

## INDICATORS OF SPEED PHYSICAL QUALITY OF STUDENTS

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**Abstract.** *The speed of physical training and physical qualities of students is the method of rotational exercises in the acquisition and training of physical qualities.*

**Keywords:** *immunity, physical indicators, physical fitness, agility, physical qualities, pedagogical experience.*

Nowadays, in many countries of the world, raising a healthy generation, developing physical education and sports, and improving the health of the population remain one of the priority directions. The complex processes taking place in the world, in addition to preparing the human body for changes in the external environment, require increasing the activity of all layers of the population, especially students, in order to strengthen the body's immune system. For this purpose, in the world education system, on the basis of the work being carried out to solve general problems related to the determination of ways to increase the importance of the use of approaches such as differentiation and individualization of physical training, a number of differentiated circuit training methods are being used in the practice of physical training of children and young people.

In world practice, a lot of scientific and research work has been carried out on some components that make up innovative educational technologies in the educational process of students studying in higher education institutions, that is, the organization of the educational process taking into account the readiness of students, obtaining and controlling results[1,2,3,4,5,6,7,8].

Issues of improvement of physical development and physical fitness of students of higher educational institutions have been researched. In particular, researchers have scientifically substantiated the issues of forming the right height with the help of special exercises in differentiated circuit training, increasing the mobility of joints, maintaining active work ability, and improving physical fitness indicators at different ages. Taking into account the morphofunctional characteristics of the constitutional type of the students' body, based on the use of modern tools, researches on the problems of improving their physical fitness have not been carried out sufficiently. Today, based on the social conditions in the world, it is important to scientifically substantiate the research aimed at improving movement skills and physical qualities of students using differentiated circular training.

The analysis of the conducted scientific and methodical literature shows that the physical fitness of student boys and girls is noted as a very important problem in the scientific and methodical literature. It should be noted that scientifically based developments on improving the physical fitness of male and female students with the help of differentiated circular exercise methodology have not been analyzed within the scope of possibility [9,10,11,12,13,14,15,16].

If in the traditional organization of the physical education process, insufficient attention is paid to the set of circular exercises, the opposite situations are observed in the differentiated approach. For this reason, despite the fact that a number of studies have been carried out, the

expected result has not yet been achieved. The theoretical and practical solution of the identified contradictions requires the preparation of additional scientific, scientific-methodological developments on the differentiated methodology of developing the physical qualities of students of pedagogical higher educational institutions, their organism development, taking into account the individual characteristics and adequate content of movement activity based on the use of the improved circular training method [17,18,19,20,21,22,23,24].

The object of research is the process of physical education of students of higher educational institutions.

The subject of the study is physical education of students of higher educational institutions qualities.

The purpose of the research is to study the qualities of physical ability of students of higher educational institutions.

In accordance with the purpose, the tasks of the research were determined to determine the physical qualities of the students of higher educational institutions, their interest in physical training and sports.

In the course of research, research methods were used, such as studying the physical qualities of quickness in physical education classes and evaluating them using rotational exercise methods.

Organization of the study: the research was conducted at Fergana State University, in which a total of 236 1-2 stage students aged 17-21 years participated. Experimental studies on improving the physical qualities of university students were organized. Experiments were carried out in physical culture classes of students, in educational sessions of students with different levels of physical qualities, in two phases of three months. At the beginning of the academic year, control tests were conducted in order to find out the state of development of physical qualities of students. Based on the information obtained from control exercises aimed at the development of physical qualities, changes in comparison with previous training were hypothesized. Therefore, these experimental works were planned on the basis of a differentiated training methodology, aimed at developing the physical qualities of the students in the experimental group.

Also, students of Fergana State University, who are non-specialist faculties of physical education, were selected for the experiment. Of the total 161 students selected for the experimental group, 81 were girls and 80 were boys. A total of 75 students (37 girls, 38 boys) were selected for the control group.

The indicators of students in terms of initial physical qualities are presented in the following tables.

Table 1

At the beginning of the pedagogical experiment, indicators of the quality of quickness of students of the control and experimental groups with different physical development

Control tests	Experimental group			Control group			Relative growth %	t	P
	Girls n=81, Boys n=80			Girls n=37, Boys n=38					
	$\bar{X}$	$\sigma$	V %	$\bar{X}$	$\sigma$	V %			

Girls									
60 meter dash (seconds)	12,89	1,63	12,65	12,56	1,53	12,18	2,56	1,06	>0,05
30 meter dash (seconds)	7,40	0,95	12,84	7,80	0,96	12,31	5,41	2,11	<0,05
Standingjump (cm)	31,60	4,84	11,63	32,70	4,87	11,41	2,64	1,14	>0,05
Boys									
100 meter dash (seconds)	17,30	2,04	11,79	17,10	1,95	11,40	1,16	0,51	>0,05
60 meter dash (seconds)	12,80	1,52	11,88	12,50	1,41	11,28	2,34	1,05	>0,5
Standingjump (cm)	38,30	6,15	12,73	37,70	5,86	12,29	1,24	0,51	>0,05

Before the experiment, the difference between the performance of the students of the experimental and control groups in the control tests on the quality of speed was as above. The 60-meter run averaged 12.89 seconds in the experimental group of female students, and 12.56 seconds in the control group (difference of 0.33 milliseconds). The 30-meter sprint showed an average of 7.40 seconds in the experimental group of female students, and an average of 7.80 seconds in the control group of female students (a difference of 0.4 milliseconds). Standing jump was 31.6 centimeters in the experimental group of female students, and 32.7 centimeters in the control group (difference of 1.1 centimeters).

100 meter run average in experimental group student boys 17.30 seconds, the control group showed an average of 17.10 seconds (a difference of 0.2 milliseconds). The experimental group showed an average of 38.30 centimeters in the standing high jump, while the control group showed an average of 37.70 centimeters in the male students. (the difference is 0.6 centimeters).

It was found that the performance of experimental and control group students on all physical qualities before the study was almost the same in female students and male students. (See Table 1).

In physical education classes with students, the motivational principle supporting students was implemented in the process of rotation and corrective exercises, which included teaching methods of self-control of the functional state of one's body during training, willpower to overcome subjective difficulties, and relaxation exercises after physical exertion.

The introduction of the rotational training method for the development of the student body in the pedagogy specialist, the process of solving the tasks of the main part of the training included 10-12 stations.

During the pedagogical experience with students, personal body weight, exercises with various objects, exercises in pairs were widely used. In each session, the students' functional status was monitored according to objective and subjective indicators.

During the period of experimental observations, the number of people who considered physical education as a means of passing the "test" in a higher educational institution decreased by

4 times, while the number of students who wanted to show creativity and initiative increased by 2 times.

The effectiveness of the observed changes was that the content of physical exercise classes was determined taking into account the individual characteristics of students, and this ensured the rapid development of general physical fitness of students studying at a pedagogical higher education institution.

Table 2

The dynamics of changes in the speed quality indicators of experimental and control group students with different physical development during the pedagogical experience (%)

Control tests	At the beginning of the experiment			At the end of the experiment			Relative growth %	t	P
	$\bar{X}$	$\sigma$	V %	$\bar{X}$	$\sigma$	V %			
Experimental group girls n=81									
60 meter dash (seconds)	12,89	1,63	12,65	12,08	1,48	12,25	6,28	3,31	<0,01
30 meter dash (seconds)	7,40	0,95	12,84	6,93	0,84	12,12	6,35	3,34	<0,01
Standing jump (cm)	31,60	4,84	11,63	33,57	4,84	11,11	4,74	2,59	<0,05
Control group girls n=37									
60 meter dash (seconds)	12,56	1,53	12,18	11,87	1,41	11,88	5,40	1,02	>0,05
30 meter dash (seconds)	7,80	0,96	12,31	7,36	0,85	11,55	5,64	2,09	<0,05
Standing jump (cm)	31,60	4,87	11,41	33,57	4,64	10,41	4,40	1,70	>0,05
Experimental group boys n=81									
100 meter dash (seconds)	17,30	2,04	11,79	16,05	1,81	11,28	7,23	4,13	<0,001
60 meter dash (seconds)	12,80	2,81	12,89	12,23	2,86	12,47	5,23	2,56	<0,05
Standing jump (cm)	38,30	6,15	12,73	41,55	6,26	12,14	6,73	3,33	<0,01
Control group boys n=38									
100 meter dash (seconds)	17,10	1,95	11,40	16,22	1,78	10,97	5,15	1,03	>0,05
60 meter dash (seconds)	12,50	1,41	11,28	11,94	1,41	11,81	4,48	1,73	>0,05
Standing high jump (cm)	37,70	5,86	12,29	40,06	6,03	12,05	4,95	1,71	>0,05

The relative indicators of control test exercises obtained for the quality of speed of female students of the experimental group at the beginning and at the end of the study showed that the growth dynamics of running 60 meters was on average 12.89 seconds at the beginning of the experiment and 12.08 seconds at the end of the experiment (the difference was 0.81 milliseconds).

The 30-meter sprint showed an average of 7.40 seconds, and an average of 6.93 seconds at the end of the experiment (a difference of 0.47 milliseconds). The average jump from a standing position was 31.60 centimeters, and the average at the end of the experiment was 33.57 centimeters (difference 1.97 centimeters).

The relative indicators for the quality of the speed of the boys at the beginning and at the end of the study on the control test exercises showed the growth dynamics of running 100 meters on average 17.30 seconds, on average 16.05 seconds at the end of the study (a difference of 1.25 seconds). Standing jump on average 38, 30 centimeters, the average at the end of the study was 41.55 centimeters (the difference was 3.25 centimeters).

The students of the control group were trained according to the program of the educational system, but according to the test taken as physical agility, there was no change in some of their indicators.

#### Summary

1. The results of the pedagogical experiment showed that the physical quality of the female students' speed at the beginning of the experiment was 12.89 seconds on average at the beginning of the experiment and 12.08 seconds at the end of the experiment (the difference was 0.81 milliseconds). The 30-meter sprint showed an average of 7.40 seconds at the beginning of the experiment, and an average of 6.93 seconds at the end of the experiment (a difference of 0.47 milliseconds). Jumping from a standing position was 31.60 centimeters on average at the beginning of the experiment, 33.57 centimeters on average at the end of the experiment (a difference of 1.97 centimeters). 1.25 seconds). The average jump from a standing position was 38.30 centimeters at the beginning of the experiment, and 41.55 centimeters at the end of the study (difference 3.25 centimeters) ( $P < 0.01$ ).

2. According to the results of the pedagogical experiments, the physical fitness of the female students of the control group engaged in traditional training showed an average of 7.80 (seconds) at the beginning of the experiment and 7.36 seconds (difference 0.44 milliseconds) at the end of the study. The standing jump was 31.60 centimeters at the beginning of the experiment and 33.05 centimeters at the end of the study (a difference of 1.45 centimeters) ( $R > 0.05$ ), which indicates an incredible development.

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