Relay games with non-traditional division of the hall as a means of developing orientation in space among elementary school students

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Abstract

Objective of the study was to determine the impact of relay games with non-traditional division of the hall on the development of orientation in space in children of primary school age.

Methods and structure of the study. The pedagogical experiment was conducted with the participation of 57 second grade students of the Municipal Budgetary Educational Institution of the Petrozavodsk City District "Secondary Finno-Ugric School named after Elias Lennrot" (MBEI "Finno-Ugric School"). In the course of the experiment, an analysis was made of the results of the development of orientation in space in younger schoolchildren. At the ascertaining and control stages of the experimental work, students were offered test tasks to determine the ability to navigate on a plane (sheet of paper), the ability to navigate among objects on a plane, and graphic dictation.

Results and conclusions. During the experiment, the developed methodology was implemented, consisting of six relay games with an unconventional division of the hall into the ability to navigate on a plane, the ability to navigate among objects. All relay games are designed taking into account the age characteristics of students, relay games are drawn up, the necessary equipment, the number of team members and their gender are determined. The effectiveness of the developed methodology for the development of orientation in space by means of relay races with non-traditional division of the hall is determined.

Keywords: *spatial orientation, relay race games with non-traditional division of the hall, primary school students.*

Introduction. Spatial-temporal orientation is not only a vital skill, but also an important condition for the successful development of the educational program of primary education. In turn, spatial orientation is a part of such an important physical quality in primary school age as dexterity, which develops in the process of physical education. The best way to develop dexterity in children of primary school age, when they already have the necessary stock of motor skills, is the use of outdoor games and game tasks, where movements are performed in complex and often changing conditions. This requirement is met by relay race games, which belong to the group of non-plot outdoor games with rules and are the most exciting and interesting form of physical activity for children, because guide them towards a specific goal. Relay games effectively influence the development of such dexterity properties as coordination (coordination) of movements, orientation in space, accuracy, speed, and contribute to the development of the balance function.

Objective of the study was to determine the impact of relay games with non-traditional division of the hall on the development of orientation in space in children of primary school age.

Methods and structure of the study. The pedagogical experiment was conducted with the participation of 57 second grade students of the Municipal Budgetary Educational Institution of the Petrozavodsk City District “Secondary Finno-Ugric School named after Elias Lennrot” (MBEI “Finno-Ugric School”). Pupils of grade 2A (27 people) made up the experimental group (EG) and pupils of grade 2B (30 people) - the

control group (CG). Experimental work was carried out during the 2021/22 academic year.

At the ascertaining stage of the pedagogical experiment, all students were offered three test tasks.

Test 1. "Graphic dictation", the ability to navigate on a sheet of paper was determined. Examination technique: the student is offered a piece of paper in a cage, on which there are already four dots. Task: under the dictation of the teacher, you need to draw a pattern and then continue it on your own, and so four patterns. The performance of the task was assessed on a four-point scale.

Test 2. Test for the ability to navigate on a plane (sheet of paper). Method of examination: the student is offered a blank sheet of paper and a pencil. Task: draw a circle in the upper right corner, a square in the lower left corner, a triangle in the upper left corner, and an oval in the lower right corner. The evaluation of the assignment was carried out according to the following criteria: the time spent on the test and the number of errors made.

Test 3. Test for the ability to navigate on a plane. Examination technique: the student is offered a sheet of paper on which six rectangles are printed, each of which has a square and a circle, and blue, yellow, brown, orange, red, green pencils. Task: color the picture, where the circle is behind the square, in blue; a circle in a square - in yellow; a square on a circle - in brown; the circle in front of the square is orange; the square under the circle - in red; the square to the left of the circle is green. The evaluation of the assignment was carried out according to the following criteria: the time spent on the test and the number of errors made.

Based on the results of each test, we developed an experimental methodology consisting of six relay games with an unconventional division of the hall for each test. At the same time (based on the theoretical provisions on the special stages in the development of spatial relations), the relay games were organized as follows: the first week - games based on the first test; the second week - games for the second test; the third week - games for the third test, from the fourth week the alternation of relay races was repeated until the end of the experimental period.

The experiment was carried out in the format of the final part of physical education lessons - twice a week (the experimental class participated in relay races according to the developed methodology, and the control class participated in traditional outdoor games). In the 3rd quarter, the methodology began to be applied as the third lesson in physical education, since, according to the curriculum, the schoolchildren began skiing. A total of 18 lessons were held using relay games with non-traditional division of the hall (see table).

The results of the ascertaining experiment (table 1) clearly demonstrate that there is a difference between the experimental and control groups. The control group has the best performance relative to the experimental group in the graphic dictation test. According to the results of the test for the ability to navigate on a plane, both groups, on average, spent the same amount of time, but the experimental group had a higher percentage of errors. In the third test on the ability to orientate relative to other objects on a plane, the experimental group, on average, spent a little less time than the control group, but had a higher percentage of errors.

In the course of control tests in order to determine the effectiveness of the developed methodology for developing orientation in space among younger schoolchildren by means of relay race games with non-traditional division of the hall, students from the EG showed better results than children from the CG. The results of performing a graphic dictation practically do not differ in comparison with the CG.

Conclusions. The data obtained at the control stage of the experiment confirmed the effectiveness of the experimental methodology for the development of orientation in space in children of primary school age through relay games with non-traditional division

Comparative analysis of the results of the development of orientation in space in children from the EG and CG before and after the experimental period

Subjects	Test 1		Test 2				Test 3			
	points		min.		%		min.		%	
	Beginning of the year	End of the year	Beginning of the year	End of the year	Beginning of the year	End of the year	Beginning of the year	End of the year	Beginning of the year	End of the year
EG	14,4	15,3	29	14,8	29	13,3	3.32	3.39	37%	22,2
CG	14,9	15,1	27	7,4	28	10	3.35	3.31	26,6	23,3

of the hall. Both groups improved their results (influence of natural growth in each group), but the influence of the developed methodology on the experimental group is undeniable, since their performance in the final tests exceeded the results of the control group.

References

1. Ananiev B.G., Rybalko E.F. Osobennosti vosprijatiya prostranstva u detey [Features of the perception of space in children]. Moscow, 1964. - 300 p.
2. Belyakova O.G. Razvitie orientirovki v prostranstve na zanyatiyah po fizicheskoy kulture [Development of orientation in space in physical education classes]. Moscow: MGPPU publ., 2006. 320 p.
3. Voronova E.K. Formirovaniye dvigatelnoy aktivnosti detey 5-7 let: igry-estafety [Formation of motor activity of children aged 5-7 years: relay race games (practical guide)]. Practical guide. Volgograd: Uchitel publ., 2012. 127 p.
4. Galkina O.I. Razvitiye prostranstvennykh predstavleniy u detey v nachalnoy shkole [The development of spatial representations in children in elementary school]. Moscow: APN RSFSR publ., 1961. 89 p.
5. Kladnitskaya L.A. Oriyentirovka detey v prostranstve na urokakh fizkultury [Orientation of children in space at physical education lessons]. Formirovaniye vospriyatiya prostranstva i prostranstvennykh predstavleniy u detey. Collection of articles. B.G. Ananiev [ed.]. Moscow: Izvestiya APN RSFSR publ., 1956. No. 86. 223 p.
6. Lomov B.F. Osobennosti razvitiya predstavleniy o prostranstve v protsesse pervonachalnogo obucheniya chercheniyu [Features of the development of ideas about space in the process of initial teaching of drawing]. Formirovaniye vospriyatiya prostranstva i prostranstvennykh predstavleniy u detey. Collection of articles. B.G. Ananiev [ed.]. Moscow: Izvestiya APN RSFSR publ., 1956. No. 86. 223 p.
7. Suntsova A.V., Kurdyukova S.V. Izuchayem prostranstvo. Levo-pravo, verkh-niz, blizko-daleko [We study space. Left-right, top-bottom, near-far]. Moscow: Eksmo publ., 2009. 550 p.