

POSSIBILITIES OF INCREASING THE EFFICIENCY OF TEACHING MODERN PHYSICS IN HIGHER SCHOOL

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Annotatsiya.Maqolada ta'lim tizimiga fanlararo integratsiya muammosi o'rganilgan. Fanlararo integratsiya talabalarning mustaqil ijodiy qobiliyatlarini oshirish, ularning dunyoqarashi va ilmiy tafakkurini oshirish va shakllantirish, pirovardida butun ta'lim jarayonini takomillashtirish vositasi sifatida ko'rsatilishi ko'rsatildi.

Kalit so'zlar: zamonaviy fizika, fanlararo integratsiya, fizika, kimyo, matematika.

Abstract.The article deals with the problems of teaching selected issues of modern physics in universities. The problems arising in the presentation of theoretical questions are analyzed, the possibilities that open up in connection with the development of sensor systems are shown: the use of standard sensor systems for solving various experimental problems; the use of modeling physical objects on a PC, replacing complex special equipment; the possibility of transferring some of the experimental tasks to home conditions; use of data obtained with the help of remote experimental equipment.

Key words: modern physics, new information technologies, methods of physic, interdisciplinary integration, physics, chemistry, mathematics.

The problem of teaching selected issues of modern science at universities and schools has been relevant for many years. It was the desire to acquaint students with the achievements of modern science that became the reason for the school reform in the 70s and 80s of the last century. The goal of the reform was to update the system of natural science education and bring it to the level of scientific achievements of that

time, and, most importantly, to use the achievements of psychology and methodology. New textbooks were written in almost all disciplines, including physics. The presentation of the material in them, the system of practical and experimental tasks contributed to the formation of certain methods of thinking in students.

At present, in our opinion, the topic is still relevant for a number of reasons 1. The first of them is the achievements of modern science, the second is the breakthrough development of various technologies, and the third is the implementation of the next educational reform. It seems to us that the role of physics in modern society remains underestimated, which can lead to unpredictable consequences. And from the predictable consequences: another lag in the field of new technologies (industrial, military, etc.), a shortage of engineering personnel and highly qualified workers, the inability to fully use high-tech technologies in all spheres of life (maintenance and use of equipment in medical institutions and other places clearly with unrelated physics).

It seems to us unnecessary to substantiate the necessity of teaching selected issues of modern physics. It is quite obvious that, without possessing at least a general idea of the achievements of modern science, including physics, we will never be able to master and, moreover, create our own new technologies, but we will endlessly copy what has already been done and lag behind for decades.

Before moving on to proposals for the presentation of some selected issues of modern physics, let us present the results of the survey conducted by the authors to get acquainted with the opinions of the participants in the educational process themselves.

The survey aimed at:

- a) clarification of the attitude of students to the study of physics in general and the need to get acquainted with the problems of modern physics in particular;
- b) the establishment of sources for obtaining information on the problems of modern science;

- c) finding out the opinions of students on the use of training in physics in future professional activities;
- d) an assessment of the initial training on the issue of interest to the authors (as a rule, it is not very good, since a modern pedagogical university does not prepare specialists of the appropriate level, as it was done before) .

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