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Current Problems of Physical and Mathematical Sciences

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ABSTRACT: The development of society, the reforms being carried out in the field of education in our country require the training of mature and highly thinking personnel in accordance with the world standard. This article highlights the importance of basic and science-related competencies in solving the problems of physics education and the prospects for its improvement.

KEYWORD: computerization, methodology, student psychology, innovation, experimental, technology, development, advanced pedagogical experience.

INTRODUCTION

In the following years, the laws on education implemented in the Republic of Uzbekistan set the task of reforming the education system, ensuring modernity, humaneness, the scope of imparted knowledge with life processes in all educational institutions. , for this, requirements such as wide application of modern information technologies of teaching are set. Currently, intensive application of innovative pedagogical and information technologies in physics education has become a pedagogical and methodological idea. The introduction of information technologies into the educational system has led to the creation of new types of training (acquaintance with physical models, computer experiments, solving experimental problems, conducting research, creative tasks) especially in the teaching of physics. ldi Among them, one of the main problems of physics education is the creation of virtual stands of laboratories, modeling of physical processes is one of the urgent problems of this day.

LITERATURE ANALYSIS AND METHODOLOGY

In the 21st century, when computerization is at its peak, it is time to teach subjects through computer programs. Computerization is rapidly entering the educational process. Physical experiments, effects and events can be demonstrated through computer programs. The computer can be widely used in imparting knowledge, controlling acquired knowledge, solving physics problems, and in the laboratory.

In the absence of high-resolution devices in traditional laboratory conditions, physical experiments and effects are explained verbally, with almost no opportunity to demonstrate them. Such processes can be observed only through modern computers. Computer programs that teach various physical laws, establish connections between parameters, draw graphs, and implement physical processes in a way that is close to the occurrence in nature. many are being built. Such programs are also used in the teaching of physics. In the future, the creation of electronic textbooks is underway to further improve teaching. Teachers can make good use of this. It is very convenient for both the student and the teacher, you can learn the desired topic on the computer and get answers to the necessary questions. The most convenient aspect of these e-textbooks is that they allow remote control. This is the methodology of visual teaching of physics.

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Teachings about the forms of structure and organization of the lesson, as well as the laws of the development of the theory of physics teaching and the principles of implementation of its results.

The methodology of visual teaching of physics, like other subjects, has special examination methods. For example:

- analysis of general issues of secondary education and determination of the role of physics as an educational subject in solving them;
- learning and summarizing advanced pedagogical experiences;
- comparative analysis of physical education and pedagogical practical issues;
- analysis of the uniqueness of student psychology and the process of visual teaching of physics;
- the analysis of the uniqueness of student psychology and the physics teaching process;
- to determine the objective trends and laws of the development of physics methodology based on the analysis of the history of physics teaching;
- on the basis of the comparative analysis of the program, textbooks, the results of testing the knowledge of schoolchildren, etc., to determine the objective trends and laws of the development of the methodology of visual teaching of physics in developing countries, to put hypotheses on this basis and to test them experimentally

DISCUSSION AND RESULTS

Pedagogical software tools are didactic tools designed for partial or complete automation of the educational process with the help of computer technologies. They are considered to be one of the promising forms of increasing the efficiency of the educational process and are used as teaching tools of modern technologies. Pedagogical software tools include: software product (set of programs) aimed at achieving specific didactic goals in the subject, technical and methodical support, additional and auxiliary tools. Pedagogical software tools can be divided into:

educational programs - based on the level of knowledge and interests of students, directs them to acquire new knowledge;

test programs - used for checking or evaluating the acquired knowledge, skills and abilities;

exercises - serve to repeat and strengthen previously learned educational material;

programs that form a virtual learning environment with the participation of the teacher.

CONCLUSION

In conclusion, as a result of scientific and technical progress, in this century, when the science of physics is developing consistently, we will have to create innovations. In this regard, there was a need to significantly increase the level of the educational process, to ensure that students thoroughly master the basics of science in the teaching of general professional subjects to young people, to form in them such qualities as faith in their profession, hard work, moral purity, love for our Motherland. and aims to educate in a perfect human spirit, ready to contribute to its future, while at the same time conveying to the students the role of the subject in human life..

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