
**METHODOLOGICAL PROPERTIES OF INTER-SUBJECT
RELATIONS OF PHYSICS WITH BIOLOGY IN MEDICAL
UNIVERSITIES**

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Annotation. *The didactic possibilities of teaching physics in connection with biology by high school students of secondary schools on the elementary fundamentals of biophysical science are considered.*

Keywords. *Biology, physics, biophysics, synergetic approach in science.*

One of the important directions in solving these problems is to improve the quality of professional training of medical university students and their ideological and political education. A higher medical school will be able to accomplish these tasks more successfully by improving the quality of training and education of medical specialists at all levels and at all stages of its system.

The social order of society for higher medical schools necessarily involves the formation in students of deep and lasting knowledge of physics, the ability to independently replenish it and creatively apply it in medical practice.

A modern general practitioner must have broad fundamental training, including skills in core and related diseases in the field of diagnosis, treatment and prevention, be able to continue self-education and self-education, have developed clinical thinking and a communist worldview, and have a complex of knowledge necessary for medical practice . In this unity, a significant role belongs to the general theoretical training of the doctor, in which an important role is played by training in physics and the formation of the doctor's value orientations and his motivational sphere.

In this regard, the requirements for the quality of knowledge of students and the level of their training are increasing. Special requirements are placed on the

quality of knowledge of students, because they are preparing to become medical specialists, whose professional activities are closely connected with the life and health of Soviet people.

Modern medicine is a complex science both in its content and in the study of the human body, methods of prevention, diagnosis, and treatment of diseases. In this regard, the formation of developed natural scientific thinking in students becomes an urgent task of the preparatory departments of medical universities.

The main goal of teaching physics to medical university students can be achieved only when the study of the physics course is carried out on the basis of their deep interest in the subject and sustainable interest in their chosen profession.

Cognitive interest in learning performs a number of functions: it creates positive motivation for studying physics, forms the basis for the emergence of professional interest, contributes to the formation of strong and deep knowledge and more successful formation of self-education skills. The formation of cognitive and professional interests of students lies at the intersection of training and education and necessarily involves addressing the personality of the student, his value-motivational sphere. In the process of teaching students, the teacher pays attention not only to the students' teaching, but also to the development of their personality. The author's many years of work experience have not led to the conclusion that the level of knowledge in physics among students is low. We see one of the reasons for this in the low interest of listeners in physics and medicine. The second reason for the low level of interest in learning can be explained by their lack of skills and abilities for independent work, which are necessary at a university for successful didactic and professional adaptation.

The need to improve the quality of training students for studying at a university and the insufficient development of issues of methods of teaching physics at the preparatory department of medical universities determine the relevance of the research topic.

Over a period of more than ten years of operation, a great deal of experience has been accumulated and a number of studies have been conducted on various

aspects of the educational process of this level of higher education.

In the process of our research, we studied and analyzed the state of training of students in the preparatory departments of medical universities.

On the basis of this, the author carried out further theoretical development of the problem of implementing interdisciplinary connections between physics and biology. Its main result is the creation of a methodological system of physics with biology, which includes the definition of goals and objectives, their types, forms of training sessions that contribute to the implementation of the MPS, selection of the content of interdisciplinary medical material, methods of its disclosure in the process of studying a physics course. In order to develop such a system, we analyzed and summarized the results of studies on the psychological, pedagogical, didactic and general methodological aspects of this problem.

The influence on the development of cognitive and professional interests of listeners is traced.

The reasons for the low level of formation of cognitive interest in physics are identified, determined by students' underestimation of the need to study physics in order to master the theoretical foundations of their future profession.

In the process of building a methodological system for the implementation of physics and biology, aimed at developing cognitive and professional interests, the following tasks were solved:

1. The content and structure of the teacher's activities have been developed to implement as a necessary pedagogical condition for improving the quality of students' knowledge in physics, developing interest in physics and their future profession.

2. The possibilities of various forms of training sessions for the implementation of the MPS of physics and biology in relation to medical universities have been identified.

3. Principles for selecting interdisciplinary material with medical and biological content have been developed.

4. A system of complex interdisciplinary assignments and tasks has been

developed, allowing for an individual approach to students, a system of task-questions and methods for solving them in lectures and practical classes, a system of laboratory work in physics with medical and biological content.

5. Assignments have been compiled for students in all sections of the physics course, carried out during independent work and during preparation for tests.

6. The role and place of the physics course is determined as one of the components of the formation and further development of students' interest in their future profession.

7. Along with this, as a result of the study, a model of the physics teacher's implementation activities was developed, criteria and levels of formation of cognitive and professional interest among students were developed.

Based on the carried out theoretical research and pedagogical experiment, it seems possible to draw the following conclusions:

1. The task of improving the quality of training of doctors requires continuity in the activities of preparatory departments, medical institutes and medical institutions.

2. The currently existing methodological system for training students in the preparatory departments of medical universities does not provide the necessary quality of training for further study at the university. In particular, the study showed that students do not have the skills to transfer learning activities from one subject to another, and there is an underestimation of the importance of studying a physics course for mastering the theoretical foundations of their future profession.

3. The implementation of the following conditions contributes to increasing the level of preparation of students for further study at a university: a) systematic implementation between all major subjects in software throughout the entire period of study; b) an introduction to the course of physics material with medical and biological content; c) the use of a specially developed system of teaching aids in physics classes, aimed at the formation and further development of professional interest.

4. The implementation of the methodological system developed during the research process ensures a higher level of quality of students' knowledge, contributes to the formation of professional and cognitive interests, and has a positive impact on the level of didactic and professional adaptation of students during their studies at the university.

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