



FUNCTIONAL ADAPTATION OF STUDENTS' ORGANISMS IN DISTANCE EDUCATION CONDITIONS

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Annotation:

The article analyzes the regulatory mechanisms of the organism of students of the direction of education "Physical culture". Based on the statistical analysis of the values of the individual adaptive potential of elective course students, the boundary state of adaptive capabilities and adaptability, the peculiarities of the degree of change in health reserves, are determined, conclusions and recommendations are given.

Key words: MOODL distance learning platform, adaptation, functional change index (ifi), pulse rate, systolic (upper) blood pressure, diastolic (lower) blood pressure.

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Relevance. Creating an environment for the formation of independent, initiative, creative and healthy personality qualities in the educational process of higher educational institutions is among the priority tasks of state programs.

In particular, the student's life, which is changing under the influence of the environmental, economic and information flow of the globalization era, often experiences stress and nervous tension due to its extraordinary and testing situations. The unusual large flow of information that is required to be mastered in the conditions of distance education causes negative stress in students. Chronic stress conditions later lead to complications of "neurosis" and functional diseases of the nervous system.

In the modern scientific-technological development, in the conditions of globalization, in a time when humanity is experiencing constant stressful effects (production, social, psycho-emotional, etc.) optimization of the organism's

capabilities, constant adaptation to environmental conditions, should be considered as a dynamic system in which individual systems and regulatory mechanisms can be coordinated at the level of the organism's functionality. [10]

Adaptation to the rapidly changing environmental conditions, or adaptation (from the Latin *Adaptatio* - adaptation of the organism to the external environmental conditions in the process of evolution) - is carried out at the expense of the functional resources of the organism, that is, due to a certain "biosocial payment" (physical activity). As the body expends its vital resources, it constantly replenishes them, for example during rest and sleep. The consumption and restoration of functional reserves of the organism and its individual systems is a continuous life process.

Adaptation, as one of the main characteristics of living matter, is the result and means of solving internal and external conflicts of life. It exists on the verge of health and disease and is activated



by the phenomenon of mutual collision and transition. In the current period, it is recognized that the "payment" for adaptation, which goes beyond the "biosocial budget", increases the need for more and more actions (preventive actions) of the organism and leads to the disruption of the functions of the adaptation mechanism. The adaptation of the organism is not only biological, but also a social phenomenon, which sometimes manifests itself in the form of negative deviations from the norm, one or another disagreement. [1,2]

According to Meerson F. Z [1983], the energetic connection of the organism's "adaptive reaction" is considered to be mainly in the form of activation of the cellular genetic apparatus, which in turn leads to an increase in the intensity of work in the mitochondrial system and related structures. [6]

Achieving the level of functionality of the organism or some of its systems is ensured through its regulation and control mechanisms. Mobilization of the organism's reserves is the result of gradual changes in the activity of regulatory systems. In particular, this is related to the strengthening of the sympathetic division of the autonomic nervous system. In cases where the body constantly experiences a lack of functional reserves to achieve a stable balance with the environment, the autonomic balance is characterized by a shift towards the predominance of "adrenergic" mechanisms and, accordingly, a state of variable functional tension. [3]

In the state of functional stress of the organism, all its main functions do not go beyond normal limits, that is, functional reserve costs are mobilized only to ensure the normal functioning of systems (blood circulation, respiration) and organs. This condition of the general adaptation syndrome, which manifests itself in the form of varying degrees of tension, is called the "dysosological" condition. (Baevsky R. M., Berseneva A. P., Bersenev E. Yu., Luchitskaya E. S., Slepchenkova I. N., Chernikova A. G. 2021) [3].

The student share in higher education institutions corresponds to the age of 19-28. When organizing and conducting training with this contingent, it is necessary to take into

account their age-related morpho-functional and psychological characteristics.

According to the results of medical and biological research, even if the growth of body length stops, the morpho-functional development of the organism continues: mainly, there is a tendency to develop body weight, chest circumference, lung capacity, muscle strength, and physical activity. The end of the formative period of the student's youth organism, sufficiently high plasticity of the body, adaptation to physical loads - reflect the main features of this period of biological development.

Optimizing the physical development of students' bodies should be aimed at increasing their weakened skills and morphofunctional indicators: regulating body weight (in relation to height), increasing the vital capacity of the lungs, decreasing the functional change index (FCHI), improving the vertical position of the body, etc.

According to the results of the survey (F. F. Jamolov 2021) conducted within the elective course, changes in the attitudes of the student contingent to physical education and sports equipment, and the basics of a healthy lifestyle were studied (<https://docs.google.com/forms>). As a result of the lack of formation of the natural need skills for self-development, management and control of independent physical education and sports equipment of the students under supervision, it limits their adaptive flexibility to the environment of higher education. [5]

It is necessary to conduct explanatory work with students about the need to constantly preserve the physical capabilities accumulated in the first 25 years of life and the purposeful use of health reserves at this age, the complications of an irresponsible attitude to maintaining physical potential at a sufficiently high level, management and control.

Based on the studied sources, it can be said that the research of various functional (adaptive) disorders occurring in the student's body, stress states of adaptation mechanisms is not only a medical-biological problem, but also a pedagogical problem that is waiting for its solution and requires the use of modern educational technologies. [8,9,10]

Educational areas as a new element of the curriculum are elective subjects - an educational



technology designed to stimulate the individual interest of students. Elective courses can be focused on subjects of the curriculum or topics outside of it. It is known from experience that elective courses are mainly designed to fulfill three tasks [4,9]:

1. In-depth mastering of the sciences of the professional field.
2. Mastering subjects for which there are not enough hours in the curriculum.
3. Satisfy the interests of the professional field in connection with human activity (culture).

If 25 or more students register electronically for an elective subject, or when the number of applicants increases, the activity will begin at the expense of students with higher scores. It is aimed to increase the possibility of competitiveness as a result of the student's in-depth mastering of the laws of science in his professional field, as well as the acquisition of additional competence qualities in related fields, based on the field of science chosen from the composition of general professional and specialized sciences.

Elective course experiments carried out in educational institutions are mainly planned in academic years starting from the second semester. Selection period for elective courses: December 15-30 for the summer semester, April 15-30 for the winter semester.

Among other educational programs of higher education, there are conditional and unconditional aspects of introduction of "elective courses" in "Physical training" educational direction. In the course of the elective science field organized by physical training, there are the following opportunities for modern solution of most educational problems: individual approach, level differentiation (evaluation), creation of positive motivation for mastering, in-depth mastering of general and specialized subjects.

The special experimental research conducted at Bukhara State University was

carried out based on the voluntary choice of the 2nd year students of the physical training education department of the physical training faculty.

The purpose of the research: the limit state of the adaptive capacity of students of the elective course and the possibility of flexibility according to it, that is, the experimental study of functional changes in the body. Resources of the "ELECTIVE COURSE" from the subject "Turon wrestling and its teaching methodology" as a solution to the identified pedagogical problem MOODL(<http://213.230.96.51:8072/mod/resource/view.php?id=392949>) placed on the distance education platform through the login/password of the science teacher, theoretical (distance) and practical (traditional) classes in study groups were organized on the basis of the science program and work-study program. The developed electronic resources consist of three sections:

1. Theoretical training (Electronic lecture text, review questions, tests, glossary, electronic links).
2. General and special physical training (Practical).
3. Turon wrestling technique (Practical)

Measurements of the adaptive (functional) capacity indicators of the body of students of the main experimental group formed during the course of the elective course (at the beginning and end of the session) were carried out as part of practical training.

Research organization. At the formative stage of the research, the method of pedagogical experiment was used, which required the formation of the main experimental group consisting of students of the elective course. In order to check the functional changes of the organism of elective course students engaged in health training, the criterion of express assessment of the level of individual health was used (look at the 1 table).

1-table
General assessment criteria for functional changes in the body

№	FCHI norms	Criteria for evaluating the flexibility of the circulatory system
1	2.1 and below	satisfactory adaptation



2	2.11 - 3.20	strain of adaptation mechanisms
3	3.21 - 4.30	unsatisfactory adaptation
4	4.31 and above	violation of adaptation mechanisms

FCHI is significant in this aspect, it changes the value of integral indicators - heart rate, blood pressure (upper and lower), body weight and height measurements, which are traditionally measured, and it is a method that can clearly show and evaluate the direction of movement in the functional state of the organism. The reliability and informativeness of the functional change index (FCHI) have been empirically based on the conducted public examinations [2].

In order to study the characteristics of gradual changes in the state of physical health (adaptive capacity) of elective course students at the beginning (n=63) and at the end (n=60) of the experiment, heart rate at rest, systolic (upper) and diastolic (lower) blood pressure, weight, height indicators were recorded in generally accepted methodical requirements.

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