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Ways to Increase Students' Physical Performance

Turdimuratov J. A.

Associate Professor of the Department of Theories and Methods of Physical Culture, Karakalpak State University, Berdakha

Eleusinov S. A.

Assistant at the Department of Theories and Methods of Physical Culture, Karakalpak State University, Berdakha

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Annotation: *The article raises an urgent problem of modern society, which is to encourage the younger generation to regularly engage in physical education and sports, as well as to popularize a healthy lifestyle among students. Currently, in higher educational institutions, students carry out a very large amount of academic workload, which leads to a sedentary lifestyle, deterioration in the functioning of the cardiovascular, respiratory systems, digestive organs, slowdown of metabolism and blood flow in the legs, which leads to a decrease in the performance of everything body, especially the brain.*

Keywords: *physical exercise, performance, attention, memory, body systems, educational load, mental fatigue, physical activity, physical culture and sports.*

Introduction. Studying at a university is associated with large, long-term intellectual loads. One of the negative aspects of the intensification of the educational process is a decrease in the physical activity of students, which negatively affects the health and performance of students and affects the quality of learning material.

Physical education in universities is one of the main factors in promoting health, physical development, and increasing the functional capabilities of the body of students. The organization, content of classes and methods of teaching physical education to students are influenced by a number of factors that directly or indirectly give them a certain specificity.

Many years of experience in physical education of students, as well as literary data show that the level of physical fitness of the majority of applicants does not meet the requirements for students by the curriculum and regulatory requirements of the educational process.

A student's performance, his health, the development of motor qualities, and functional capabilities largely depend on the effectiveness of rationally constructed and scientifically based application of training programs in physical culture and sports [1, 2]. In previous years, we conducted research on the introduction of certain sets of physical exercises into the educational process [3]. When dosing physical activity, it is important to have a reasonable physiological regimen and rest time between exercises and series. When conducting physical education classes, the individual characteristics of the students' bodies

and their future professional activities were taken into account [4], since until now little attention has been paid to this factor.

Analysis of the physical fitness and physical performance of first-year students during the year of study indicates different levels of these indicators. There is a certain one-sidedness in the development of physical qualities [5]. Some students are better prepared in speed-strength types of exercises, others have a relatively higher level of endurance development, and only a small part of students have good physical preparation in strength, speed and endurance [6, 7]. These are mainly young people who previously studied in children's and youth sports schools.

The uneven physical fitness and performance of the main contingent of 1st year students significantly complicates the process of recruiting study groups based on the development of certain physical qualities and, especially, physical performance. This principle also predetermines the development of differentiated methods of conducting educational and training sessions based on an accentuated increase in the level of insufficiently developed physical qualities.

In the process of physical education of students in universities, various means are used, but the main ones are physical exercises, which play a major role in managing the physical condition of students. (Unfortunately, often the specific selection of physical exercises, their dosage, intensity for people with different levels of physical fitness and performance are of a general nature and in most cases are still far from an ideal solution.

It is known that physical exercises, their dosage, intensity, methods of sports training used in the educational and training process of physical education of students are those control influences under the influence of which certain changes occur in the body of students. Since the process of managing a person's physical fitness is subject to general control laws [8], in order to increase its effectiveness, the following tasks must be clearly specified and solved:

1. determination of the management goal;
2. identifying performance criteria;
3. establishing the initial level of the controlled system (physical fitness, physical performance, functional state of the body);
4. development of an impact program that provides for the main transitions of the system state, determined by the specifics of the controlled process, the purpose of control and the initial state of the system;
5. obtaining information about the state parameters of the controlled system at each moment of control (feedback - goal, standard);
6. processing of information received through the feedback channel and development of corrective actions (comparison apparatus, correction, program);
7. Implementation of corrective actions (control actions) [8].

A comprehensive solution to these problems will contribute not only to increasing the effectiveness of educational and training sessions, but also to the formation of new concepts and ideas in students related to the performance of certain exercises, to replenish theoretical knowledge and, most importantly, to cultivate a conscious attitude towards physical culture in general.

Managing the physical fitness, performance and functional state of the body of students in the process of physical education, taking into account their psychological state, it is legitimate to raise the question of specifying the goal of managing the physical fitness of students. In this case, the teacher must determine

the system of physiological changes in the body that characterize the predicted increase in physical fitness (standard); the volume of skills and abilities being formed in terms of general and professionally applied physical training (PPPP) (elementary model of the object); a system of psychological structures that characterize the idea of the exercise being performed.

This specific content of the goal must be detailed in relation to both the composition and quantitative indicators of the elementary model of the object (student) [8].

Currently, a set of criteria that allows determining the degree of mastery of exercises, the level of development of physical qualities, the functional state of the body, the level of performance, etc., has not yet been specified and is often subjective. Therefore, it is relevant to conduct research that allows us to substantiate the system of independent parameters, describe various states of physical fitness of the body, as well as its individual elements [3, 9]. This direction allows us to develop objective criteria for assessing the effectiveness of the educational and training process. Without such an approach to the physical education of young people, the assessment of one or another teaching methodology will be mainly subjective in nature, which does not correspond to the objectivity of assessing the effectiveness of managing the educational and training process, i.e. does not completely solve this problem.

Analysis of data from pedagogical experiments and conclusions obtained from the analysis of literary sources indicate that the most important criterion of effectiveness is the degree of coincidence of indicators set taking into account the learning goal with the reality obtained (goal-program-standard).

Based on the specific goals of the educational and training process, aimed at improving the physical qualities of students, increasing their physical fitness and performance, increasing the functional capabilities of the body, it is legitimate to highlight the following criteria for the effectiveness of the educational and training process:

1. a criterion of physical fitness, characterizing the physical qualities of a student and the dynamics of their development during training;
2. a criterion for the functional state of the body, which reflects an indicator of some physiological parameter (for example, the reaction of the FOS to a certain load) and characterizes the functional capabilities of the body of students, their dynamics at the stages of training;
3. Training criterion, which is an assessment of the degree of knowledge in the field of physical education and an assessment of the level of mastery of the technique of motor actions. Particular attention is paid to the preparation of work plans for the educational and training process, the selection of the necessary means and methods that are adequate to the physical fitness and functional state of those involved, as well as the sports orientation of the educational and training process. For this purpose, there is a proven scheme for using methods based on various methods of regulating loads and rest (Fig. 1).

Of particular importance in solving this problem is a systems approach, as well as modeling of objects and subjects of research, processes that contribute to the study of the structure and functioning of complex systems, and also help in their prediction [9].

Based on the general principles of knowledge of any system, we carried out physical education research in three main directions: internal - research into the composition and structure of the system; dynamic - its development and transformation; behavioral - its functioning

.Rice. 1. Methods based on various methods of regulating loads and rest in various types of exercises [10]



At the preliminary stage of studying the object (student), we identified structural and functional aspects of the systems approach. This made it possible to more accurately and strictly study the level of physical fitness and performance of first-year students. In this case, methods such as observation, questioning, questionnaires, tests, and measurements were used. In this regard, all 1st year students undergo a medical examination before starting practical classes. Depending on the state of health, physical development, physical fitness and performance, students are divided into three medical groups: basic, preparatory and special. At the first lesson, a lecture is given (according to the curriculum) about the organizational structure of the Soviet physical education movement, the goals and objectives of the Soviet system of physical education, general issues of physical education and its features in a given university. At the end of the lecture, students are surveyed taking into account the specifics of the given university. In the second and third classes, all students (except those assigned to a special medical group) undergo control tests, based on the results of which they are distributed into study groups. At the same time, a comprehensive description of the general physical and technical readiness of the students is given.

As a result, an elementary model of the level of the functional state of the students' body, their physical fitness and performance is formed. An elementary model allows you to compare the current level of physical fitness of students with the predicted one, which is determined by the requirements of the curriculum and the standards of the "Level of Physical Fitness" complex Sports tests (standard) [12]. The specialized literature provides some criteria that can be used to guide students to pass the standards of the "Level of Physical Fitness" complex Sports tests in areas [12]. However, they do not fully reflect the preparation of the body of those involved in the implementation of certain standards and require in-depth experimental research and theoretical justification.

In the process of educational and training sessions, the elementary model of the object (student) is refined and specified. Its presence at the initial stage of training allows the teacher to give a preliminary explanation of the state of the object of study. At the second stage of modeling, an elementary model allows us to identify the most rational means and methods of physical education that are necessary for their effective use in the educational and training process. We have developed a scheme for managing the educational process, which provides the opportunity to use optimal options for physical activity and creates the necessary prerequisites for successful work (Fig. 2). The feedback principle, which forms the basis of all optimal control of any process, plays a dominant role. This includes not only the process going from the managed object to the manager, but also the regulating (corrective) action of the latter, i.e. information received by the teacher as a result of feedback, which is then used to correct the controlled

object in the desired direction. In this case, any control system can be conditioned by the following three conditions [11,15]:



Rice. 2. Scheme for managing the educational and training process of students. (Developed at the Department of Physical Education of the GDOIPC named after P. F. Lesgaft.)

1. direct connection between the control and controlled parts of the system through which control signals are received;
2. feedback between the controlled and control parts;
3. processing of information about the current state of the controlled system, passing through feedback channels into control commands [11].

In the educational and training process, feedback should provide systematic information about changes in physiological and motor parameters. The complex and content of characteristics are determined by the learning objectives and the psychological and pedagogical theory of learning, which is taken as the basis when drawing up training programs. The value of feedback lies in the fact that the information obtained with its help about the progress of the educational and training process allows one to make the necessary adjustments to it and change it in the right direction.

The educational and training process can also be represented as a process of information exchange between a student and a teacher. The training loads offered to students during educational training sessions are control factors regulated by the teacher in order to change the elementary model of the object so that it has minimal differences from the standard (the desired state of the object). In this case, we can distinguish the “teacher-student” system, where the student is the source of information, and the teacher analyzes and processes this information into the necessary influences.

During academic classes, during the training process, the teacher receives from the student information about the correctness of performing the exercise, its parameters, biomechanical characteristics, functional state of the body, level of physical performance, etc. Despite the fact that the teacher at certain stages of training is not interested in all the information, in each In a separate case, the “teacher-student” system should be aimed at maximizing the flow of information. So, for example, when working out the technique of performing a starting run, the main attention, for example, is drawn to the biomechanical characteristics of the exercise. However, at the same time, the teacher perceives and processes information about the functional state of the student’s body at the time of performing the exercise.

The introduction of the “teacher-student” system into the educational and training process provides an opportunity for a more in-depth analysis of all elements of the educational process and allows us to note

the most important point - the exchange of objective information between the teacher and the student. The solution to this problem is greatly facilitated by the introduction into the educational process of radiotelemetric equipment and special training devices for collecting urgent information, processing and analyzing information received from students.

The experience of advanced sports practice and the results of scientific research suggest that at the second stage of preparation, it is advisable, against the background of developing general endurance, to begin forming a model of future competitive activity, including the development of special endurance. At this stage, models of training impact programs and those changes in the condition of the trainees that should be improved under their influence are created.

At the third, final stage, according to the level of physical fitness of the subjects, it is necessary to develop a system of means and methods of physical education that contribute to the formation of physical qualities in order to fulfill program requirements. The system of training loads should contribute to the improvement of those morphofunctional properties of those involved that best meet the specifics of the specific sports orientation of the educational process. It is important to use a wide arsenal of working modes with components that are different in content, but similar in the final result of their impact on the body. At the same time, the role of individualization of means and methods with more precise dosage increases sharply. In practice, it is necessary to use the main points of performing the exercise: changes in the duration and number of repetitions of the exercises, the magnitude of the effort, the coordination complexity of the movements. When drawing up an elementary model of the level of the functional state of the body, it is important to teach each student to independently determine the functional readiness of the body for physical activity, to freely select and plan means for the development of certain physical qualities, abilities and skills.

Particular attention in classes should be paid to the prevention of overfatigue. At the same time, the observation and control of the teacher are effective, which are based on the ability of students to self-assess the boundaries of their biological capabilities and their ability on this basis to regulate the dynamics of loads in accordance with their capabilities. Cultivating the ability to regulate the amount of physical activity is one of the important tasks of training sessions.

Experimental data indicate that systematic pedagogical and medical-biological control and self-control throughout the academic year had a positive effect on the physical education of students. It is known that the psychophysical state of an athlete, his performance, adaptive capabilities and other aspects of life under the influence of various influences of external conditions, due to age-related characteristics of the development of the body, as a result of training and in connection with participation in competitions, constantly change throughout the day, week, month and etc. •

Systematic control allows you to view in dynamics the entire course of a training session, its effectiveness as a whole and in parts, the degree of compliance with the capabilities of the students, notice deviations in time and immediately make changes to the program, load and rest regime.

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