

# Improving The Methodology Of Developing The Physical Qualities Of 11-15 Year Old School Students

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## ABSTRACT

(strength, agility, endurance, etc.) and age-specific features of physical (height, weight, chest circumference) development were identified. The effectiveness of the tools and methods used in the development of physical qualities in the lessons of physical education of schoolchildren, taking into account the age characteristics of the participants, has been developed and proven in paradoxical experience.

## Keywords

physical attributes, exercise, loading, intensity, size, norm, motor, method, strength, agility, speed, height, weight, chest circumference

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## Introduction

Today, the modernization of education in the world is important because it is aimed at the spiritual and physical development of the individual and improving the quality of the educational process. Special programs have been developed to increase the effectiveness of physical education classes in foreign countries. In private schools, as the choice of curricula is freer than in public schools, approbation of various pedagogical alternatives is carried out. Gradually, the system of individualized education, that is, a flexible approach to the learning process is applied to each student in different areas of learning, depending on his abilities and activities.

Age-specific features of physical development and fitness of schoolchildren in the world, scientific and pedagogical basis of the relationship between physical activity and physical development of children, development of physical qualities of students VI-VII, development of muscle strength of 7-12-year-old boys with different body composition and development options, Scientific research has been conducted in leading educational institutions, which have identified the means and methods of developing the strength, agility, endurance, flexibility of children, the regulation of exercise load in physical education classes of I-IV grades, the regulation of exercise load for boys aged 11-14. There is a need to improve the methods of application of tools and methods used in the development of physical qualities of students in grades 5-9, taking into account their age.

In our country, the development of physical culture and sports is considered at the level of state policy, which is used as a guaranteed means of strengthening the nation's gene pool, educating a generation of physical and intellectual potential and strategically important in promoting the ideas of national independence. Today, one of

the priorities is to "mobilize all the forces and capabilities of our state and society for the development of our young people as independent thinkers, with high intellectual and spiritual potential, who will not be idle to their peers in any field around the world." Especially from the elementary grades, the education of students as a comprehensively healthy, independent-minded person with high intellectual and spiritual potential is emphasized as one of the current issues.

**The degree to which the problem has been studied.** The study of scientific and methodological literature of domestic and foreign scientists shows that a number of scientific studies on physical education aimed at health. Including T.S.Usmankhodjaev, S.V.Rybalkina, V.K.Balsevich, L.I.Lubysheva, Yu.F.Kuramshin, V.A.Bogdanova, G.V. The works of Julina, NI Chukturova, LI Lubysheva, AN Kondratev, VA Baranov and others can be cited.

RS Salomov studied the age-specific features of physical development and readiness of schoolchildren, TS Usmonkhodjaev studied the scientific and pedagogical basis of the relationship between physical activity and physical development of children, P.Kh. Khodjaev studied the development of physical qualities of students VI-VII, HH Soliev conducted research on the development of muscle strength in boys aged 7-12 with different body composition and development options, AT Sodiqov conducted research on the regulation of exercise load in physical education classes of students of I-IV grades, B.G. Boyboboev on the regulation of workload for boys aged 11 to 14 years in physical education classes, OV Goncharova highlighted the means and methods of developing children's qualities of strength, agility, endurance, flexibility.

V.P.Filin, V.G.Nikitushkin, L.V.Volkov, V.E.Kotevshov, T.Bompa Tajibaev S.S. and other experts have developed a methodology for planning training loads that takes into account the age characteristics of children.

As a result of the analysis of scientific and methodological literature to determine the age-specific features of physical development of students in grades 5-9, to determine the age-specific features of the development of physical qualities of students in grades 11-15, to determine the age-specific characteristics of students in grades 11-15 (strength, speed, There is a need to conduct research to improve the methodology for the development of physical qualities and to analyze in practice the effectiveness of the methodology for the development of physical qualities in the physical education classes of students in grades 5-9 studying in secondary schools.

The purpose of the study is to improve the methodology for developing the physical qualities of students in grades 5-9.

### Tasks of the research

Determining the age-specific characteristics of physical development and physical fitness of schoolchildren in grades 5-9;

Improving the methodology for developing the physical qualities (strength, speed, endurance) of 11-13-year-old schoolchildren studying in secondary schools;

**Table 1** Annual physical fitness of 11-year-old school students dynamics (n=256)

T/ P	Control exercises and unit of measurement	OYB		OYO		The difference	%	t	p
		X±σ	V%	X±σ	V%				
1.	Running 60 m (seconds)	12,3±1,3	10,5	12,2±1,1	9,0	0,1	9,18	1,14	>0,05
2.	Running 1500 m (minutes and seconds)	10,20±0,59	5,7	10,08±0,51	5,0	0,12	8,82	1,35	>0,05
3.	Pulling on a horizontal bar (times)	3,4±0,44	14,6	4,2±0,40	10	1	3,33	1,24	>0,05
4.	Running and long jump (cm)	160,1±8,51	6,0	171,6±7,12	4,7	10	7,14	1,67	>0,05
5.	Long jump (cm)	122,4±6,24	5,2	133,7±5,56	4,2	10	8,33	1,53	>0,05
6.	Throwing a tennis ball (meter)	16,7±1,2	7,5	17,8±1,0	5,8	1	6,25	1,21	>0,05

**Note:** OYO - at the beginning of the academic year, OYO - at the end of the academic year.

Improving the methodology for developing the physical qualities of schoolchildren aged 14-15 (strength, speed, endurance);

to analyze in pedagogical practice the effectiveness of the methodology of developing physical qualities of school students (11-15 years) in physical education classes.

At the beginning of the school year, 11-year-old secondary school students ran  $12.3 \pm 1.3$  seconds in the 60-meter dash (see Table 1). At the end of the school year, the average was  $12.2 \pm 1.1$  seconds. It was found that the annual growth difference in the results of physical training of students of this age was 0.1 cm (9.18%). There is no reliability of statistical differences between the indicators ( $r > 0.05$ ).

1500 m of 5th grade students. The distance running control test results were found to vary by an average of  $10.20 \pm 0.59$  minutes V 5.7% at the beginning of the school year and  $10.08 \pm 0.51$  minutes at the end of the school year V 5.0% (see Table 1). 1500 m. there is no statistical difference

reliability between the indicator in the long-distance control exercise ( $r > 0.05$ ).

While the results of tests to determine the state of development of strength quality were on average  $3.4 \pm 0.44$  times at the beginning of the year under the conditions of traction on the horizontal bar, by the end of the year these results were observed with a difference of 1 to  $4.2 \pm 0.40$  and 3.33% increased.

Running and long jump control exercises were performed on 12.1-year-old students at the beginning of the year at  $160.1 \pm 8.51$  cm. at the end of the year, an increase of 7.14% to  $171.6 \pm 6.32$  cm.

In the long jump control exercise, the average result was  $122.4 \pm 6.24$  cm at the beginning of the year and  $133.7 \pm 5.56$  cm at the end of the school year. These results do not meet the requirements of Alpomish and Barchinoy test standards.

V% 5.8, which increased from  $16.7 \pm 1.2$  m to  $17.8 \pm 1.0$  m when receiving tennis ball throwing control exercises from students.

**Table 2** Annual of physical fitness of 12-year-old school students dynamics (n=272)

T/p	Control exercises and unit of measurement	OYB		OYO		Differen ce	%	t	P
		X±σ	V%	X±σ	V%				
1.	Running 60 m (s)	12,1±1,7	14,0	12,0±1,5	12,5	0,1	9,17	1,24	>0,05
2.	Running 1500 m (minutes and seconds)	10,14±1,1	10,8	10,08±0,59	5,8	0,06	9,40	1,41	>0,05
3.	Pulling on a horizontal bar (times)	4,3±0,56	14	5,4±42	8,4	1	125	1,25	>0,05
4.	Running and long jump (cm)	187,1±7,45	4,9	194,8±6,32	3,8	14	9,33	1,69	>0,05
5.	Long jump (cm)	121,3±6,58	5,4	124,7±5,35	4,3	4	3,33	1,49	>0,05
6.	Throwing a tennis ball (meters)	17,4±1,5	8,8	18,5±1,2	6,4	1,5	8,82	1,85	>0,05

**Note:** OYO - at the beginning of the academic year, OYO - at the end of the academic year.

In special tests "Alpomish" and "Barchinoy" 1500 m. 10.00 minutes in long-distance running, 160 cm in running and long jump, and 20 m in throwing a tennis ball. If there was an account, students would meet these conditions at the end of the school year at 1500 m. 10.08 minutes in distance running, 150 cm in running and long jump, and 17 m in throwing a tennis ball. performed with results. There is no statistical difference reliability between the indicators.

At the beginning of the school year, the results of high school 12-year-olds running in the 60 m distance were  $12.1 \pm 1.7$  seconds (see Table 2). At the end of the school year, this figure averaged  $12.0 \pm 1.5$  seconds. It was found that the annual growth difference in the results of physical training of students of this age was 0.1 cm (9.17%). There is no reliability of statistical differences between the indicators ( $r > 0.05$ ).

1500 m from 6th grade students. when distance running control tests were taken, the results were found to vary by an average of  $10.14 \pm 0.08$  minutes at the beginning of the school year and 10.8% at the end of the school year by  $10.08 \pm 0.59$  minutes (see Table 2). 1500 m. there is no statistical difference reliability between the indicator in the long-distance control exercise ( $r > 0.05$ ).

While the results of tests to determine the state of development of force quality were  $4.3 \pm 0.56$  times on average at the beginning of the year under traction conditions on the horizontal bar, by the end of the year these results were observed with a difference of 1,  $5.4 \pm 42$  pulls and increased by 125%.

Running and long jump control exercises were performed at 12.1-year-old students at the beginning of the year at 187.1

$\pm 7.45$  cm. can be seen to have increased by 9.33% to  $194.8 \pm 6.32$  cm at the end of the year.

In the long jump control exercise, the average result was  $121.3 \pm 6.58$  cm at the beginning of the year and  $124.7 \pm 5.35$  cm at the end of the school year. These results do not meet the requirements of Alpomish and Barchinoy test standards.

V% 6.4, which increased from  $17.4 \pm 1.5$  m to  $18.5 \pm 1.2$  m when receiving control exercises for throwing a tennis ball from students.

The following results were obtained from studies conducted to determine the age-specific dynamics of physical development of 11-15-year-old schoolchildren.

The dynamics of specific physical development indicators of different advanced students were studied. The results from the school's 8th grade students 'physical development length measurements averaged  $157.9 \pm 4.7$  cm at the beginning of the school year (see Table 3). At the end of the year, the process of physical development increased by  $159.1 \pm 3.1$  cm. The results showed a difference of 1.2 cm during the year. Even in the above results, there is no reliability of differences between physical development indicators ( $r > 0.05$ ).

**Table 3** Indicators of physical development of 14-year-old schoolchildren

T/ p	Indicators	14 age						
		OYB		OYO		Difference	t	p
		X±a	V%	X±a	V%			
1.	Height	157,9±4,7	2,9	159,1±3,1	1,9	1,2	1, 38	>0,05
2.	Weight	45,9±2,5	5,4	48,6±1,9	3,9	2,7	1,14	>0,05
3.	Chest circumference	73,1±3,8	5,1	75,8±2,7	3,5	2,7	1,61	>0,05

Physical development indicators also vary with age. According to the developmental processes of body weight of 14-year-old students, the average body weight of students at the beginning of the school year was  $45.9 \pm 2.5$  kg. At the end of the academic year, this figure increased to  $48.6 \pm 1.9$  kg. The rate of physical development and weight gain of students of this age varied by an annual growth difference of 5.88 kg (5.88%).

Using pedagogical observations, we measured the physical development of 8th grade students with different body types,

at the beginning of the school year the length of the chest circumference of students was  $73.1 \pm 3.8$  cm, and at the end of the school year this average was  $75.8 \pm 2.7$  cm. The annual growth difference in the physical development indicators of students of this age was found to be 2.7 cm (3.69%). There is no reliability of statistical differences between the indicators ( $r > 0.05$ ).

Examination of 15-year-old schoolchildren revealed patterns of age-related changes in morpho-functional development of students (see Table 4).

**Table 4** Indicators of physical development of 15-year-old schoolchildren

T/ p	Indicators	OYB		OYO		Difference	t	p
		X±a	V%	X±a	V%			
1.	Height	157,8±5,1	3,2	160,2±3,9	2,4	2,4	1, 84	>0,05
2.	Weight	49,9±3,2	6,4	53,2±2,1	3,9	3,3	2,92	<0,05
3.	Chest circumference	76,4±4,4	5,7	78,1±3,0	3,8	1,7	1,34	>0,05

Body length indicators increase regularly with age. At the beginning of the academic year, this figure was  $157.8 \pm 5.1$  cm, while at the end of the year it was  $160.2 \pm 3.9$  cm.

In 9th grade students, body weight indexes increase with age. The developmental processes of students by body weight were studied. According to him, the average weight of students at the beginning of the school year was  $49.9 \pm 3.2$  kg. At the end of the academic year, this figure increased to  $53.2 \pm 2.1$  kg. The annual difference in body weight gain rates of physical development of students of this age varied by 3.3 kg (6.61%). There is no reliability of statistical differences between the indicators ( $r > 0.05$ ).

When measuring the physical development of 15-year-old students in schools, at the beginning of the school year the length of the chest circumference of students was  $76.4 \pm 4.4$  cm, and at the end of the school year this figure averaged  $78.1 \pm 3.0$  cm. The annual growth difference of the physical development indicators of students of this age was found to be 1.7 cm (2.25%). There is no reliability of statistical differences between the indicators ( $r > 0.05$ ).

### Methodology

The methodology of using complex exercises in the development of physical qualities of schoolchildren aged 11-15 years has been improved as follows (see Table 5).

In the experimental group, programs were developed to engage in exercise. These programs included a set of exercises aimed at developing backward physical qualities. The scheme of organization of this type of training is given in the second chapter.

A set of exercises that develop strength and speed-strength qualities. Lying face down on the floor, leaning on a bench with numbers, arms bent - writing (the same exercise, leaning on the bench with legs, same, but leaning on the bench with the tip of the foot, every time the chest touches the floor for a moment) exercise intensity and size we found that after the applied exercise, the participants' IUD

readings averaged around  $142 \pm 6.15$  beats per minute in 11-12-year-olds. The mean is  $145 \pm 7.21$  strokes in 13-14 year olds and around  $149 \pm 4.12$  strokes in 15 year olds. Exercises last from 50 to 70 seconds, depending on age. The number of performances was 11-12 years old 5-6 times, 12-13 year olds 7-8 times, 15 year olds 9-10 times.

Depending on the wall, it stands at a distance of 0.5 meters. The arms are bent (while falling forward and being pushed off the wall). Each time you should feel your forehead lightly touch the wall. After the applied exercises, the participants' IUDs averaged around  $144 \pm 9.05$  beats per minute in 11-12 year olds. The mean is  $131 \pm 6.42$  strokes in 13-14 year olds and  $146 \pm 8.01$  strokes in 15 year olds. Exercises last from 50 to 70 seconds, depending on age. The number of performances was 6-7 times for 11-12 year olds, 8-9 times for 12-13 year olds, and 10-11 times for 15 year olds.

Students lie face down on the floor in the following exercise. The hands are written on two sides, respectively, and d.h. returns (but lying down). Post-workout IUD readings averaged around  $148 \pm 7.54$  beats per minute in 11-12 year olds. The average is  $142 \pm 10$  strokes in 13-14 year olds and around  $154 \pm 6.15$  strokes in 15 year olds. Exercises last from 50 to 70 seconds, depending on age. The number of performances is 7-8 times for 11-12 year olds, 9-10 times for 12-13 year olds, and 11-12 times for 15 year olds.

Lying on his back, holding the stuffing ball (3 kg), the arms were raised. The ball bends forward until it touches the toes (feet should be straight). You need to feel the ball touch your toes. In this exercise, the UCD readings averaged around  $149 \pm 5.85$  beats per minute in 11-12-year-olds. The average is  $132 \pm 10.24$  strokes in 13-14 year olds and around  $150 \pm 8.12$  strokes in 15 year olds. Exercises last for 50-80 seconds, depending on age. The number of performances is 4-6 times for 11-12 year olds, 7-9 times for 12-13 year olds, and 10-11 times for 15 year olds.

**Table 5** A set of exercises that develop the quality of strength of schoolchildren aged 11-15

№	Назорат машқлари	11-12 age	13-14 age	15 age	11-12 age	13-14 age	15 age	11-12 age	13-14 age	15 age
		Number of repetitions (March)			Time to continue (seconds)			Heart rate (dice / min)		
1.	Lying face down on the floor, he leans on a bench with numbers. The arms are bent - written (the same exercise, leaning on the bench with the legs, same, but leaning on the bench with the tip of the foot). Every time you feel your chest touch the floor for a moment.	5-6	7-8	9-10	70-80	60-70	50-60	$142 \pm 6,15$	$145 \pm 7,21$	$149 \pm 4,12$
2.	Depending on the wall, it stands at a distance of 0.5 meters. The arms are bent (while falling forward and being pushed off the wall). Each time you should feel your forehead lightly touch the wall.	6-7	8-9	10-11	70-80	60-70	50-60	$144 \pm 9,05$	$151 \pm 6,42$	$146 \pm 8,01$
3.	Lie face down on the floor. The hands are written on two sides, respectively, and d.h. returns (but lying down).	7-8	9-10	11-12	70-80	60-70	50-60	$148 \pm 7,54$	$142 \pm 10$	$154 \pm 6,15$
4.	Lying on his back, the arms holding the stuffing ball (3 kg) were raised. The ball bends forward until it touches the toes (feet should be straight). You need to feel the ball touch your toes.	4-6	7-9	10-11	70-80	60-70	50-60	$149 \pm 5,85$	$152 \pm 10,24$	$150 \pm 8,12$
5.	Leaning in front of the "gravity device". The shock absorber is pulled as much as possible.	4-6	7-9	10-11	70-80	60-70	50-60	$146 \pm 5,14$	$153 \pm 5,74$	$155 \pm 9,21$

6.	Sitting, the ball is between the legs. Squeeze the ball with your feet, rise to the top and return to the d.h. (but the legs holding the ball are placed left - right, respectively)	7-8	9-10	11-12	70-80	60-70	50-60	148±8,35	155±5,36	143±7,24
7.	Lie on your stomach, arms across your body. Leaning on the bed in a bent position (same, but not leaning with the hands, same, but the ball stands between the legs).	6-7	8-9	10-11	70-80	60-70	50-60	145±12	151±9	149±8
8.	The partners lie on their backs, one squeezing the other's legs under his armpits. One lifts his legs, the other his body alternately. Then the place changes.	10-12	13-15	16-18	70-80	60-70	50-60	143±5,86	156±7,21	151±5,25
9.	One of the partners leans on the hand and the other on the ball. The ball is forced down from his partner.	20-25	25-30	30-35	70-80	60-70	50-60	156±7,15	150±6,12	147±4,98

Leaning in front of the "gravity device". The shock absorber is pulled as much as possible. In the following exercise, YQS values averaged around  $146 \pm 5.14$  beats per minute in 11–12-year-olds. The average is  $133 \pm 5.74$  strokes in 13-14 year olds and around  $155 \pm 9.21$  strokes in 15 year olds. Exercises last for 50-80 seconds, depending on age. The number of performances is 4-6 times for 11-12 year olds, 7-9 times for 12-13 year olds, and 10-11 times for 15 year olds.

Sitting, the ball is between the legs. Squeezing the ball with the feet, it rises to the top and returns to the d.h. (but the legs holding the ball are placed left-to-right, respectively). UPS readings averaged around  $148 \pm 8.35$  beats per minute in 11-12 year olds. The mean is  $135 \pm 5.36$  strokes in 13-14 year olds and  $143 \pm 7.24$  strokes in 15 year old trainees. Exercises last for 50-80 seconds, depending on age. The number of performances is 7-8 times for 11-12 year olds, 9-10 times for 12-13 year olds, and 11-12 times for 15 year olds.

Lie on your stomach, arms across your body. Leaning on the bed in a bent position (same, but not leaning with the hands, same, but the ball stands between the legs). UPS readings average around  $145 \pm 12$  beats per minute in 11-12 year olds. The average is  $151 \pm 9$  strokes in 13-14 year olds and  $149 \pm 8$  strokes in 15 year olds. Exercises last for 50-80 seconds, depending on age. The number of performances is 6-7 times for 11-12 year olds, 8-9 times for 12-13 year olds, and 10-11 times for 15 year olds.

The partners lie on their backs, one squeezing the other's legs under his armpits. One lifts his legs and the other his body alternately. Then the place changes. UPS readings averaged around  $143 \pm 5.86$  beats per minute in 11–12-year-olds. The average is  $136 \pm 7.21$  strokes in 13-14 year olds and around  $151 \pm 7.25$  strokes in 15 year olds. Exercises last

for 50-80 seconds, depending on age. The number of performances is 10-12 times for 11-12 year olds, 13-15 times for 12-13 year olds, and 16-18 times for 15 year olds.

One of the partners leans on the hand and the other on the ball. The ball is forced down from his partner. UPS readings average around  $156 \pm 7.15$  beats per minute in 11-12 year olds. The average is  $13 \pm 6.12$  strokes in 13-14 year olds and  $147 \pm 4.98$  strokes in 15 year olds. Exercises last for 50-80 seconds, depending on age. The number of performances is 20-25 times for 11-12 year olds, 25-30 times for 12-13 year olds, and 30-35 times for 15 year olds.

The results of an experiment to determine the effectiveness of an improved methodology for developing the physical qualities of 11-15-year-old school students were as follows (see Table 6).

In assessing the quality of speed, 11-year-old schoolchildren used a 60 m running control exercise. According to him, the pre-pedagogical results of 11-year-old students in the experimental group averaged  $12.5 \pm 1.3$  seconds. The results of the 60-meter dash of 11-year-old schoolchildren in the control group averaged  $12.4 \pm 1.8$  seconds. There is no reliability of statistical differences between the indicators ( $r > 0.05$ ).

Following a pedagogical experiment conducted to determine the effectiveness of the developed complex exercises, the increase in the quality of speed in 11-year-old schoolchildren was as follows. The speed quality of the students in the experimental group was 18.2% and the speed quality of the students in the control group was 9.3%. The reliability of the statistical differences between the indicators is  $r < 0.05$ .

The above results indicate that 11-year-old schoolchildren have a well-distributed set of complex exercises designed to develop speed and quality.

**Table 6** Annual dynamics of physical fitness of 11-year-old schoolchildren

T/p	Control exercises and unit of measurement	TG n=34		NG n=37		Difference	%	t	p
		X±σ	V%	X±σ	V%				
1.	Running 60 m (seconds)	$\frac{12,5 \pm 1,3}{10,8 \pm 0,84}$	$\frac{10,4}{7,77}$	$\frac{12,4 \pm 1,8}{11,9 \pm 1,2}$	$\frac{10,1}{10,9}$	$\frac{9,2}{0,18}$	$\frac{0,80}{10,18}$	$\frac{1,15}{2,54}$	$\frac{>0,05}{<0,05}$
2.	Running 1500 m (minutes and seconds)	$\frac{10,08 \pm 0,56}{9,20 \pm 0,59}$	$\frac{5,55}{6,41}$	$\frac{10,12 \pm 0,45}{10,04 \pm 0,51}$	$\frac{5,03}{5,07}$	$\frac{0,04}{0,84}$	$\frac{0,39}{9,13}$	$\frac{1,35}{2,65}$	$\frac{>0,05}{<0,05}$
3.	Pulling on a horizontal bar (times)	$\frac{3,5 \pm 0,44}{4,9 \pm 0,21}$	$\frac{14,6}{5}$	$\frac{3,1 \pm 0,40}{3,4 \pm 1,02}$	$\frac{12,9}{30}$	$\frac{0,1}{0,8}$	$\frac{3,33}{23,52}$	$\frac{1,24}{2,84}$	$\frac{>0,05}{<0,05}$

4.	Running and long jump (cm)	$\frac{160,5 \pm 8,51}{194,2 \pm 6,51}$	$\frac{5,82}{4,89}$	$\frac{162,5 \pm 7,12}{182,6 \pm 6,41}$	$\frac{4,97}{4,10}$	$\frac{3}{18}$	$\frac{2,09}{11,53}$	$\frac{1,67}{3,67}$	$\frac{>0,05}{<0,01}$
5.	Long jump (cm)	$\frac{122,9 \pm 6,24}{156,7 \pm 4,12}$	$\frac{4,69}{2,64}$	$\frac{123,4 \pm 5,56}{138,2 \pm 6,41}$	$\frac{4,27}{4,64}$	$\frac{3}{18}$	$\frac{2,30}{13,04}$	$\frac{1,53}{3,53}$	$\frac{>0,05}{<0,01}$
6.	Throwing a tennis ball (meter)	$\frac{16,4 \pm 1,2}{22,3 \pm 1,4}$	$\frac{6,62}{5,76}$	$\frac{16,8 \pm 1,3}{19,6 \pm 1,9}$	$\frac{7,30}{9,69}$	$\frac{0,3}{4,7}$	$\frac{1,68}{23,97}$	$\frac{1,21}{3,21}$	$\frac{>0,05}{<0,01}$

**Note: TG - experimental group, NG - control group.**

Although our pedagogical observations show that there are some differences in the level of physical fitness of students on the horizontal bar, the arithmetic analysis does not show a significant difference between the boys of the experimental and control groups, reliability ( $r > 0.05$ ).

As can be seen, at the beginning of the pedagogical study, there was no difference in the initial results on physical development and functional preparation in students.

While the results of the power quality test were  $3.5 \pm 0.44$  times at the beginning of the year in the experimental group under the conditions of pull-ups on the horizontal bar, by the end of the year these results were observed to be  $4.9 \pm 0.21$  with a difference of 1.4. Increased by 3.33% ( $r < 0.05$ ).

In the pedagogical observation, the result of the long jump control exercise was  $123.4 \pm 5.56$  cm at the beginning of the year and  $138.2 \pm 6.41$  cm at the end of the school year. These results do not meet the requirements of Alpomish and Barchinoy test standards. Our pedagogical observations The following results were obtained in the long jump control exercise on the ground according to the studied parameters. In the boys in the experimental group, the results were  $122.9 \pm 6.24$  cm before the experiment and  $156.7 \pm 4.12$  cm after the experiment, with a difference of 33.8 cm ( $r < 0.05$ ).

The results of the boys in the control group were almost the same, i.e.  $160.5 \pm 8.51$  cm and  $143 \pm 7.12$  cm reliability ( $r > 0.05$ ), provided that the pedagogical experience ran long

jump among boys. The result of the indicators in the same exercise was  $194.2 \pm 8.51$  cm in the experimental group and  $182.6 \pm 6.41$  cm in the control group. The difference between the results is 9.6 cm. Results increased sharply ( $r < 0.05$ ).

While the mean score of the students in the control group performing the tennis ball throwing control exercise was  $16.8 \pm 1.3$  m, after the study it changed to  $19.6 \pm 1.9$  m, where no substantial changes were observed ( $r > 0.05$ ).

There were reliable changes in the tennis ball throwing test in the students in the experimental group: at the beginning of the study, the readings were  $16.4 \pm 1.2$  meters, while at the end of the study, the readings were  $22.3 \pm 1.4$  meters.

**Table 7** Annual dynamics of physical fitness of 14-year-old schoolchildren

T/p	Назорат машқлари ва ўлчам бирлиги	TG n=34		NG n=37		Difference	%	t	p
		$X \pm \sigma$	V%	$X \pm \sigma$	V%				
1.	Running 60 m (seconds)	$\frac{11,6 \pm 1,8}{10,7 \pm 0,9}$	$\frac{15,5}{11,2}$	$\frac{11,4 \pm 1,6}{11,1 \pm 0,6}$	$\frac{14,0}{13,5}$	$\frac{0,2}{0,4}$	$\frac{0,12}{9,17}$	$\frac{2,42}{3,62}$	$\frac{>0,05}{<0,05}$
2.	Running 2000 m (minutes and seconds)	$\frac{11,50 \pm 1,3}{11,13 \pm 0,6}$	$\frac{11,3}{14,6}$	$\frac{11,52 \pm 1,1}{11,34 \pm 0,3}$	$\frac{9,7}{9,3}$	$\frac{0,2}{0,8}$	$\frac{0,42}{8,17}$	$\frac{2,46}{3,76}$	$\frac{>0,05}{<0,05}$
3.	Pulling on a horizontal bar (times)	$\frac{4,1 \pm 0,76}{5,9 \pm 0,89}$	$\frac{19}{6,1}$	$\frac{3,9 \pm 0,55}{4,4 \pm 0,21}$	$\frac{11}{16,7}$	$\frac{0,1}{0,9}$	$\frac{3,35}{12,15}$	$\frac{2,35}{3,95}$	$\frac{>0,05}{<0,05}$
4.	Running and long jump (cm)	$\frac{172,7 \pm 8,75}{197,5 \pm 4,32}$	$\frac{5,4}{3,3}$	$\frac{173,4 \pm 6,32}{180,9 \pm 4,84}$	$\frac{3,7}{3,1}$	$\frac{8}{12,4}$	$\frac{2,12}{10,53}$	$\frac{2,78}{4,78}$	$\frac{>0,05}{<0,01}$
5.	Long jump (cm)	$\frac{149,1 \pm 6,80}{163,9 \pm 4,45}$	$\frac{4,6}{2,7}$	$\frac{151,2 \pm 5,12}{157,8 \pm 3,01}$	$\frac{3,3}{3,89}$	$\frac{10}{16,1}$	$\frac{2,45}{11,03}$	$\frac{2,64}{4,64}$	$\frac{>0,05}{<0,01}$
6.	Throwing a tennis ball (meter)	$\frac{24,1 \pm 2,2}{28,3 \pm 1,02}$	$\frac{8,1}{5,7}$	$\frac{23,9 \pm 2,0}{25,3 \pm 2,2}$	$\frac{7,1}{9,8}$	$\frac{0,1}{4,2}$	$\frac{1,64}{15,41}$	$\frac{2,32}{4,34}$	$\frac{>0,05}{<0,01}$

**Note: TG - experimental group, NG - control group.**

The levels of development of physical abilities of 8th grade students in many ways determine their ability to work in the test exercises being analyzed.

In the test standards for assessing the quality of speed of students in this class, a 60 m running control exercise was used. According to him, the pre-pedagogical results of 14-year-old students in the experimental group averaged  $11.6 \pm 1.8$  seconds. In the control group, the results of running 60 m were averaged  $11.4 \pm 1.6$  seconds. There is no reliability of statistical differences between the indicators ( $r > 0.05$ ).

Following a pedagogical experiment conducted to determine the effectiveness of the developed complex exercises, the increase in the quality of speed in 14-year-old schoolchildren was as follows. The speed quality of the students in the experimental group improved by 9.17%, and the speed quality of the students in the control group improved by 0.12%. The difference in readings is 0.4 seconds. Reliability ( $r < 0.05$ ).

The experimental group of long jump control exercises in 14-year-old students at the beginning of the year was  $172.7 \pm 8.75$  cm. increased by 12.4% to  $197.5 \pm 6.32$  cm at the end of the year.

V% 9.8% increased from  $24.1 \pm 2.2$  m to  $28.3 \pm 1.02$  m when receiving tennis ball throwing control exercises from students.

In the special tests of Alpomish and Barchinoy 2000 m. 11.52 minutes in long-distance running, 173 cm in running and long jump, and 23.9 m in throwing a tennis ball. If there was an account, students would meet these conditions at the end of the school year at 2000 m. 11.13 minutes in long-distance running, 197.5 cm in running and long jump, and 28.3 m in throwing a tennis ball. performed with results. It can be seen that the statistical difference between the indicators has increased.

Students in the experimental group confidently improved their physical performance.

## Conclusion

The analysis of the scientific and methodological literature led to the following important conclusions:

1. According to experts and leading scientists in the field, it is in school age that full physical development and the development of physical qualities take place between the ages of 11 and 15. During this period, according to the authors, the necessary motor skills are especially well developed and strengthened in children.
2. The following conclusions were drawn from the research on the analysis of methods of educating the physical qualities of schoolchildren. According to him, we have witnessed a lot of research on the selection and implementation of tools that stimulate the physical development of schoolchildren aged 11-15 and develop their physical qualities. However, there is a need to develop the intensity and scope of the use of tools and methods used in the development of physical qualities of 11-15-year-old schoolchildren in physical education classes, taking into account the age characteristics of the participants.
3. An analysis of the literature on the study of specific physical fitness of school-age children during puberty led to the following conclusions:

- In most of the data of anthropologists reveal the laws of physical development of children, their morphological and functional characteristics, age-related aspects of the development of physical qualities. Second childhood - boys 8-12 years; Adolescence - physiologists note that boys are 13-16 years old.

4. Alpomish "and" Barchinoy "special control standards 2000 m. 11.05 minutes in distance running, 160 cm in running and long jump, and 27 m in throwing a tennis ball. If there is an account, students will meet these control standards at the end of the school year at 2000 m. 11.03 minutes on average in long-distance running, 168 cm on average in running and long jump, and 28 m on average in throwing a tennis ball. performed with results. There is no statistical difference reliability between the indicators.

5. It is necessary to develop a methodology for students with different physical fitness to maintain their health and strengthen their general physical fitness during physical education classes.

6. From the above data, it was found that insufficient scientific research has been conducted on the use of tools and methods used in the development of physical qualities of schoolchildren aged 11-15. The obtained data confirm the idea that it is necessary to develop a set of complex exercises in the development of children's physical qualities in overcoming the indicated resistance.

7. According to the results of the analysis of scientific and methodological literature, in the process of physical education classes in grades 8-9 there is a need to develop tools and methods used to teach students movement skills and develop physical abilities based on the age characteristics of participants.

8. 2000 m at the special control standards "Alpomish" and "Barchinoy". 11.01 minutes for distance running, 170 cm for running and long jump, and 30 m for throwing a tennis ball. If there is an account, students will meet these control standards at the end of the school year at 2000 m. 10.09 minutes on average in long-distance running, 190 cm in running and long jump, and 33.4 m in throwing a tennis ball. performed with results. There is no statistical difference reliability between the indicators.

9. It is necessary to develop a methodology for students with different physical fitness to maintain their health and strengthen their general physical fitness during physical education classes.

10. Assessment of strength capabilities on the traction indicators on the horizontal bar showed that the experimental group performed  $3.7 \pm 0.76$  times and the control group  $3.8 \pm 0.55$  times. The students were able to meet the norm close to the "target". It shows that the level of physical fitness of some students is not high.

After the experiment, the results changed significantly. The experimental group reported  $4.9 \pm 0.76$  times and the control group  $4.1 \pm 0.55$  times. The difference between the figures is 0.8 March. Reliability ( $r > 0.05$ ).

The above results show that 14-year-old schoolchildren have the correct distribution of complex exercises developed in the development of strength quality.

Although the results of our long-distance running tests from our pedagogical observations show that there is some relative difference in the level of physical fitness of students, arithmetic analysis does not show a significant

difference between the boys of the experimental and control groups under study.

The results of tests to determine the state of development of agility were  $172.4 \pm 6.75$  meters in the experimental group at the beginning of the year in the conditions of running and long jump, while at the end of the year these results were  $187.4 \pm 8.75$  meters with a difference of 0.8 and increased by 3.33% ( $r < 0.05$ ).

## References

- [1] Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated October 25, 2018 No 864 "On further improving the system of national sports competitions among schoolchildren and students." Lex.uz
- [2] Achilov A.M., Akramov J.A., Goncharova O.V. Nurturing the physical qualities of children. Lider Press Publishing House, Tashkent. 2009. S-198 .; Smurygina L.V. Introduction nauchnyx issledovaniy v lëgkoy athletics. Tashkent, 2013. - 94 p .;
- [3] Balsevich V.K., Lubysheva L.I. Fizicheskaya kultura: molodej i sovremennost // Teor. and practice. phys. cult, - T., 1995.-2-7 p.
- [4] Baranov V.A. Methodology of uchebnotrenirovochnogo process of plovtsov at the stage of nachalnoy podgotovki on the basis of differentiated podkhoda. Autoref. dis. kan. ped. science. Tambov, 2012. - 22 p.
- [5] Bogdanova V.A. Differentiated approach to physical education of young schoolchildren. Autoref. dis. kan. ped. science. Tyumen, 2001. - 22 p.
- [6] Boyboboiev B.G. Standardization of workload for boys aged 11-14 in physical education classes. 1999 y. P. 162, OV Goncharova Nurturing children's physical qualities. Study guide. Tashkent - 2015, 204 - p.
- [7] Volkov L.V. Sporty preparation of children and teenagers. - K .: Veja, 1998. - p. 190 .;
- [8] Julina G.V. K probleme zdorovya i zdorovogo obraza jizni cheloveka // Problemy zdorovya cheloveka. Development of physical culture and sports in modern conditions: Materials of the interregional scientific-practical conference, dedicated to the 55th anniversary of FGC SGU. - Stavropol: Izdvo - SGU., 2002. - C. 179 - 181 .;
- [9] Koteshev V.E. Methodology of management of adaptation of sportsmen to special motor activities in sports. Autoref. diss.... Dr. ped.nauk./V.E. Koteshev. - Krasnodar, 1998. - 45 p.
- [10] Kuramshin Yu.F. Methods of teaching motor skills and development of physical qualities: Theory and technology of application. Uchebnoe posobie. - SPb., 1998; -s. 2-7.,
- [11] Lubysheva L.I., Kondratev A.N. Zdorove formiruyushchaya technology fizicheskogo vospitaniya mladshix shkolnikov na osnove ispolzovaniya traditsionnogo karate // Fizicheskaya kultura: vospitanie, obrazovanie, trenirovka, №3. - M., 2006. - p. 5-13.
- [12] Preparation of young champions: Per. s angl. / T.Bompa-M .: OOO "Izdatelstvo Astrel": OOO "Izdatelstvo AST", 2003.-XII, 259, (1) p .: il.
- [13] Rybalkina S.V. Vybór sredstv fizicheskoy podgotovlennosti shkolnikov na osnove ucheta ix ozdorovitelnoy effektivnosti: Avtoref. dis. kan. ped. science. - Malaxovka, 1996. -18p.
- [14] Salomov R.S. Methods used in sports exercises. T., Uzavtotranstexnika. 1991, 31 p.
- [15] System of preparation of sports reserve / Under obshch. Red. V.G. Nikitushkina - M., 1994. -319 p.
- [16] Sodiqov A.T. Standardization of exercise load in physical education classes of I-IV grades. ped. fan. nom. dis. T.1997, 130 p.,
- [17] Soliev X.X. Development of muscle strength in 7-12 year old boys with different body composition type and developmental options. ped. fan. nomz. dis. T.1997, 130 p.,
- [18] Usmanxodjaev T.S. Nauchno-pedagogicheskie osnovy fizicheskogo

sovershenstvovaniya detey v svyazi s ix dvigatelnoy aktivnostyu. Autoref. dis. d-ra ped. science. - T., 1995. - 42 p.

- [19] Usmonxo'jaev T.S. Nauchno-pedagogicheskie osnovy fizicheskogo sovershenstvovaniya detey v svyazi s ix dvigatelnoy aktivnostyu: Avtoref. dis... d-ra. ped. science. T., 1995, 50 p.
- [20] Filin V.P. Vospitatelnaya rabota s yunymi sportsmenami // Sistema podgotovki sportivnogo rezerva. - M.: VNIIFK, 1994. - C. 57-90.
- [21] Xodjaev P.X. Development of motor skills uchashixsya VI-VII classes of schools in Uzbekistan. dis... kand. ped. science. - T., 1993, 150 p.
- [22] Chukturova N.I. Pedagogicheskie uslovie valeologicheskogo soprovojeniya obrazovatel'nogo protsessa v nachalnoy shkole. Autoref. dis. kan. ped. science. - St. Petersburg, 2004. - 22 p. Tajibaev S.S. Scientific and pedagogical substantiation of the method of using movement games in the complex training of adolescent wrestlers. Author's abstract of the dissertation of the doctor of pedagogical sciences (DSc). Chirchik 2019, 77 pages.