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The Teaching Tools Of Physics Course Topics On The Basis Of Interdiscipline Integration

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ABSTRACT

The article discusses the use of effective teaching aids in teaching physics. In this regard, the importance of interdisciplinary integration, the main organizational and pedagogical activities based on interdisciplinary relations, is widely covered. The main goal of integration in the article is to create a holistic view of the world around the student, that is, to form a worldview, to explore some possibilities for a high-quality solution to the problems of teaching and educating students, to build a comprehensive learning process.

KEYWORDS

Physics, interdisciplinary integration, pedagogical activity, research, information and communication, effective teaching aids, effective teaching methods.

INTRODUCTION

Modern educational standards and a modern educational system have set the main task of the educational institution - to provide quality education to each student on the basis of a system-activity approach. Hence the need for active participation in the learning process, allowing students to independently acquire and deepen new knowledge in the learning process. As a result of implementing this approach, the student learns to navigate the

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flow of information, moves from passive assimilation to active information search, emphasizes critical understanding and use of practice, and creatively solves the resulting problems.

Ensuring the acquisition of skills in the study of science, the formation of hypotheses, designing, conducting experiments, evaluating the results obtained, developing skills in the safe and effective use of laboratory equipment, accurate measurements and the adequacy of the results obtained level assessment, it is necessary to provide scientifically based evidence for their actions based on interdisciplinary analysis of learning tasks.

MATERIALS AND METHODS

According to the curriculum of basic general education in physics, the general objectives of the study of physics can be distinguished:

1. Development of students' interests and abilities through the transfer of knowledge and experience of cognitive and creative activities;
2. To understand the meaning of the basic scientific concepts and laws of physics, the relationship between them;
3. Forming students' ideas about the physical image of the world [5]

These goals can be identified through personal, metasubject, and subject learning outcomes. In the opinion of many teachers, the implementation of the requirements within the framework of "science" teaching students is less effective, on the other hand, the use of interdisciplinary links in the learning process can meet all the requirements. To improve the quality of education, new approaches and technologies are being introduced into the educational process, the basis of which is integration. It is impossible not to agree that it is a disciplinary integration of knowledge - a springboard that contributes to the increase of high-quality teaching of students, optimization of knowledge and cognitive activity, development of creative thinking of students and their growth.

The urgency of the problem is due to the combination of natural sciences, technical and general cultural knowledge on the basis of the modern level of development of science and technology. The task of training graduates in the framework of the implementation of federal state education standards is to look for new forms of training organization to address a number of contradictions between:

- In identifying and developing the hidden potential of the educational process and the conditions for the implementation of the need for integration in the work of each subject teacher through interdisciplinary integration;
- The need to develop the intellectual and emotional spheres of school students in the learning process and the insufficient use of the combination of natural sciences, humanities and aesthetic content in this process.
- Physics lessons combined with other subjects, as well as interdisciplinary classes, on the one hand, help to increase the motivation of students who are well prepared for other subjects, on the other hand, they can negate the motivation of low level students. student readiness.

These contradictions raise a problem that needs to be addressed:

Identify and implement the integrated educational potential of the integration of

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"Physics" with other disciplines and the effective use of the most modern teaching aids in this regard.

There have been many changes in the education system in recent years. In particular, the standards of education, the nomenclature of specialists required by the country are different, the requirements for the level and quality of their training have increased significantly, as employees have to adapt to the essence and modern tasks of economic and other reforms. It is taking place in Russia. The concept of education is a systematized knowledge acquired as a result of teaching in educational institutions or as a result of self-study (self-education) and the skills associated with them, and interpreted as a set of skills. Clearly, in these circumstances, the traditionally formed pedagogical education system cannot remain unchanged. It needs modernization. Significant impact can be achieved here through the use of modern media. Therefore, there is an urgent need for new methodological approaches in the development of the latest information technologies and information technology tools.

RESULTS AND DISCUSSIONS

Teaching aids are an important element of equipping the learning process. Along with the purpose, content, forms and methods of teaching, textbooks are one of the main components of the didactic system.

A topical question for every teacher is: "What tools do you use to teach?"

It leads to one of the most important categories of pedagogy - the category of textbooks. Without them, it is impossible to achieve the set goal, to implement the intended content, to supplement the training with cognitive activities.

The main task of the teacher is to make the topic interesting for the student, to make him see real living phenomena of nature behind formulas and theorems. The use of modern teaching multimedia technologies requires the use of modern technical teaching aids in schools, which allows: enrichment of pedagogical and technological means of teachers, the removal of routine work. Every school dreams of modern technical textbooks and practical textbooks in their classrooms.

Different study guides have different goals and capabilities and perform different didactic functions. The complexity of the methodological basis of the educational process implies the selection of appropriate teaching aids, taking into account their superior didactic functions and educational situations.

A comprehensive approach to the methodological equipment of the educational process is reflected in the textbooks at all stages of the teacher's teaching activities and students' learning activities and the learning process:

- Provision of education at the stages of presentation and perception is required;
- At the stage of strengthening and improving knowledge, skills, at the stage of application and control.

The educational process includes three main functions: educational, pedagogical and developmental. The methodological complexity of the educational process implies the implementation of all functions of the learning process through teaching aids.

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Teaching aids have become not only a source of learning information, but also a tool for managing students 'learning activities. Teaching aids should contribute to mastering the basics of science, developing thinking, shaping worldviews, and educating students in a moral spirit.

The study of the concept and features of textbooks has been carried out by well-known scholars, for example:

1) S.A. Smirnov considers textbooks as a variety of materials and tools of the educational process;
2) G.M. Kodzhaspirova pays great attention to technical manuals and methods of their use;
3) P.I. Pidkasisty considers textbooks as a material or ideal object;
4) T.E. Sokolova pays attention to textbooks that help to develop children's interest in knowledge;
5) A.V. Molokova considers the computer as a teaching aid. What pedagogical conditions exist for the use of modern teaching aids to activate students.

CONCLUSION

Electronic programs allow the teacher to visualize the learning process, stimulating the intellectual activity of students. Thus, e-learning resources and the new information-educational environment formed on their basis have great potential for improving the quality of education. If it is built on an innovative model of training, its most important features are a person-centered approach, focused on the development of students' creative abilities.

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