

## MENTAL ENLIGHTENMENT SCIENTIFIC – METHODOLOGICAL JOURNAL



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### IMPROVING QUICK STRENGTH QUALITIES IN CADETS BASED ON WARRIOR SAMBO EXERCISES

*Ruslanbek Azatovich Matchanov*

*Head specialist*

*Tashkent city IIBB*

*Tashkent, Uzbekistan*

#### ABOUT ARTICLE

**Key words:** development of general and special physical qualities, technical and tactical training, modification, maintenance of static-dynamic balance, modeling, functional possibility of the controlling vestibular analyzer.

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**Abstract:** Based on the results of pedagogical observation, questionnaire, current research, pedagogical experience and their comparative analysis conducted within the framework of this scientific research, practical recommendations for improving the process of combat training along with the physical qualities of the cadets and, in addition, during the sports competitions held among modern cadets It has been proven by research results that the technical-tactical actions of the sambo sport, in most cases, are obtained by improving the ability to withstand difficulties in complex situations, such as maintaining static and dynamic balance, and the main reason for this is the static- all the tests designed to evaluate the functional ability of the vestibular analyzer controlling the dynamic balance and the modified and new meaningful sambo movements are applied to the cadets' practice.

#### INTRODUCTION

The relevance of our scientific research includes the level and size of differences in individual elements of the cadets' perceptions of special physical quality. It also includes awareness of changes in body functions of a person engaged in sports, for example: tension and relaxation of muscles, speed and depth of breathing, and other aspects.

In addition, it should be noted that the cadet's perceptions of his physical qualities are characterized by their dynamic level. However, these indicators will not be stable forever. Because they are constantly changing depending on the functional capabilities of the cadet, as well as the level of training. To form them, a person is required to activate muscle movements and organic senses at a

high level. Perception of physical qualities is a very complex process, in which the essence of each physical quality is expressed in its occurrence and in the conditions of the behavior performed.

## MATERIALS AND METHODS

The purpose of the research is to develop an optimized technology for performing special physical training exercises in the training process to improve the quality of fast-strength training of cadets.

Research tasks:

- strength-endurance qualities were improved due to the use of general and special exercises in the formation of physical fitness indicators of cadets.

- the opportunity to use favorable situations has been expanded due to the development of the technology of optimization of work movements in improving the actions of the cadets during the competition.

The object of research is the training process of cadets.

The subject of research is the technology of optimizing the ratio of general and special physical training in training processes of cadets.

Research methods. Analysis and generalization of scientific-methodical literature, pedagogical observation, pedagogical experience, mathematical-statistical analysis methods were used in the research. Specific physical quality indicators actually change depending on the correct or incorrect effect of the given loads during the training process. In this regard, a lot of research has been conducted by foreign and domestic scientists, but it is still being updated by new independent researchers. In addition, 7 groups of cadets involved in the scientific research conducted by us were selected as the control group. At the beginning of the study, after getting quality indicators of strength, they started traditional training processes. In order to determine the results of the study, which was carried out for a year, at the end of the study, the trainees in the observation group were given test tests to determine the level of improvement in the quality of repetition strength. Its results You can see in Table 1.

## RESULTS AND DISCUSSIONS

*Table 1*

**The dynamics of change in the continuation of the study of the development of strength quality indicators of the control group cadets**

Number of groups and cadets	1-a группы	2-a группы	3-a группы	4-a группы	5-a группы	6-a группы	7-a группы
		n=27	n=27	n=27	n=27	n=27	n=27
Statistics/indicators							

Таърихи At the beginning a	$\bar{X}$	10,64	10,44	11,43	11,76	9,62	10,44	11,21
	$\sigma$	1,89	1,71	2,09	1,93	1,76	1,71	1,97
	V, %	17,76	16,38	18,29	16,41	18,30	16,38	17,57
at the end of the experiment	$\bar{X}$	11,78	11,32	12,68	12,89	10,49	11,32	12,36
	$\sigma$	2,05	1,94	2,28	2,08	1,87	1,94	2,13
	V, %	17,40	17,14	17,98	16,14	17,83	17,14	17,23
absolute growth		1,14	0,88	1,25	1,13	0,87	0,88	1,15
relative growth, %		10,71	8,43	10,94	9,61	9,04	8,43	10,26
$t_{ct}$		2,12	1,77	2,10	2,07	1,76	1,77	2,06
p		<0,05	>0,05	<0,05	<0,05	>0,05	>0,05	<0,05

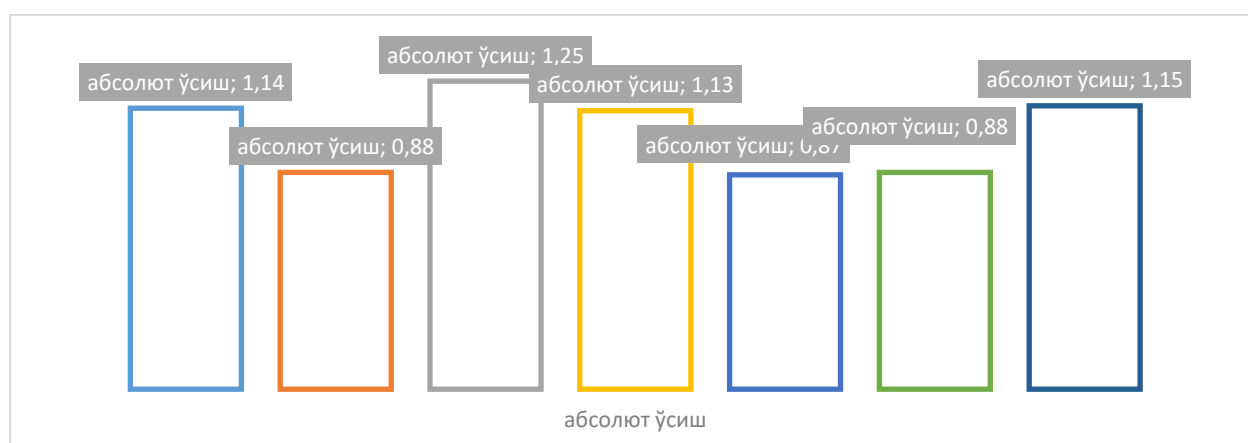
At the end of the study of the strength and quality indicators of the observation group, the results changed as follows: the average arithmetic value of the quantities measured in the 1st group consisting of 27 people - 11.78 standard deviation - 2.05 V% - 17.40 absolute increase 1.14 relative increase 10.71 t-critical values of the t-student distribution showed a reliability level of 2.12 indicators  $r < 0.05$ ; Arithmetic mean value of measured quantities in group 2-a consisting of 27 people - 11.32 standard deviation - 1.94 V % - 17.14 absolute increase 0.88 relative increase 8.43 1.77 indicators of t-student distribution according to t-critical values the level of reliability showed  $r > 0.05$ ; Arithmetic mean value of measured quantities in group 3-a consisting of 27 people - 12.68 standard deviation - 2.28 V % - 17.98 absolute growth 1.25 relative growth 10.94 2.10 indicators of t-student distribution according to t-critical values the level of reliability showed  $r < 0.05$ ; Arithmetic mean value of measured quantities in group 4a consisting of 27 people – 12.89 standard deviation – 2.08 V % – 16.14 absolute growth 1.13 relative growth 9.61 2.07 indicators of t-student distribution according to t-critical values the level of reliability showed  $r < 0.05$ ; Arithmetic mean value of measured quantities in group 5-a consisting of 27 people - 10.49 standard deviation - 1.87 V % - 17.83 absolute growth 0.87 relative growth 9.04 t-student distribution 1.76 indicators of t-critical values the level of reliability showed  $r > 0.05$ ; Arithmetic mean value of measured quantities in group 6a consisting of 27 people – 11.32 standard deviation – 1.94 V % – 17.14 absolute growth 0.88 relative growth 8.43 t-student distribution on t-critical values of 1.77 indicators the level of reliability showed  $r > 0.05$ ; Arithmetic average value of measured quantities in group 7-a consisting of 27 people - 12.36 standard deviation - 2.13 V % - 17.23 absolute growth 1.15 relative growth 10.26 2.06 indicators of t-student distribution according to t-critical values the level of reliability showed  $r < 0.05$ ;

It is necessary to create all the conditions for the formation and training of the necessary physical qualities in the cadets in order to achieve high performance.

Physical training of cadets is a unique pedagogical process aimed at improving the physical qualities of cadets and achieving high sports results. The process of physical training has its own content, which includes the following: a military serviceman's understanding of his physical qualities;

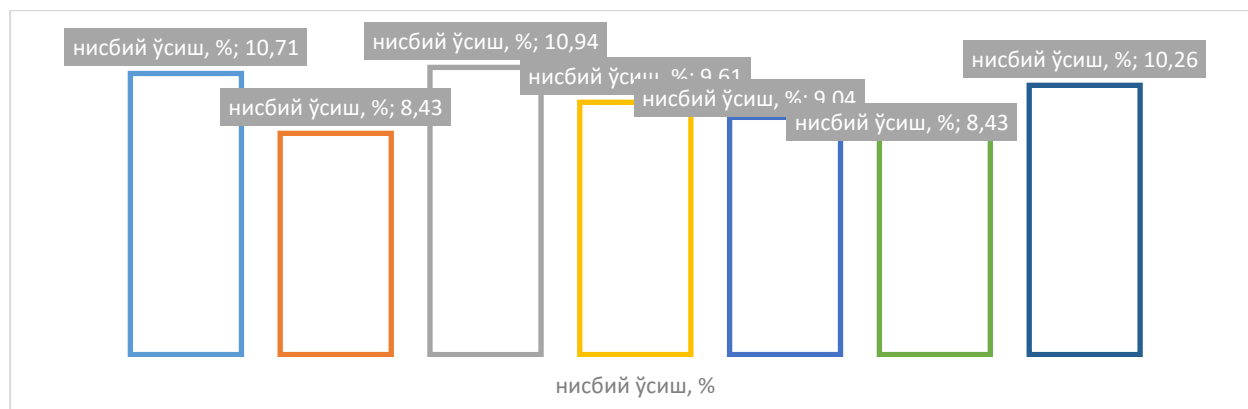
a person's perception of his physical qualities; specialized perception of physical qualities in their complex manifestation. The concepts of the physical quality of the cadets are acquired first of all in the process of its movement activity and taking into account the specific, important aspects of this movement process. In the theory and practice of the science of physical education or physical training, there are a number of concepts that have been formed in a unique way, including strength, endurance, and speed. dexterity, speed endurance, strength endurance can be mentioned separately. These concepts are somewhat common. Their precise and clarification is carried out depending on the type and special characteristics of movement activity in sports.

As a result of clarification, the concepts of power applied to the barbell, explosive power, speed endurance, speed of movements, power endurance, etc. appear. The cadets' perceptions of their physical qualities are manifested in the form of concrete representations of the main physical qualities.



**Figure 1. Absolute growth (in percentages) during the experiment of the development of strength quality indicators of the control group cadets**

From the control group, during the study, the absolute growth rate of the development of quality indicators of strength from the cadets was achieved in percentage terms. The 1-a group achieved an increase of 1.14%, the 2-a group had an increase of 0.88%, and the 3-a group was 1.25%. showing that within the observation groups, the strength took the five steps in terms of the increase in quality indicators, while the 4-a group increased by 1.13%, it was found that the 5-a group changed by 0.87%, while the 6-a group increased by 0.88%, 7 -a group was found to have increased by 1.15%. It was observed that the cadets in the observation group were able to improve their strength and quality indicators as well as their training in traditional training.



**Figure 2. The relative growth (in percentages) during the experiment of the development of strength quality indicators of the control group cadets**

During the study, the relative growth rate of the development of quality indicators of strength from the control group of cadets, in percentage terms, the 1st group increased by 10.71%, the 2nd group increased by 8.43%, and the 3rd group increased by 10.94%. showing that within the observation groups, the power took the five steps in terms of the increase in quality indicators, while the 4-a group increased by 9.61%, it was found that the 5-a group changed by 9.04%, while the 6-a group increased by 8.43%, 7 -a group was found to have increased by 10.26%. It was observed that the cadets in the observation group were able to improve their strength and quality indicators as well as their training in traditional training. The average relative growth in the group is 9.63 %

**Table 2**

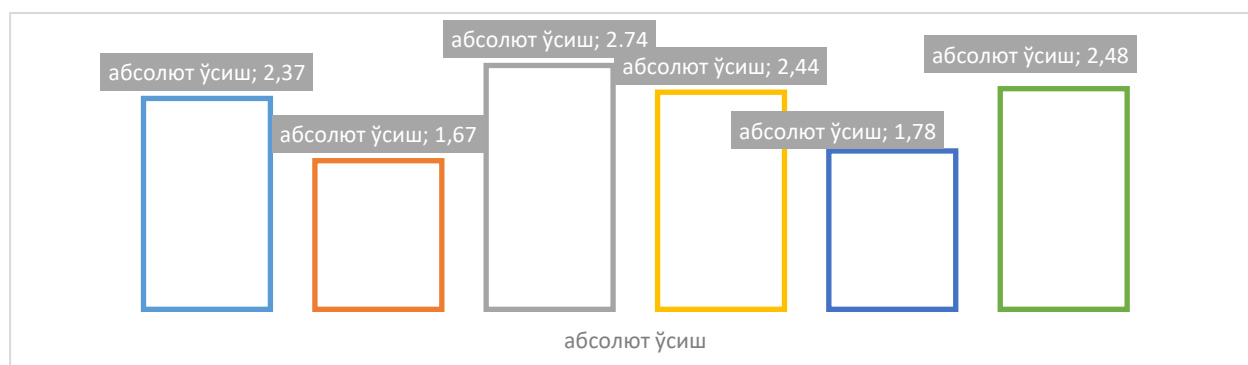
**The dynamics of change in the continuation of the research on the development of strength quality indicators of the cadets of the experimental group**

Number of groups and cadets	1-б гуруҳ	2-б гуруҳ	121 б - гуруҳ	4-б гуруҳ	5-б гуруҳ	6-б гуруҳ	
	n=27	n=27	n=27	n=27	n=27	n=27	
Statistics/Indicators							
At the beginning of the experiment	$\bar{X}$	10,41	10,15	11,67	11,41	9,93	10,89
	$\sigma$	1,87	1,68	2,17	1,91	1,86	1,95
	V, %	17,93	16,56	18,57	16,71	18,73	17,89
At the end of the experiment	$\bar{X}$	12,78	11,81	14,41	13,85	11,70	13,37
	$\sigma$	2,19	1,86	2,56	2,21	1,98	2,24
	V, %	17,14	15,75	17,78	15,98	16,89	16,74
Absolute growth	2,37	1,67	2,74	2,44	1,78	2,48	
relative growth, %	22,78	16,42	23,49	21,43	17,91	22,79	
$t_{\text{crit}}$	4,28	3,45	4,25	4,35	3,40	4,35	
p	<0,001	<0,01	<0,001	<0,001	<0,01	<0,001	

At the end of the study of the strength and quality indicators of the experimental group, the results changed as follows: the average arithmetic value of the values measured in the 1-b group consisting of 27 people - 12.78 standard deviation - 2.19 V % - 17.14 absolute increase 2.37 relative

increase 22 The reliability level of 4.28 according to the t-critical values of the t-student distribution of .78 showed  $r < 0.001$ ; Arithmetic mean value of measured values in group 2b consisting of 27 people - 11.81 standard deviation - 1.86 V % - 15.75 absolute increase 1.67 relative increase 16.42 3.45 indicators of t-student distribution according to t-critical values the level of reliability showed  $r < 0.01$ ; Arithmetic mean value of measured quantities in group 3b consisting of 27 people – 14.41 standard deviation – 2.56 V % – 17.78 absolute growth 2.74 relative growth 23.49 4.25 indicators of t-student distribution according to t-critical values the level of reliability showed  $r < 0.001$ ; Arithmetic average value of measured quantities in group 4b consisting of 27 people - 13.85 standard deviation - 2.21 V % - 15.98 absolute growth 2.44 relative growth 21.43 4.35 indicators of t-student distribution according to t-critical values the level of reliability showed  $r < 0.001$ ; Arithmetic average value of measured quantities in group 5b consisting of 27 people - 11.70 standard deviation - 1.98 V % - 16.89 absolute growth 1.78 relative growth 17.91 3.40 indicators of t-student distribution according to t-critical values the level of reliability showed  $r < 0.01$ ; Arithmetic mean value of measured quantities in group 6b consisting of 27 people - 13.37 standard deviation - 2.24 V % - 16.74 absolute growth 2.48 relative growth 22.79 4.35 indicators of the student distribution according to t-critical values the level of reliability showed  $r < 0.001$ .

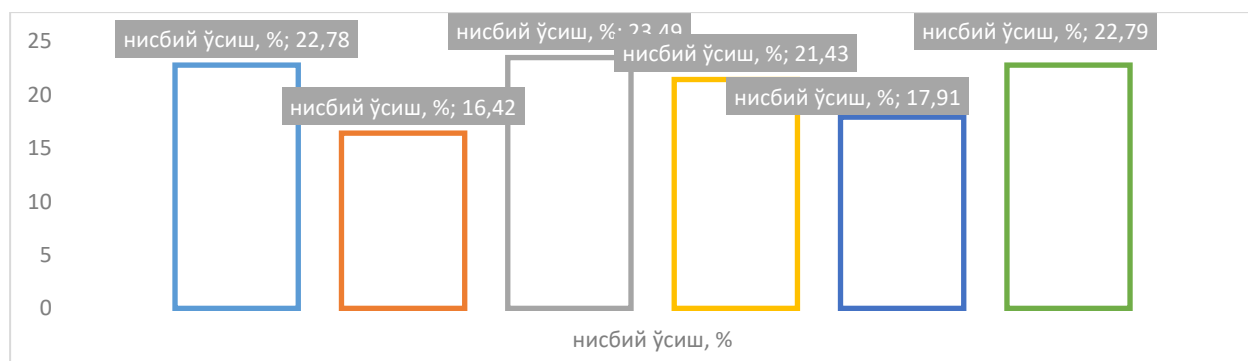
The complex representation of the nature of physical qualities and the conditions of the performed behavior is part of the specialized perception of physical qualities. This specialized perception is manifested in the process of human cognition in the form of "sense of impulse", "sense of compressive force", "sense of speed of movement" and so on. They emerge in specific conditions where the behavior is directly performed, by clarifying the breadth and precision of each special physical quality component element, depending on the activity of the participants in the training.



**Figure 3. Absolute growth (in percentages) during the experiment of the development of strength quality indicators of the experimental group cadets**

During the research, the absolute growth rate of the development of strength quality indicators from the experimental group of cadets, in percentage terms, the 1-b group achieved an increase of 2.37%, the 2-b group had an increase of 1.67%, and the 3-b group 2.74%. showing that among the experimental groups, the strength took the top five in terms of the increase in quality indicators, while

the 4-b group increased by 2.44%, it was found that the 5-b group changed by 1.78%, and the 6-b group increased by 2.48%. It was found that the training levels of the experimental group cadets were improved due to the effective use of the complex of exercises aimed at improving the strength quality indicators of the cadets in the experimental group.



**Figure 4. The relative growth (in percentages) of the experimental group's cadets' development of strength quality indicators during the experiment**

During the research, the relative growth rate of the development of strength quality indicators from the experimental group of cadets, in percentage terms, the 1-b group achieved an increase of 22.78%, while the 2-b group's growth rate was 16.42%, the 3-b group was 23.49%. was observed to increase, while group 4-b increased by 21.43%, group 5-b was found to change by 17.91%, group 6-b showed 22.79% and took the top five in terms of strength quality indicators among the experimental groups. It was found that the training levels of the experimental group cadets were improved due to the effective use of the complex of exercises aimed at improving the strength quality indicators of the cadets in the experimental group. Average relative growth in the group is 20.80%.

## CONCLUSION

We have conducted research on the development of physical fitness of military personnel and their physical qualities, and determined the level of strength, endurance, and speed, and the results at the end of the experiment were determined. The conducted studies and the results obtained from them are the basis for drawing the following conclusions:

According to the analysis of the indicators obtained at the beginning and at the end of the study on the levels of changes in the quality indicators of strength, speed and endurance of the cadets involved in the study was found that the results achieved by it.

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