THE INFLUENCE OF RINGO PLAYING TOOLS ON THE DYNAMICS OF THE FIELD OF VISION OF SIXTH GRADERS

ВПЛИВ ЗАСОБІВ ГРИ РІНГО НА ДИНАМІКУ ПОЛЯ ЗОРУ ШЕСТИКЛАСНИКІВ

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Abstracts

The article presents the results of research on changes in the field of vision of schoolchildren during the use of ringo game tools. The purpose of the study is to determine the dynamics of the peripheral field of vision of sixth-graders in physical education lessons while learning the game of ringo. Research methods: theoretical analysis of scientific and methodical literature, testing of peripheral vision using Forester's perimeter, pedagogical experiment, methods of mathematical statistics. 55 students of the 6th grade took part in the study: 27 students (12 ♂, 15 ♀) were the experimental group, 28 (14 ♂ and 14 ♀) were thecontrol group. In the lessons of physical education in the experimental group, learning to play ringo was introduced as a variable component. Before the experiment, it was found that the groups were homogeneous, there were no statistically significant differences in visual field indicators between schoolchildren of the control and experimental groups ($P>0.05$)

At the end of the pedagogical experiment after learning to play ringo, the experimental group of sixth-grade children improved their peripheral vision. The obtained indicators of the peripheral field of vision, color and silhouette sensitivity of the eye prove theeffectiveness of using the ringo game in physical culture lessons with sixth-grade students.

As a result of the study, it was established that the introduction of the ringo game into the educational process, as a variable module in physical education lessons, has a positive effect on the development of indicators of the peripheral field of vision of sixth graders. Comparing the results of the field of vision of the students of the experimental groupobtained at the beginning and at the end of the study, an improvement in the silhouette sensitivity of the right eye at the perimeter arc angles of 0° ($p<0.001$) and 225° ($p<0.05$), andthe color sensitivity of the right eye was found at angles of 0° ($p<0.001$) and 225° ($p<0.001$), as well as silhouette sensitivity of the left eye at an angle of 270° ($p<0.05$). A comparison of the results of visual field indicators in CG students at the beginning and at the end of the experiment did not reveal any positive changes ($p>0.05$). At the end of the experiment, EG schoolchildren outperformed their peers from CG in terms of silhouette and color sensitivity of the right eye at perimeter arc angles of 0°, 45°, 225° ($p<0.001$). In terms of silhouette and color sensitivity of the left eye, the advantage of EG schoolchildren was observed at the angles of the perimeter arc of 0° and 135° ($p<0.001$) and for the silhouette – 225° and 270° ($p<0.05$). In all other cases, differences in the parameters of the field of silhouette and color sensitivity of the eyes were observed, but they were not significant ($p>0.05$).

***Key words*:** ringo, peripheral vision, field of vision, physical education.

У статті наведено результати досліджень зміни поля зору школярів під час використання засобів гри в рінго. Мета дослідження – визначити динаміку периферійного поля зору шестикласників на уроках фізичної культури під час вивчення гри рінго. Методи дослідження: теоретичний аналіз науково-методичної літератури, тестування периферійного зору за допомогою периметра Ферстера, педагогічний експеримент, методи математичної статистики. У дослідженні брали участь 55 учнів 6 класів: 27 учнів (12 ♂, 15 ♀) становили експериментальну групу, 28 (14 ♂ і 14 ♀) – контрольну групу. На уроках фізичної культури у експериментальній групі як варіативний компонент

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запровадили вивчення гри в рінго. До експерименту було виявлено, що групи були однорідні, статистично достовірних відмінностей за показниками поля зору між школярами контрольної та експериментальної груп не спостерігалось (P>0,05)

Після завершення педагогічного експерименту з вивчення гри в рінго отримали покращення показників периферійного зору в експериментальній групі дітей шостого класу. Отримані показники периферійного поля зору кольорової і силуетної чутливості ока доводять ефективність використання гри рінго на уроках фізичної культури з учнями шостих класів.

У результаті дослідження встановлено, що запровадження у навчально-виховний процес вивчення гри рінго, як варіативний модуль на уроках фізичної культури, позитивно впливає на розвиток показників периферійного поля зору шестикласників. Порівнявши результати поля зору в учнів експериментальної групи, отримані на початку і наприкінці дослідження, було виявлено покращення показників силуетної чутливості правого ока при кутах дуги периметра 0° (p<0,001) та 225° (p<0,05), кольорової чутливості правого ока при кутах 0° (p<0,001) та 225° (p<0,001), а також силуетної чутливості лівого ока при куті 270°(p<0,05). Порівняння результатів показників поля зору в учнів КГ на початку і наприкінці експерименту позитивних зрушень не виявило (p>0,05). Наприкінці експерименту школярі ЕГ переважали однолітків із КГ за показниками силуетної та кольорової чутливості правого ока при кутах дуги периметра 0°, 45°, 225° (p<0,001). За силуетною та кольоровою чутливістю лівого ока перевага школярів ЕГ спостерігалась при кутах дуги периметра 0° і 135° (p<0,001) та за силуетною – 225° і 270° (p<0,05). В усіх інших випадках відмінності у показниках поля силуетної та кольорової чутливості очей спостерігалися, проте вони були несуттєвими (p>0,05).

Ключові слова: рінго, периферійний зір, поле зору, фізичне виховання.

Introduction. Peripheral vision plays an important role in human life, as it simultaneously provides a general overview of all objects surrounding the object [9]. Objects that move, but are not projected onto the central fovea of the eyeball, are perceived by the peripheral elements of the retina [10].

The effectiveness of sports exercises largely depends on the processes of perception and processing of sensory information [12]. These processes determine the rational organization of movement acts, as well as the perfection of the athlete's tactical thinking [10].

The visual sensor system is leading in sports games. After all, in team sports, most of the actions performed by the players are oriented towards the work of the visual analyzer. Because players need to see their teammates and opponents in the field of vision at the same time, fix their movements, and at the same time control the movement of the ball.

An effective means of physical education is the non-traditional game of ringo, which is quickly gaining popularity among children and young people, students [5], adults in Poland, Ukraine, Belarus and many other countries [7; 19; 22]. "Ringo" is both an individual and a team sport [20]. Opponents throw over a ring (or rings) on a special court separated by a net [21]. The aim of the game is to throw one or two rings over the net so that it or they touch the opponent's court and prevent the opponent from making the same attempt [16]. The great variety of movements characteristic of ringo strengthens the nervous system, strengthens the motor apparatus, improves metabolism and improves the activity of all body systems [3; 6; 21].

Analysis of recent sources and publications. Experts prove that the functional state of the visual sensor improves under the influence of sports games. Thus, in the works of I. Pomeshchykova and co-authors [10; 12], the indicators of peripheral vision of fourteen-year-old basketball players were determined and the interdependence of the effectiveness of game indicators with the state of pyrometry indicators was revealed. Others [14] recommend improving sensory systems as an additional factor in increasing the technical skill of handball players. A number of authors [1; 23] emphasize the importance of the development of peripheral vision for qualified football players. The improvement of the indicators of the peripheral field of vision in volleyball players was confirmed in the works of D. Badau and co-authors [17], who worked with volleyball players aged 13–14 years. At the same time, O.O. Shevchenko [15] investigated changes

in peripheral vision test results in preschool children after systematic tennis lessons. In his research, he recorded an improvement in visual analyzer indicators in children aged 5-6 who played tennis [15]. K. Krushelnytska notes the importance of the visual field for shooters [13].

The specific features of playing ringo involve various movements and stops, constant changes in the position of the head and body in space, which significantly agitates the vestibular sensory system, which requires constant training. From there, it can be assumed that the various moving actions of the ringo game will influence both the functional state of schoolchildren and the functions of feeling and perception.

However, we were unable to find data on the functional state of the visual analyzer in the process of schoolchildren learning to play ringo, which prompted us to conduct our study.

The aim of the study is to determine the dynamics of the peripheral field of vision of sixth graders in physical education lessons while learning the game of ringo.

Research material and methods

Research participants. 55 pupils of the 6th grade took part in the study: 27 (12 boys, 15 girls) were the experimental group, 28 (14 boys and 14 girls) were the control group. All students were classified according to their state of health in the main medical group without any significant deviations in the state of health. All participants and their parents were informed and agreed to participate in the study.

Organization of research.

Research methods. The following research methods were used to solve the tasks: theoretical analysis of scientific and methodical literature, testing of peripheral vision using Forster's desktop perimeter, pedagogical experiment, methods of mathematical statistics.

Measurement of the students' field of vision was conducted by using Forster's desktop perimeter, which is a moving semicircle attached to a tripod and graduated in degrees. The student sat with his back to the light, placing his chin on the stand of the tripod. The field of vision was determined for each eye separately. The student closed one eye, and with the other fixed a white point in the middle of the arc of the perimeter. The experimenter slowly moved the green circle along the inner surface of the perimeter arc from the periphery to the center, the student reported when he recognized the silhouette of the circle (silhouette sensitivity), the experimenter continued to move the circle until the student reported when he saw the color (color sensitivity). According to the scale, the value of the corresponding angle (in degrees) was determined and recorded in the form. The arc of the perimeter was set at angles of 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° and the research was carried out in asimilar way. Having determined the field of vision for one eye, it was determined for the othereye in a similar way. The field of vision was measured at the beginning and at the end of the implementation of the experimental ringo training program.

Organization of the experiment. To identify the dynamics of the field of vision, a parallel experiment was conducted, which involved comparing the indicators of the field of vision between the control and experimental groups. Research was conducted during the 2019–2020 academic year. Classes in the experimental and control groups had common and distinctive features. Common features: in both groups, classes were conducted according to the current program, with the exception of the variable module. Distinguishing features – the students of the experimental class studied the ringo game.

At the beginning and end of the academic semester, the indicators of the peripheral field of vision of both groups were determined and compared, and the obtained results were analyzed.

The introduction of the game took place as a variable module in the physical education program [8]. A total of 18 hours were planned for mastering the techniques of the game and playing ringo in the II academic term in such a way that 9 lessons (in the beginning) were held in the sports hall, and the next 9 (if possible) outside. Pupils of the control group at the same time passed the material on athletics. There were no differences in the assimilation of other

sections of the curriculum among the students of the experimental groups.

At the beginning, the ringo training method involved the formation of primary coordination ties by learning to transfer the ringo ring from hand to hand; throwing the ring over and catching with one hand, throwing with different trajectories and different starting positions. In addition, it was mandatory to learn each exercise with both the right and left hand. Having learned the exercises with the ringo ring on the spot, we moved on to mastering the movement exercises. Initially, it was suggested to perform the same exercises as on the spot during running and various ways of moving. Then they moved on to the same exercises with partners in place, and then in motion.

In the lessons, preference was given to the game method using various relays and active games. Movement games and relays were selected for the development of dexterity and speed, for example, types of movement with tossing and catching the ringo on one's body alternately with the right and left hands. Then they offered relay races with the performance of tasks in pairs, threes with movements and overturning and catching the ringo. In addition to speed exercises, the accuracy of movements (hitting the target with the ring) was also improved. After the students mastered the simpler techniques of the game, it was recommended to use them in games, for example, "Ringo's dogs", "Catch with a ring". After all, the use of games in the educational process helps to increase the motivation for classes and develops strong-willed qualities in children. In the 6th lesson of assimilating the material of the ringo game, children were already offered to play a complete game 1 on 1 and 2 on 2 in compliance with the rules.

Statistical analysis. Mathematical statistics methods were used to process the research results. For each indicator, the average arithmetic value (M), arithmetic error (m), mean square deviation (σ), and reliability of differences according to the student's test were calculated.

During the conduct of complex pedagogical and biological research, the laws of Ukraine on health protection, the Declaration of Helsinki of 2000, and Directive No. 86/609 ofthe European Community on the participation of people in medical and biological research were followed.

The results. The game of ringo involves running, jumping, and throwing, which contribute to the improvement of children's motor reactions. Due to the constant occurrence of non-standard situations, children need to orient themselves quickly, which affects the visual analyzer. Team ringo games involve the simultaneous use of 2 or more ringo rings. Therefore, players in such games often keep the visibility of the ring with their peripheral vision. The peripheral field of vision is one of the factors that limit the effective use of information about the movement of a ring or two ringo rings on the court, as well as the location and movement of players.

The peripheral field of vision of schoolchildren who learned the ringo game in lessons was characterized by color and silhouette sensitivity of the eye (Table 1). A comparison of the results of the field of vision between the students of the control and experimental groups received before the implementation of the experimental ringo training program revealed the absence of significant differences ($P>0.05$). This indicates the homogeneity of the groups at the beginning of the experiment.

Considering the fact that the peripheral field of vision is one of the indicators that analyze the information about the movement of ringo rings and individual players on the court, so when the player has a well-developed peripheral field of vision, the effectiveness of the game activity increases accordingly.

After the implementation of the experimental program of teaching schoolchildren to play ringo into the educational process, we evaluated the indicators of the peripheral field of vision of the sixth graders who participated in the study.

After comparing the results of EG students obtained at the beginning and at the end of the study, reliable changes were found in individual indicators of the field of vision (Table 2). Thus, the indicators of the silhouette sensitivity of the right eye at 0° ($p<0.001$) and 225° ($p<0.05$) perimeter arc angles, and the color sensitivity of

Table 1

Peripheral field of vision of pupils of the experimental (♀= 15, ♂=12) and control (♀=14, ♂=14) groups before the experiment

The angle ofthe arc of the perimeter			0°	45°	90°	135°	180°	225°	270°	315°
Right eye silhouette	CG	M_x	59.4	56.1	48.8	52.0	48.2	41.8	37.7	44.5
		± m	6.3	9.4	12.5	14.1	11.7	6.8	8.5	5.5
	EG	M_x	56.9	60.3	48.8	51.7	50.8	44.1	35.9	44.0
		± m	3.8	6.9	12.7	9.4	9.2	6.5	9.9	8.2
		t	1.8	1.9	0.0	0.1	0.9	1.3	0.7	0.2
		P	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05
Right eye color	CG	M_x	47.3	44.8	38.6	37.3	39.1	30.2	26.5	34.1
		± m	6.8	8.1	11.0	10.0	12.3	5.9	6.3	5.7
	EG	M_x	47.2	49.0	39.5	40.7	39.7	33.1	26.6	33.0
		± m	4.1	7.5	12.1	7.1	8.8	4.7	8.1	7.4
		t	0.1	1.9	0.3	1.4	0.2	2.0	0.0	0.6
		P	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05
Left eye silhouette	CG	M_x	45.4	53.4	50.4	59.3	54.5	47.0	38.1	40.5
		± m	4.8	14.0	10.8	6.1	7.5	3.9	7.4	9.8
	EG	M_x	48.1	54.4	50.6	60.9	51.9	49.0	36.4	42.2
		± m	5.3	12.0	10.6	8.8	5,3	7,1	10.7	14.1
		t	2,0	0.3	0.1	0.8	1.5	1.3	0.6	0.5
		p	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05
Left eye color	CG	M_x	32.9	38.5	39.3	47.4	42.5	38.0	28.0	28.0
		± m	5.7	12.1	10.2	6.9	7.5	4.8	9.0	8.6
	EG	M_x	35.8	40.8	38.3	50.6	41.3	37.9	25.0	26.9
		± m	4.8	10.6	11.5	6.8	4.8	7.3	11.1	10.9
		t	2.0	0.7	-0.3	1.7	-0.7	-0.1	-1.1	-0.4
		p	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05

Table 2

Peripheral field of vision of students of the experimental (♀= 15, ♂=12) group before and after the experiment

The angle of the arc of theperimeter			0°	45°	90°	135°	180°	225°	270°	315°
1			2	3	4	5	6	7	8	9
Right eye silhouette	EG at thebeginning of exp.	M_x	59.4	56.1	48.8	52	48.2	41.8	37.7	44.5
		± m	6.3	9.4	12.5	14.1	11.7	6.8	8.5	5.5
	EG at theend. exp.	M_x	66.3	63.1	49.9	51.1	51.7	48.5	38.1	45.0
		± m	7.2	9.0	12.9	9.8	10.3	6.6	9.9	8.1
		t	5.9	1.3	0.3	0.2	0.3	2.4	0.8	0.4
		P	<0.001	>0.05	>0.05	>0.05	>0.05	<0.05	>0.05	>0.05
Right eye color	EG at thebeginning of exp.	M_x	47.3	44.8	38.6	37.3	39.1	30.2	26.5	34.1
		± m	6.8	8,1	11	10	12.3	5.9	6.3	5.7
	EG at theend. exp.	M_x	53.8	50.6	37.2	40.9	38.7	37.4	27.2	33.3
		± m	7.0	8.4	11.2	7.4	8,.6	5.0	8.0	7.2
		t	4.1	0.7	0.7	0.1	0.4	3.2	0.3	0.2
		P	<0.001	>0.05	>0.05	>0.05	>0.05	<0.001	>0.05	>0.05
Left eye silhouette	EG at thebeginning of exp.	M_x	45.4	53.4	50.4	59.3	54.5	47	38.1	40.5
		± m	4.8	14	10.8	6.1	7.5	3.9	7.4	9.8
	EG at theend. exp.	M_x	48.6	54.4	50.9	64.7	52.1	51.6	43.0	43.9
		± m	5.2	10.9	10.2	7.2	4.7	8.3	10.6	12.7
		t	0.4	0.0	0.1	1.7	0.2	1.2	2.2	0.4
		p	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	<0.05	>0.05

Continuation of Table 2

1			2	3	4	5	6	7	8	9
Left eye color	EG at thebeginning of exp.	M_x	32.9	38.5	39.3	47.4	42.5	38	28	28
		± m	5.7	12.1	10.2	6.9	7.5	4.8	9	8.6
	EG at theend. exp.	M_x	35.6	41.0	38.7	52.3	42.7	39.8	30.4	28.8
		± m	4.3	9.3	10.8	5.9	3.8	6.9	10.4	9.4
		t	0.1	-0.1	0.1	0.9	1.2	1.0	1.8	0.7
		p	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05

Table 3

Peripheral field of vision of students of the control group (♀=14, ♂=14) before and after the experiment

The angle of the arc of theperimeter			0°	45°	90°	135°	180°	225°	270°	315°
Right eye silhouette	CG at the beginning of exp.	M_x	59.4	56.1	48.8	52.0	48.2	41.8	37.7	44.5
		± m	6.3	9.4	12.5	14.1	11.7	6.8	8.5	5.5
	CG at theend. exp.	M_x	62.1	53.8	48.9	49.5	48.9	42.0	37.4	42.5
		± m	6.2	9.2	10.9	11.6	12.3	6.5	8.4	6.1
		t	1.6	0.9	0.1	0.7	0.2	0.1	0,2	1,2
		P	(p<0.05)	>0.05	>0.05	>0.05	>0.05	>0.05	>0,05	>0,05
Right eye color	CG at the beginning of exp.	M_x	47.3	44.8	38.6	37,3	39.1	30.2	26.5	34.1
		± m	6.8	8.1	11.0	10.0	12.3	5.9	6.3	5.7
	CG at theend. exp.	M_x	49.6	42.5	40.4	37.5	39.3	29.8	25.5	30.4
		± m	5.8	7.7	11.8	8.8	12.6	5.9	6.7	7.9
		t	1.4	1.1	0.6	0.1	0.1	0.2	0.5	2.0
		P	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05
Left eye silhouette	CG at the beginning of exp.	M_x	45.4	53.4	50.4	59.3	54.5	47.0	38.1	40.5
		± m	4.8	14.0	10.8	6.1	7.5	3.9	7.4	9.8
	CG at theend. exp.	M_x	43.6	50.7	50.7	58.8	54.1	47.0	37.1	38.6
		± m	6.0	12.3	10.8	5.9	7.2	3.9	7.5	9.7
		t	1.2	0.7	0.1	0.3	0.2	0.0	0.5	0.7
		p	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05
Left eye color	CG at the beginning of exp.	M_x	32.9	38.5	39.3	47.4	42.5	38.0	28.0	28.0
		± m	5.7	12.1	10.2	6.9	7.5	4.8	9.0	8.6
	CG at theend. exp.	M_x	29.6	37.4	38.8	46.8	42.0	38.6	26.4	26.8
		± m	5.3	11.3	9.4	6.6	7.0	5.2	9.8	8.0
		t	2.2	0.3	0.2	0.3	0.3	0.4	0.6	0.6
		p	<0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05

the right eye at the angles of 0° (p<0.001) and 225° (p<0.001), as well as silhouette sensitivity of the left eye at an angle of 270° (p<0.05). This indicates that in the children of the experimental group, the field of vision indicators in some cases remained unchanged, and in others – improved, which was facilitated by the introduction of the ringo game into the initial process of learning.

The same comparisons of indicators at the beginning and at the end of the experiment were also conducted for the results of the field of vision of students of the control group (Table 3). Analyzing the data before and after the experiment, no significant changes were found in the field of vision of the students of the CG (p>0.05). In addition, according to one indicator, even deterioration was found (field of color sensitivity of the left eye at an angle of 0° (p<0.05)).

In addition to the comparison of indicators in the groups at the beginning and at the end of the

study, a comparison of the visual field indicators between CG and EG students at the end of the experiment was also carried out (Table 4).

At the end of the pedagogical experiment after learning ringo, the experimental group of sixth-grade children improved their peripheral vision. Thus, EG schoolchildren outnumbered peers from CG in terms of silhouette sensitivity of the right eye at perimeter arc angles of 0°, 45°, 225° ($p<0.001$), the same changes were detected in terms of color sensitivity of the right eye. Regarding the silhouette sensitivity of the left eye, the advantage of EG schoolchildren was observed at the perimeter arc angles of 0° and 135° ($p<0.001$), 225° and 270° ($p<0.05$). In terms of color sensitivity of the eye, EG schoolchildren significantly ($p<0.001$) CG indicators prevailed at perimeter arc angles of 0° and 135°. In all other cases, differences in the parameters of the field of silhouette and color sensitivity of the eyes were observed, but they were not significant ($p>0.05$).

As we can see, the obtained indicators of the peripheral field of vision, color and silhouette sensitivity of the eye prove the effectiveness of using the ringo game in physical education lessons with sixth-grade students.

Discussion. The work assumed that due to the specific features of playing ringo, which is characterized by various movements and stops, constant changes in the position of the head and body in space, and especially playing simultaneously with two or more ringo rings, it is possible to improve the field of vision of schoolchildren.

The results of our study confirmed the data [13; 15] that the means of physical education improve the peripheral field of vision of its participants. In particular, the article proves the effectiveness of improving the field of vision through the use of means of the ringo game. I. Pomeshchykova and co-authors [10] also insisted on improving the field of vision through the use of other sports

Table 4

Peripheral field of vision of students of the experimental (♀= 15, ♂=12) and control (♀=14, ♂=14) groups after the experiment

The angle of the arc of the perimeter			0°	45°	90°	135°	180°	225°	270°	315°
Right eye silhouette	CG	Mx	62.1	53.8	48.9	49.5	48.9	42.0	37.4	42.5
		± m	6.2	9.2	10.9	11.6	12.3	6.5	8.4	6.1
	EG	Mx	66.3	63.1	49.9	51.1	51.7	48.5	38.1	45.0
		± m	7.2	9.0	12.9	9.8	10.3	6.6	9.9	8.1
		t	2.2	3.8	0.3	0.6	0.9	3.6	0.3	1.2
		P	<0.05	<0.001	>0.05	>0.05	>0.05	<0.001	>0.05	>0.05
Right eye color	CG	Mx	49.6	42.5	40.4	37.5	39.3	29.8	25.5	30.4
		± m	5.8	7.7	11.8	8.8	12.6	5.9	6.7	7.9
	EG	Mx	53.8	50.6	37.2	40.9	38.7	37,.4	27.2	33.3
		± m	7.0	8.4	11.2	7.4	8.6	5.0	8.0	7.2
		t	2.3	3.7	1.0	1.5	0.2	5.0	0,.8	1.4
		P	<0.05	<0.001	>0.05	>0.05	>0.05	<0.001	>0.05	>0.05
Left eye silhouette	CG	Mx	43.6	50.7	50.7	58.8	54.1	47.0	37.1	38.6
		± m	6.0	12.3	10.8	5.9	7.2	3.9	7.5	9.7
	EG	Mx	48.6	54.4	50.9	64.7	52.1	51.6	43.0	43.9
		± m	5.2	10.9	10.2	7.2	4.7	8.3	10.6	12.7
		t	3.3	1.1	0.1	3.3	1.2	2.6	2.4	1.7
		p	<0.001	>0.05	>0.05	<0.001	>0.05	<0.05	<0.05	>0.05
Left eye color	CG	Mx	29.6	37.4	38.8	46.8	42.0	38.6	26.4	26.8
		± m	5.3	11.3	9.4	6.6	7.0	5.2	9.8	8.0
	EG	Mx	35.6	41.0	38.7	52.3	42.7	39.8	30.4	28.8
		± m	4.3	9.3	10.8	5.9	3.8	6.9	10.4	9.4
		t	4.5	1.3	0.0	3.2	0.5	0.7	1.4	0.8
		p	<0.001	>0.05	>0.05	<0.001	>0.05	>0.05	>0.05	>0.05

games; Ch. Vater and others [23]; D. Badau [17]. In addition, our research has shown that ringo devices have a beneficial effect on the field of vision of schoolchildren, namely sixth graders.

Researchers [2; 4; 18] note that training and introduction of new and modern means of physical education into the educational process increases interest in classes and increases the efficiency of assimilation of other sections of the curriculum. Our research confirms these data. As a result of the systematic use of ringo playing tools in the educational process, schoolchildren successfully mastered the ringo game and at the same time improved their peripheral vision.

Since the field of vision can be characterized as one of the criteria by which the level of health is assessed, the results of our research based on the results of the obtained indicators of the field of vision of sixth graders confirmed the research data on the positive influence of physical education tools on the health level of schoolchildren.

Considering the fact that ringo game is little known and not too widespread in Ukraine, we, in our research, proved the possibility of acquiring it in physical education classes. In addition, the obtained results of testing the field of vision of schoolchildren demonstrate its effectiveness, which was reflected in the improvement of the field of vision of schoolchildren.

The results of observations of the actions and behavior of students in the lessons while learning the game of ringo show the children's interest in learning the game, proving that the proposed experimental program can be used by general educational institutions that strive to optimize the educational process and introduce new and interesting means of physical education. as a variable component in the educational school program.

In further research, it is necessary to evaluate the effectiveness of the use of ringo playing tools in physical education lessons, by evaluating and analyzing the impact on the level of physical fitness, functional state and health of schoolchildren.

Conclusions. As a result of the study, it was established that the introduction of the ringo game into the educational process, as a variable module in physical education lessons, has a positive effect on the development of indicators of the peripheral field of vision of sixth graders. Thus, comparing the results of the field of vision of EG students obtained at the beginning and at the end of the study, it was found that the indicators of the silhouette sensitivity of the right eye at the perimeter arc angles of 0° ($p<0.001$) and 225° ($p<0.05$), the color sensitivity of the right eye of the eye at angles of 0° ($p<0.001$) and 225° ($p<0.001$), as well as silhouette sensitivity of the left eye at an angle of 270° ($p<0.05$). A comparison of the results of visual field indicators in CG students at the beginning and at the end of the experiment did not reveal any positive changes ($p>0.05$).

At the end of the experiment, EG schoolchildren outperformed their peers from CG in terms of silhouette and color sensitivity of the right eye at perimeter arc angles of 0°, 45°, 225° ($p<0.001$). In terms of silhouette and color sensitivity of the left eye, the advantage of EG schoolchildren was observed at the angles of the perimeter arc of 0° and 135° ($p<0.001$) and for the silhouette – 225° and 270° ($p<0.05$). In all other cases, differences in the parameters of the field of silhouette and color sensitivity of the eyes were observed, but they were not significant ($p>0.05$).

Conflict of interest. The authors declare that there is no conflict of interest.

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