Original article

Stributing the Attention of Schoolchildren and Its Development with the Help of Classical Exercises

Georgiy Georgievich Polevoy

Abstract:
Objective: to determine the influence of Classical exercises on the distribution of attention of schoolchildren. Method: the pedagogical experiment was conducted during the academic year. It was attended by students aged 9-10 years (40 people). Coordination abilities were determined by the “Shuttle Run” test, and the distribution of students’ attention by the “Different counting” method. Statistical processing of the results was carried out according to the Bio-Stat program and the T-student was calculated. Results: after the experiment, the indicators in the control group improved by 2.9% (p>0.05) - shuttle running, and the distribution of attention from 36.1±2.4 to 32.9±3.4 (p>0.05). In the experimental group, shuttle running significantly improved by 14.1% (p<0.05), and the distribution of attention improved from 9.9±0.5 to 8.5±0.4 (p<0.05). Such data indicate the effective effect of Classical exercises on the indicators of the distribution of students’ attention. Conclusion: if students of 9-10 years of age in physical education classes will perform the Classics exercise, then the indicators of coordination abilities and the distribution of children’s attention will significantly improve.

Keywords: Physical culture, Mental processes, Physical qualities, Coordination abilities.

Introduction:
In recent years, children with various health problems have been entering school1–2. A partial solution to such a problem may be optimal motor activity. The positive effect of children’s physical activity on the cardiovascular, respiratory, nervous and many other human systems has been proven in some studies3–5. In the school years of life, a physical education lesson is of great importance for children in solving this problem. The main goal of physical education at school is the comprehensive development of students of all ages6–7.

In Russia, there is a unified physical education program at school for children in grades 1-118. The action of this program is aimed at the development of all physical abilities of children of different ages for the period of their schooling. This is strength, in high school age, speed in the middle level and coordination in the junior department.

Coordination abilities are indicators of a person’s dexterity, where he can quickly and accurately solve motor tasks. Coordination is the ability to coordinate the movements of different parts of the body. The individual elements of movement are combined into a single motor action, which is performed economically, unstrained, plastically, clearly. The movements of the trunk,

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Head, arms and legs are performed in three planes with respect to the body: facial, lateral, horizontal. The movements of the arms and legs in relation to each other in space can be: the same - the movements coincide in the direction (for example, the right arm and leg are drawn to the right); different names — performed in different directions (for example, during jumps, the right arm and left leg rise and vice versa). The movements performed by the hands or feet can be unidirectional (for example, both hands are raised up), multidirectional (for example, one hand is raised up, the other is withdrawn to the side). Questions of coordination of human movements have long attracted the attention of researchers. The extreme biomechanical complexity of these movements, the abundance of degrees of freedom, the variety and differentiation of motor acts cause significant difficulties in the study of human movements. Coordination abilities should be understood, firstly, the ability to expediently build integral motor acts, and secondly, the ability to transform the developed forms of actions or switch from one to another according to the requirements of changing conditions. These features largely coincide, but they also have their own specifics. Of great importance for children of primary school age is the development of motor function and the ability to control their movements. The ability to isolate individual movements, compare with each other, consciously manage them and adapt to obstacles, overcome them with the greatest possible dexterity. Coordination abilities of a person perform an important function in controlling his movements, namely, coordination, ordering of various motor movements into a single whole corresponding to the task.

The importance of the education of coordination abilities is explained by four main reasons:

1. Well-developed coordination abilities are necessary prerequisites for successful training of other physical qualities. They affect the pace, type and method of mastering the technique of most physical exercises, as well as its further stabilization and situationally adequate diverse application. Coordination abilities lead to greater density and variability of movement control processes, to an increase in motor experience.

2. Only formed coordination abilities are a necessary condition for the preparation of children. They contribute to the effective performance of work operations with ever-increasing demands in the course of work, increase a person’s ability to manage their movements.

3. Coordination abilities ensure economical expenditure of energy resources, affect the amount of their use, since muscle effort precisely dosed in time, space and degree of filling and optimal use of the corresponding relaxation phases lead to rational expenditure of forces.

4. A variety of exercise options necessary for the development of coordination abilities is a guarantee that it is possible to avoid monotony and monotony in classes, to ensure the joy of participating in sports activities.

Of course, in the course of each physical education lesson at school, a complex of educational, health and of course developing tasks is solved at once. However, the main problem is that in modern schools there is not enough sports equipment, playgrounds for the full implementation of the school curriculum. In our opinion, the solution to such a problem can be, for example, the use of physical exercise “Classics”, which has proven its effectiveness in previous studies. The exercise “Classics” does not require a lot of space, expensive sports equipment, it has shown its effectiveness in the development of some abilities. It is also important that an individual approach is used in the exercise, that is, the speed and pace of the exercise is chosen by the student himself. This is important, because unfortunately, for the most part, the school physical education program uses a general or group approach, and not an individual.

It is the junior school age period that is a favorable
period for the development of coordination abilities, which, in turn, are a good foundation for the development of other physical indicators of strength, endurance, strength and strength abilities and, of course, speed \textsuperscript{14-15}.

It is known that physical activity at different ages has a beneficial effect on some cognitive processes\textsuperscript{16-17}. However, we have not been able to find studies that would confirm the influence of the exercise “Classics” on the indicators Distribution of Attention of students aged 9-10 years, this was the aim of our study.

The Hypothesis of the Study: it is assumed that if you use the “Classics” exercise in physical education lessons, the indicators of coordination skills and the ability of students aged 9-10 to distribute attention will improve.

**Methods and Materials:**

**Participants:**

Students of 9-10 years old in the number of 40 people took part in the cross-pedagogical experiment. Before the start of the pedagogical experiment, all children underwent a medical examination and were admitted to physical education classes at school. At the time of this study, students were studying in the 3rd grade of school 60 in Kirov, Russian Federation.

All procedures met the ethical standards of the 1964 Declaration of Helsinki. Informed consent was obtained from all parents of school children who were included in the study.

**Procedure:**

All physical education classes at school were held under the attention and influence of the teacher, they were held 2 times a week for 40 minutes. A total of 56 lessons during 9 academic months (September - May).

The distribution of children into groups was carried out as follows.

The control group consists of 20 boys and girls from the 3rd “A” grade who studied according to the usual program\textsuperscript{8}.

The purpose of school physical education is the formation of a versatile physically developed person who is able to actively use the values of physical culture to strengthen and maintain their own health for a long time, optimize work activities and organize active recreation. The realization of the purpose of the curriculum correlates with the solution of the following educational tasks:

1) health promotion, posture improvement, prevention of flat feet, promotion of harmonious physical, moral and social development, successful learning;

2) formation of initial self-regulation skills by means of physical culture;

3) mastering the school of movements;

4) development of coordination abilities (accuracy of reproduction and differentiation of spatial, temporal and power parameters of movements, balance, rhythm, speed and accuracy of response to signals, coordination of movements, orientation in space) and conditioning abilities (speed, speed-power, endurance and flexibility);

5) formation of basic knowledge about personal hygiene, daily routine, the impact of physical exercise on health, performance and development of physical abilities;

6) development of ideas about the main sports, equipment and equipment, compliance with safety regulations during classes;

7) formation of an attitude to preserve and strengthen health, healthy and safe lifestyle skills;

8) introduction to independent physical exercises, outdoor games, their use in free time based on the formation of interests in certain types of motor activity and identification of predisposition to certain sports;

9) education of discipline, friendly attitude to comrades, honesty, responsiveness, courage during physical exercises, assistance in the development of mental processes (representation, memory, thinking, etc.) in the course of motor activity.
The experimental group consisted of 20 boys and girls from 3rd “B” grade who additionally performed the “Classics” exercise (an example of the exercise is shown in Table 1).

**Table 1: Exercise «Classics»**

<table>
<thead>
<tr>
<th>Square 1</th>
<th>Square 2</th>
<th>Square 3</th>
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<tbody>
<tr>
<td>8 5 2</td>
<td>7 1 5</td>
<td>5 7 2</td>
</tr>
<tr>
<td>3 7 9</td>
<td>4 9 6</td>
<td>1 3 4</td>
</tr>
<tr>
<td>6 1 4</td>
<td>8 3 2</td>
<td>8 9 6</td>
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</tbody>
</table>

Description of the exercise “Classics”:

In the school gym on the floor we draw three large squares, the side is 180 centimeters. Inside each square we draw 9 small squares and in them we write the numbers from 1 to 9.

The purpose of the exercise: During the lesson, the student must move in the first large square by jumping from the number “1” to the number “2” and so on to “9”, then he must jump in the same large square in the reverse sequence and only then move to the second large square, then to the third. If an error is made during the exercise, the student returns to the previous square. Before each physical education lesson, the numbers in the squares change. The exercise can be performed in any part of the lesson during the 40 minutes allotted for the physical education lesson.

Control tests that students took at the beginning and end of the study:

1. Coordination abilities - “Shuttle running”.
2. Distribution of attention - “Different counting”.

Shuttle running:

The distance during the shuttle run was 3 to 10 meters, which the student must overcome. The result is accurate to 0.1 seconds.

**Different counting:**

Students write numbers from 1 to 20 in ascending order on a piece of paper (A4). At the same time, they should count loudly from 20 to 1 (that is, in reverse order). Result: the amount of time spent by students on the task (up to 0.1 seconds).

**Mathematical and statistical processing of results**

The Excel, Program of Biostatistics and T-Student program was used, the reliability of the results at p=0.05 (19-20).

**Ethical clearence:**

This research was conducted in compliance with the needed research ethics. In addition, consent for participation was obtained from the participants before the beginning of their involvement in the study. All data were recorded and analyzed anonymously.

**Results:**

Before the beginning of the pedagogical experiment in both tests, the difference in the indicators of coordination abilities and attention distribution was insignificant (p>0.05). After the end of the pedagogical experiment, the students’ indicators improved, but in different ways (Table 2).

Table 2 shows that in the control group of children, the indicators of coordination abilities improved by 2.9% (p>0.05), and the indicators of attention distribution improved from 36.1±2.4 to 32.9±3.4 (p>0.05). Despite the fact that the indicators in both teams improved, they did not achieve statistically significant results.

In the experimental group, the indicators in both tests improved significantly. Coordination abilities improved by 14.1% (p<0.05), and attention distribution indicators mom 9.9±0.5 to 8.5±0.4 (p<0.05). Such results indicate the effectiveness of the implementation of the
exercise “Classics” and their positive impact on the distribution of attention of students aged 9-10 years.

**Discussion:**

As a result of the pedagogical experiment, new results were obtained.

In the experimental group, from the beginning to the end of the study, the indicators achieved statistically significant results in both tests. This indicates the effectiveness of using the exercise “Classics” in the process of physical education lessons at school. At the same time, not only the indicators of coordination abilities have improved, but also the indicators of the distribution of attention of students aged 9-10 years. In this regard, we can talk about the relationship between physical activity and mental processes, such data are confirmed by previously conducted studies\(^{16,19,20}\).

The results of the study in the control group indicate the relative and not significant effectiveness of using the standard physical education program at school for students of grades 1-11. Not a significant increase in indicators in both tests may indicate a natural increase in coordination abilities and cognitive processes at the age of 9-10 years, such conclusions can be confirmed by other studies, since the age of 9-10 years is sensitive for the development of motor abilities\(^{14,15}\).

The importance of physical culture in the school period of a person’s life is to create a foundation for comprehensive physical development, health promotion, and the formation of a variety of motor skills and abilities. All this leads to the emergence of objective prerequisites for the harmonious development of personality\(^{26-28}\).

The full development of school-age children without active physical education is practically unattainable. It was revealed that the lack of motor activity seriously worsens the health of the growing child’s body, weakens its defenses. Without physical activity, full-fledged physical development is not possible. The importance of physical culture for a child at school lies in the formation of various physical skills and abilities, in strengthening health. This helps the comprehensive development of a person during adulthood and is very important. Physical development is especially important at school age, because it also affects the mental activity of a teenager. Inadequate physical development can lead to serious consequences\(^{29-32}\). Given that the peak of physical development occurs at school age, it is rational to pay close attention to the development of the main motor abilities at school age. Physical education classes allow students to exclude such negative manifestations as alcohol and drug use, deviant and delinquent behavior; and also contribute to the socialization of the student’s personality; provide an opportunity to develop and form qualities such as initiative, independence, confidence, leadership qualities\(^{33-36}\). Physical exercises contribute to the formation of a conscientious attitude to study, a sense of responsibility and duty, collectivism, willingness to help comrades, humanity, honesty, will to win\(^{37-40}\).

The level of motor activity is very important. It is necessary that it be optimal, because a lack of excess can lead to negative consequences. Physical activity has a great impact on the development and growth of children. Lack of motor activity in a child can lead to pathological changes in the body. It was found that 50% of children aged 6-7 years have a lack of motor activity. For schoolchildren aged 9-12, this figure reaches even larger sizes – 60%, and for older schoolchildren – 70%. Physical education lessons at school compensate only a small part of the motor norm\(^3,4\).

Physical exercises are the main means of physical education of schoolchildren. They form important skills of the body. In the physical education of students, sections of the school curriculum are used, such as:

- **Athletics** is an important factor in the development of motor activity, which allows you to properly dose loads.
- **Swimming** – allows you to unload the spine, involves many muscle groups, trains breathing, is a hardening tool, because water has a
temperature lower than the temperature of the human body.

· Gymnastics – allows you to improve many physical skills, coordinate movement, easily dose loads.

· Sports and outdoor games – allow you to develop and apply many physical skills acquired in various types of exercises, it is easy to interest children, however, it is difficult to dose loads in the game, so it is necessary to choose games according to physical fitness.

In the physical education of schoolchildren, various forms of physical exercises are used: compulsory classes at school, classes in extracurricular institutions and in the family.

School forms of physical exercises:

· Physical education lesson is the main form of physical exercises at school. Features:
  1. It is the most popular form of school classes;
  2. It takes place under the guidance of a teacher;
  3. Promotes the comprehensive development of students.

· Physical culture and wellness activities during the school day — activate the motor mode during the school day, keep students in good shape during mental activity, have a beneficial effect on the body. Forms of such classes:
  1. Morning gymnastics – affects performance improvement, improves well-being.
  2. Physical training sessions in the classroom – relieve fatigue, increase mental activity, are carried out when fatigue appears.
  3. Games and physical exercises during recess are a useful means of active recreation, improving health and returning to the learning process. For convenient games and physical exercises during recess, you need to prepare a place in advance, the necessary equipment. Usually children participate in such classes voluntarily and show an active interest in such events.
  4. Daily physical education classes in extended groups solve the following tasks: strengthening health, hardening the body, improving physical and mental performance, improving physical skills, fostering the habit of exercising regularly and independently.

Physical development at school age is very important, because not only the physical form and state of health in the future, but also the moral development of the child depends on the timely development of physical skills and abilities.

Lack of motor activity for children as well as for adults is an actual problem. The solution to the problem seems to us in the application of the “Classics” exercise primarily in physical education classes, while the exercise does not require special equipment and skills, therefore it can be used on any hard surface, sports ground or in the park.

One of the advantages of the exercise “Classics” is that when it is performed, an individual approach is implemented, which allows you to unlock the potential of each student or adult. The importance of an individual approach in physical education has been proven in previous studies.

Conclusion:

Tasks of physical culture at school:

1) health promotion, development of basic physical qualities (speed, speed-strength, flexibility, general endurance, special and specific coordination) and improvement of the functional capabilities of the body (cardiovascular, respiratory, nervous system and musculoskeletal system);

2) formation of a culture of movements, enrichment of motor experience with physical exercises with a general developmental orientation, technical actions and techniques of basic sports (athletics, gymnastics with elements of acrobatics, ski training, sports games: basketball, volleyball);

3) mastering knowledge of physical culture and sports (physical fitness, speed, flexibility, coordination, dexterity), formation of a healthy
lifestyle (hardening, hygiene, daily routine, bad habits and their harmful effects on the body);
4) training in skills and abilities in physical culture and health and sports activities (physical training, outdoor games), independent organization of physical exercises (safety requirements and hygiene rules);
5) education of positive personality traits of students such as responsibility, independence, activity, diligence, perseverance, patience, norms of collective interaction (mutual understanding, mutual assistance, assistance) and cooperation in educational and competitive activities.

Thus, physical activity in physical education classes at school is of great importance. If you additionally perform the “Classics” exercise at each physical education lesson, then the indicators of motor abilities of students aged 9-10 years will significantly improve. At the same time, the exercise has a positive and effective effect on the indicators of attention distribution of students aged 9-10 years. This is important for the development of mental and cognitive processes for schoolchildren in general. The research is relevant and promising for studying in the field of sports and physical culture.

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Data gathering and idea owner of this study: Polevoy G.G.
Study design: Polevoy G.G.
Data gathering: Polevoy G.G.
Writing and submitting manuscript: Polevoy G.G.
Editing and approval of final draft: Polevoy G.G.

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