

Development of the Ability to Adapt and Rearrange Movements in Children 8-9 Years with the help of Exercises «Classic's»

GEORGIY GEORGIEVICH POLEVOY

Department of Physical Education, Vyatka State University, Kirov, Russia.

Correspondence to Dr. Georgiy Georgievich Polevoy Email: g.g.polevoy@gmail.com

ABSTRACT

Aim: To study the influence of the exercise «Classic's» on the indicators of general coordination abilities and indicators of the ability to adapt and rearrange movements in younger schoolchildren.

Methods: 50 schoolchildren from secondary school took part in the pedagogical experiment. Physical education classes held for 40 minutes twice a week. The study lasted for an academic year (September-may). The level of development of general coordination abilities determined by the test «Shuttle run», the level of development of the ability to adapt and rearrange schoolchildren determined by the test «Tag». In the process of mathematical processing of the results t-Student was used, the significance level at $P<0.05$.

Results: after the end of the pedagogical experiment, the indicators in CG improved, but slightly, this indicates the effectiveness of the standard program for physical education in school. Indicators in EG improved significantly in the test «Shuttle run» from 10.5 ± 0.8 sec to 8.5 ± 0.5 sec ($P<0.05$), and in the test «Tag» by 52.4% ($P<0.05$). The results of the study in schoolchildren in the EG show the effectiveness of the use of the exercise «Classic's» in physical education classes at school.

Conclusion: if every lesson of physical culture in school children 8-9 years complete the exercise «Classic's», the indicators of coordination abilities and the ability to adapt and rearrange movements will improve greatly will improve the emotional background of the lesson and motor density of the lesson.

Keywords: schoolchildren, coordination ability, physical education lesson, to adapt and rearrange.

INTRODUCTION

One of the problems of modern society is the lack of movement. It is necessary to accustom children to high motor activity from early childhood. The lesson on physical culture at school is a centralized form of physical exercises. School lessons are compulsory. The main purpose of the lesson in physical culture is not only training and improvement of knowledge and skills, but also the development of motor abilities and increase physical activity of schoolchildren. The duration of the lesson at school is 40 minutes¹⁻³.

The main purpose of the program on physical culture at school is a comprehensive harmonious development of the personality of schoolchildren⁴. One of the problems in the implementation of the school program is the lack of space for physical education, as a rule, it is one gym, not large. To implement the program of physical culture at school requires creative thoughts of the teacher. As a rule, the motor activity of schoolchildren is at a low level due to various reasons, such as explaining a new exercise, performing exercises in the flow, discipline issues and many pauses that reduce the motor density of the lesson. How to fill such pauses?

One of the easiest and most versatile exercise is the exercise of «Classic's». It does not require significant material investments, special physical skills.

In addition, the primary school age is sensitive to the development of coordination abilities. If at the age of 7 to 9 years to develop these abilities in each lesson, the effect of their development will be much higher than if they develop in another age period^{5,6}.

The level of coordination reflects the indicators of technical training and the ability to control your body and move it in space^{7,8}. Coordination abilities can be general and specific^{9,10}. General coordination abilities allow you to

quickly and economically solve motor problems, they are the Foundation for the development of other physical abilities. Among the variety of specific coordination abilities should highlight the ability to adapt and rearrange movements is the speed of conversion of the developed forms of motion or switching from one motor action to another, accordingly changing conditions¹¹.

The aim of the study is to study the influence of the exercise «Classic's» on the indicators of general coordination abilities and indicators of the ability to adapt and rearrange movements in younger schoolchildren.

The hypothesis of the study is the assumption that if at each lesson on physical culture in school children 8-9 years old will perform the exercise «Classic's», their overall coordination abilities and indicators of the ability to adapt and rearrange movements will improve significantly.

METHODS

50 schoolchildren aged 8-9 took part in the study, which lasted from September to May. The children studied in a regular secondary school №60 in Kirov, Russia. During the study, all children were healthy and had access to practical exercises in physical culture. The duration of the lesson on physical culture was 40 minutes, classes held 2 times a week.

Before the study 2 groups were formed:

CG – these schoolchildren from 2A class. They were engaged in the standard program for elementary school schoolchildren in physical education⁴.

EG – these children from 2B class. They were engaged in the same program, but additionally performed physical exercise «Classic's» in each lesson (table 1).

In the gym, at school, on the floor there are three large squares, the side of one square is 180 cm. Each large square includes 9 small squares with numbers from 1

to 9. The task of the schoolchildren to jump from square to square in order of numbers from 1 to 9, then in reverse order to number 1. The jump can be anything. In case of an error, the schoolchildren returns to the previous number. During the lesson on physical culture, each schoolchildren must overcome all three squares, the numbers in them change before each lesson. Can start the exercise in any part of the lesson.

Assessment of schoolchildren abilities carried out on two control tests:

1) Shuttle run 3x10m (assessment of general coordination abilities)¹².

The mobile game «Tag» (assessment of the ability to adapt and rearrange movements). The game involves the entire class (25 people). Each schoolchild has a number on his chest and on his back (from 1 to 25). At the signal the teacher (speaks any number) the schoolchild must «to tag» as many classmates for 10 seconds. Can move to all around the sport hall. Those who hurt «got tagged» go abroad sports hall. Each schoolchild performs the task 2 times, the average result is determined¹³.

The analysis of the results was carried out using Microsoft excel and bio-stat, parametric criterion t-Student used, the significance of the result at $P < 0.05$ ^{14,15}.

RESULTS

Before the study, all schoolchildren passed control tests. Unreliable difference in the results was at the beginning of the experiment between schoolchildren 2A and 2B class.

After the pedagogical experiment the indices EG and CG changed (Table 2).

The results of table 2 show improvement for all indicators in both groups. Schoolchildren who were engaged in the standard program and did not perform any additional exercises were able to improve their performance in the test «Tag» from 6.7 ± 1.0 points to 7.5 ± 1.2 points ($P < 0.05$), and in the test «Shuttle run» performance improved by 3.9% ($P < 0.05$). This indicates the effectiveness of the existing standard physical education program for younger schoolchildren, as well as the fact that the natural increase in coordination abilities falls on a favorable period of their development – is the age of 7-10 years.

The schoolchildren from the EG, who have been engaged in the standard program and performed on each lesson, an exercise of «Classic's» is much seizing your performance in the test «Shuttle run» from 10.5 ± 0.8 to 8.5 ± 0.5 h ($P < 0.05$), and in the test of «Tag» performance improved to 52.4% ($P < 0.05$). The results of the study in schoolchildren of 2B class show the effectiveness of the use of exercises «Classic's» in the classroom for physical education in school.

Table-1: Exercise «Classic's»

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

Exercise «Classic's» has its own characteristics:

Table-2: Indicators of coordination abilities and ability to adapt and rearrange movements of schoolchildren 8-9 years

Test	CG				EG			
	Before	After	%	P	Before	After	%	P
Shuttle run 3x10 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	$P < 0.05$
«Tag» (number of points)	6.7±1.0	7.5±1.2	11.9	$P < 0.05$	6.3±1.1	9.6±1.0	52.4	$P < 0.05$

DISCUSSION

Insufficient level of physical activity of schoolchildren is one of the problems of modern society. The motor mode of children should be stimulated. Lesson – this is the main form of educational work in a modern school. A special task of the physical culture lesson is to teach children of all age groups the correct motor skills and the development of physical qualities^{1-3,16,17}.

Lessons in schools held according to standard physical education programs for children of all ages [4]. At the same time, there are several methodics of physical culture and sports, the authors of which propose to replace the standard program of physical culture¹⁸⁻²⁰. However, the results of the study confirm the effectiveness of the standard program of physical culture for primary school. Since after the pedagogical experiment, the indicators have improved in all indicators in both groups, it confirmed that the favorable period for the development of coordination abilities and the ability to adapt and rearrange the movement is the primary school age^{5,6,21}.

Thus, it is not logical to change the existing standard program of physical education in school. The problem of lack of physical activity of schoolchildren can solved only by adding to the program of physical culture, in particular the exercise «Classic's». The results of the study confirm

the effectiveness of the use of exercises «Classic's» in physical education lessons. Schoolchildren from 2B class, who performed during the lesson exercise «Classic's» significantly improved performance in both control tests.

For most modern schools it is important that the exercise «Classic's» does not require a large material base, equipment or special training. The exercise carried out in a free pause during the lesson on physical culture. At the same time, each schoolchild can dose for himself the load (the speed of movement and the number of jumps), depending on his state of health or level of physical training. The value of differentiated approach in primary school age is very high²²⁻²⁴.

Pedagogical observation of the process, which took place during the school year in physical education lessons shows that children are happy to perform the exercise «Classic's», for many schoolchildren it was new. In some classes, there was a competitive component, when children tried to overtake each other when performing jumps. The importance of the use of playful and competitive methods in working with children of primary school age also confirmed by studies²⁵.

CONCLUSION

To increase the motor activity of schoolchildren in the classroom for physical education in school should use the exercise «Classic's». Exercise «Classic's» significantly increases the level of development of general coordination abilities and the ability to adapt and rearrange movements in children 8-9 years, as well as increases the emotional background of classes and motor density classes at school. The results of the study are relevant for teachers and a promising addition to modern programs on physical education in school.

REFERENCES

- Shuba LV. Modern approach to implementation of health related technology for primary school children. *Pedagogics, psychology, medical-biological problems of physical training and sports*. 2016; 20(2):66-71. <https://doi.org/10.15561/18189172.2016.0210>
- Donnelly J, Hillman C, Castelli D, Etnier J, Lee S, Tomporowski P, Lambourne K, Szabo-Reed A. Physical Activity, Fitness, Cognitive Function, and Academic Achievement in Children: A Systematic Review. *Medicine and science in sports and exercise*. 2016; 48(6):1197-1222. doi:10.1249/MSS.0000000000000901.
- Castelli D, Hillman C, Erwin H. Physical fitness and academic achievement in third- and fifth-grade students. *Journal of sport & exercise psychology*. 2007; 29(2):239-352. <https://doi.org/10.1123/jsep.29.2.239>
- Lyakh VI, Zdanevich AA. Work program on physical culture, grade 1-4. Moscow: Education. 2010; 80 p.
- Larisa S. Extremely Early High Abilities, Sensitive Periods, and the Development of Giftedness: a conceptual proposition. *High Ability Studies*. 2006; 8(2):247-258. <https://doi.org/10.1080/1359813970080209>
- Starosta W, Hirtz P. Sensitive and critical periods of motor coordination development and its relation to motor learning. *Journal of human kinetics* 2002; 7, 19-28
- Čillik I, Willwéber T. Influence of an exercise programme on level of coordination in children aged 6 to 7. *Journal of Human Sport and Exercise*. 2018; 13(2):455-465. doi:10.14198/jhse.2018.132.14
- Jaakkola J, Watt A, Kalaja S. Differences in the Motor Coordination Abilities Among Adolescent Gymnasts, Swimmers, and Ice Hockey Players. *Human Movement*. 2017; 18(1):44-49. DOI: <https://doi.org/10.1515/humo-2017-0006>
- Issurin VB, Lyakh VI. Coordination abilities of athletes: basics of manifestation, evaluation and elucidation: a review. *Journal of athletic enhancement*. 2017; 6:2. <https://doi.org/10.4172/2324-9080.1000255>
- Alexandrova VA, Shian VV. Some types of the coordination abilities of the athlete-dancers. *Uchenye zapiski universiteta imeni P.F. Lesgafta* 2014; 112(6):12-17. <https://doi.org/10.5930/issn.1994-4683.2014.06.112.p12-17>
- Polevoy G. Adaptation and rebuilding movements of young football players, taking into account different typologies. *Sri Lanka Journal of Child Health*. 2018; (47)3:223–227
- Polevoy GG. Training of motor rhythm in students, practicing football. *Physical education of students*. 2017; 21(4):189–192. doi:10.15561/20755279.2017.0407
- Lyakh VI. Coordination abilities: diagnostics and development. - Moscow: TVT Division, 2006. - 290 p.
- Khusainova RM, Shilova ZV, Curteva OV. Selection of appropriate statistical methods for research results processing. *Mathematics Education*. 2016; 11(1):303-315. doi: 10.12973/iser.2016.21030a
- Oldham J. Statistical tests (Part 2): parametric tests. *Nursing standard*. 1993; 44:28-30. <https://doi.org/10.7748/ns.7.44.28.s54>
- De Giorgio A, Kuvacic G, Milic M, Padulo J. The Brain and Movement: How Physical Activity Affects the Brain. *Montenegrin journal of sports science and medicine* 2018; 7(2):63-68. DOI: 10.26773/mjssm.180910
- François T, Roy JSh. School physical activity, school sports and academic performance. *The international journal of behavioral nutrition and physical activity* 2008; 5(10). <https://doi.org/10.1186/1479-5868-5-10>
- Maureen D, Heather H, Kara D, Rebecca LL. School-based physical activity programs for promoting physical activity and fitness in children and adolescents aged 6 to 18. *Journal Cochrane Systematic Review*. 2013; 1-10. DOI:10.1002/14651858.CD007651.pub2
- Dallolio L, Ceciliani A, Sanna T, Garulli A. Proposal for an Enhanced Physical Education Program in the Primary School: Evaluation of Feasibility and Effectiveness in Improving Physical Skills and Fitness. *Journal of physical activity & health*. 2016; 13(10). DOI: 10.1123/jpah.2015-0694
- Gregor S, Janko S. Influence of the quality implementation of a physical education curriculum on the physical development and physical fitness of children. *Journal BMC public health*. 2012; (12)61. <https://doi.org/10.1186/1471-2458-12-61>
- Charles HZ, Megan RG, Robert BM, Jana MK, Nathan AF. Sensitive Periods. *Monographs of the society for research in child development*. 2011; 76(4):147–162. <http://doi.org/10.1111/j.1540-5834.2011.00631.x>
- Whipp P, Taggart A, Jackson, B. Differentiation in outcome-focused physical education: pedagogical rhetoric and reality. *Journal Physical Education and Sport Pedagogy*. 2014; 19(4):370-382. <https://doi.org/10.1080/17408989.2012.754001>
- Burke Sh, Eys M, Carron A, Ntoumanis N. Group versus Individual Approach? A Meta-Analysis of the Effectiveness of Interventions to promote physical activity. *International Review of Sport and Exercise Psychology*. 2005; 2(1).
- Ion C, Serghei S, Constantin C. Differentiated physical training within the framework of a yearly training cycle of young footballers specialized on the position of goalkeeper. *Journal of Physical Education and Sport*. 2018; 18(1):270-275.
- Wood C, Hall K. Physical education or playtime: Which is more effective at promoting physical activity in primary school children? *BMC Research Notes*. 2015; 8(1):12. <https://doi.org/10.1186/s13104-015-0979-1>