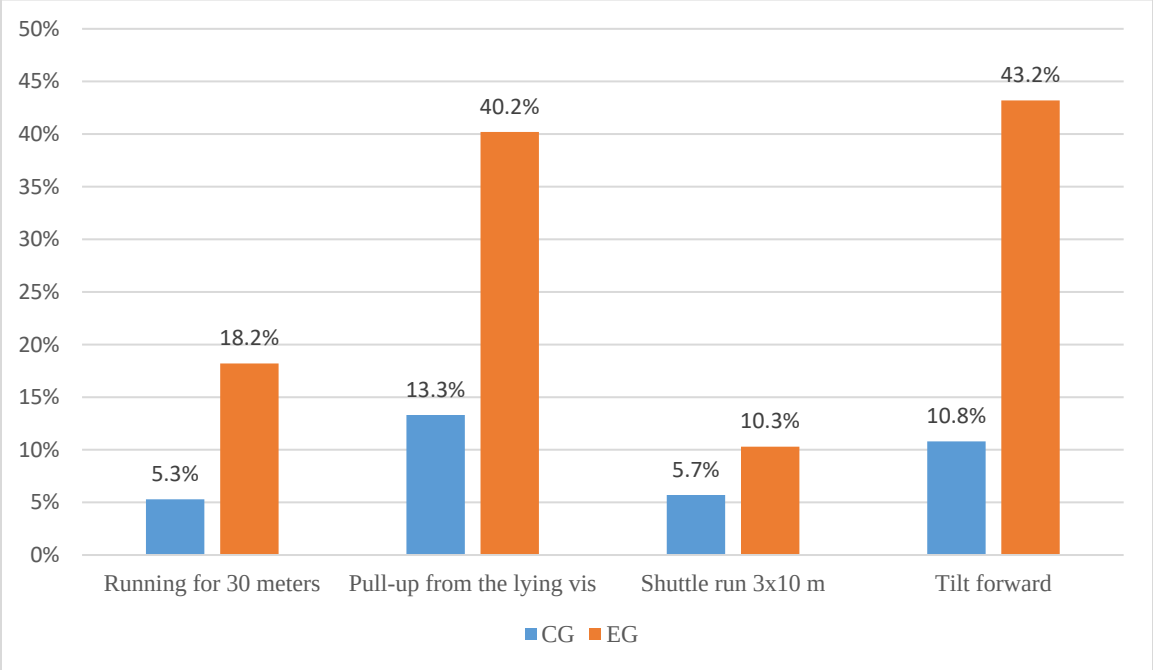

Figure 1. Growth of indicators during the study period.

Motor activity at this age plays a huge role in the complex development of the child's body. At this age, physical qualities develop more intensively. It is mainly recommended to include exercises for the development of speed and coordination abilities since 7-8 years is the optimal age for the development of these abilities (10-12).

The study aimed to study the influence of outdoor games on the physical fitness indicators of primary school children in physical education classes at school (2). As in other studies on physical culture, in some studies, the authors emphasize the importance of physical education for children's health, and for their active growth and development (6, 7). It is known that outdoor games are emotional and have a positive effect on the mood of schoolchildren in physical education classes and outside of classes (23, 24). However, we managed to determine the importance of outdoor games for the development of physical abilities, and we proved for the first time that the introduction of such games contributes not only to the appearance of positive emotions from a physical education lesson but also develops such physical qualities as speed abilities, strength abilities, coordination abilities, flexibility. The results of the pedagogical experiment proved the effectiveness of using outdoor games in working with first-graders in physical education classes at school. However, the data obtained during the study can be compared with the control standards and estimates for the result of the test.

For example, in the "Running for 30 meters" test, a grade of "5" is given to a student if he ran the distance in 6.0 seconds, a grade of "4" is 7.0 seconds, and a grade of "3" is 7.5 seconds. Below 3 points, the result is considered unsatisfactory, but the score "2" is not recorded

in the teacher's journal because of humanity to first-graders.

Our experiment showed that before the start of the study, the average indicators of children in the control group corresponded to the rating of "3" (7.5 seconds), and the indicators of the control group were even lower (7.7 seconds). After the end of the study, the children from the control group remained at the level of "3" points (7.1 seconds), and the children from the experimental group showed an average result (6.3 seconds) for a grade of "4."

As for the "Pull-up from the lying vis" test, here a score of "5" is given for 14 pull-ups, a score of "4" for 10 times, and "3" for 6 pull-ups. Comparison with the average indicators at the beginning of the experiment in both groups shows that the level of strength abilities of schoolchildren corresponds to the rating of "3" (7.5 and 7.2 pull-ups). After the experiment, the level of strength abilities of schoolchildren from the control group (8.5 pull-ups) remained for grade "3", and children of the experimental group were able to reach grade "4" (10.1 pull-ups).

In the "Shuttle run 3x10 m" test, a grade of "5" at school can be obtained for a score of 9.5 seconds, a grade of "4" for 10.0 seconds, and a grade of "3" for 10.5 seconds. If we compare the indicators of school standards and the indicators of the study from Table 2, we see that the level of development of coordination abilities in the control group was 10.5 seconds (score "3"), and after the study, it became 9.9 seconds (score "4"). In the experimental group, the indicators before the pedagogical experiment were lower than the "3" rating (10.7 seconds), and after the study, the average indicator of children increased to the "4" rating (9.6 seconds), while only 0.1 seconds were missing before the "5" rating.

The control test "Tilt forward" is used to assess the flexibility of schoolchildren. In it, you can get a score of "5" if the flexibility has reached the level of +9 cm, a score of "4" if the flexibility is +6 cm and a score of "3" for +3 cm. So, before the start of the study in both groups, the standard of the school physical education program corresponded to the grade "3" (+4.6 cm and +4.4 cm). After the pedagogical experiment, the children from the control group remained at the level of "3" points (+5.1 cm), and the children from the experimental group, on average, were able to reach the grade of "4" (+6.3 cm).

Thus, when comparing the results that we obtained during the study with the data from the school curriculum, we can say that even though the data from the beginning to the end of the study improved in the control group and significantly became higher in the experimental group, nevertheless, a comparison of the indicators of both groups before and after the study with the standards of the school curriculum shows that not a single indicator of the average value reached the grade "5". This indicates the general weakness of modern schoolchildren. What is the motive for further searching for ways and solutions to the issues of children's health, the growth and development of schoolchildren, the study of preschool education, the introduction of morning exercises, and other effective means of physical culture from early children?

The study involved students who were healthy and admitted by a doctor to physical education classes. The number of students who attended school in the 1st grade.

CONCLUSION

The results of the pedagogical experiment showed that the use of outdoor games in physical education lessons at school with children who study in the first grade has a positive and significant impact on the development of the physical qualities of children 7-8 years old. Thus, outdoor games are an excellent means of physical culture, which can be used to achieve goals and solve the tasks of a specific lesson in the physical culture program at school.

APPLICABLE REMARKS

- The problem of insufficient motor activity of younger schoolchildren can be solved with the help of outdoor games in physical education lessons at school with children.
- Based on the results of the pedagogical experiment, we claim that the use of outdoor games in physical education lessons at school in working with children aged 7-8 years will significantly improve their speed, strength and coordination abilities.

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AUTHORS' CONTRIBUTIONS

Study concept and design: Polevoy G. Acquisition of data: Polevoy G. Analysis and interpretation of data: Fuentes Barria H. Drafting the manuscript: Polevoy G. Critical revision of the manuscript for important intellectual content: Fuentes Barria H. Statistical analysis: Sablin A.B., Aguilera Eguia R. Administrative, technical, and material support: Polevoy G. Study supervision: Fuentes Barria H.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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