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THE IMPORTANCE OF USING ICT TOOLS IN PREPARING STUDENTS FOR PHYSICS OLYMPIADS

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Abstract
The use of computer technologies in the educational process develops the mental activity of students, makes the educational process understandable and interesting.

Keywords: computer technology, physical process, multimedia, laboratory training, electronic manual, telecommunications.

Introduction

Physics is an experimental science, so it is difficult to imagine studying it without the use of real instruments and equipment. Unfortunately, the equipment of a physics classroom does not always allow for all the necessary experiments and laboratory work. Therefore, in lessons and in extracurricular activities, electronic publications are used, which make it possible to conduct a computational computer experiment based on virtual equipment, watch a video recording of a "live" experiment, study a device or device based on an interactive model. In practical work, digital educational resources (DER) are used, which help in educational activities: "Open Physics", "Living Physics", "Open Astronomy", CD encyclopedia of video experiences. Convinced of the possibility of constructing virtual objects, creatively minded students try their hand at creating software products that allow them to conduct virtual laboratory work and study interactive models of various devices. An example of such products is a package of computer programs created in the DELPHI environment for conducting virtual laboratory work when studying the topics: "Uniformly accelerated motion" and "Oscillations". This

In lessons and in extracurricular activities, electronic publications are used, which make it possible to conduct a computational computer experiment based on virtual equipment, watch a video recording of a "live" experiment, study a device or device based on an interactive model. The form of student activity appeared in response to a problem that arose with the equipment during the laboratory work "Determination of the acceleration of free fall" in the 9th grade. At first, one computer program was written: "Determination of the acceleration of gravity by the stroboscopic method." Then the software package was supplemented with two more laboratory works: "Study of the movement of a load along an inclined plane", "Study of the oscillations of a mathematical pendulum." During such a virtual experiment, students can, at their discretion, change the initial parameters of the experiment, observe how the phenomenon occurs, analyze what they saw, obtain a quantitative result, calculate the error, and draw appropriate conclusions. The software product has HTML support for posting on the Internet. Currently, the issue of effective use of information and communication technologies (ICT) in the educational process in educational institutions, in particular when teaching physics, remains relevant. Modern computer programs and telecommunication technologies provide students with electronic

textbooks and educational sites. and provides access to sources of information, such as It is aimed at increasing the effectiveness of the development of cognitive independence and creating new opportunities for the creative growth of students. Internet resources, electronic textbooks, educational programs, together with traditional methods, help to successfully achieve the goal - those who know how to apply theoretical knowledge in practice are capable of independent learning, self-development and self-improvement, forming a ready-thinking personality.

The correct and effective use of computer technologies in the system of higher and secondary education is one of the important factors in improving the quality of teaching. Therefore, the daily activities of every physics teacher require the correct and skillful use of computer technologies, i.e., multimedia electronic aids when teaching complex physical processes. To do this, the physics teacher must be familiar with the method of using multimedia electronic aids during the lesson and prepare in advance. If a teacher is creative with an e-book and uses all of their knowledge and experience to help students understand the e-book materials, they can teach students new concepts beyond what is shown in the e-book. Before using a multimedia electronic manual in lectures, it is necessary to conduct a systematic analysis of it by the teacher, in which attention should be paid to: A summary of the use of a multimedia electronic manual, the advantages of the pages and their positive nature, the necessary experiments and visual aids. , additional literature outside the textbook, the role of the teacher in teaching using a multimedia electronic manual, a multimedia electronic teacher's opinion on the use of the manual, new concepts that can be taught using a multimedia electronic manual, preparing the audience for a lecture, homework, work outside the classroom, taking into account knowledge and opinions of students on the use of multimedia electronic aids depends on the creative abilities and activities of each physics teacher.

Therefore, the use of modern computer technologies during the lesson will make it possible to convey to students the content of the lecture based on demonstration in a short period of time. We think about ways to use multimedia electronic aids and their content when covering teaching materials on the use of multimedia electronic aids and the transition of topics included in the programs of all educational institutions. Currently, performing models of physical phenomena and virtual physical experiments using computer technology has a practical effect on the development of the intellectual potential of students. Computer models of many physical phenomena (mechanical, molecular, electrical and optical) very easily explain physical phenomena and serve to develop students' cognitive abilities and imagination. In the educational process, the most pressing problem is the search for a new methodology for teaching each physics subject. This is directly related to the reform of the educational process, that is, the introduction of a new teaching methodology that corresponds to the possibilities of real knowledge of the subject being studied by students based on an innovative approach to educational materials.

Literary analysis and Methodology

Research has confirmed the truth of the scientific hypothesis about the need to use ICT in physics lessons. Thus, we can highlight the following aspects of realizing the educational potential of ICT in the modern lesson.

Related to educational activities:

- increase interest in the educational process;
- activation of students in the lesson

About the organization of the educational process:

Differentiation and individualization of education;

- additional opportunities for creating problematic situations;

Systematization of the educational search process;

Quickly check students' assumptions;

Express diagnostics of the effectiveness of the educational process;

Transition from qualitative to quantitative research.

Additional features of the view on its role in the development of students; expanding the scope of research;

- measurement and visualization of fast processes;
- detailed study of the “fine” aspects of the experience;

In this work, the problems of analyzing the use of information and communication technologies in the educational process in general and in the process of teaching physics in particular were solved. It consists in determining the main directions of teacher activity in the use of ICT technologies in teaching physics.

The teacher creates initial guidelines for mastering the subject and, in difficult cases, provides them with individual assistance and, together with a specialist, creates a program for mastering the subject using a computer. Modern computer technologies open up unlimited opportunities for teachers to access non-traditional sources of information, increase the efficiency of independent work, and provide completely new opportunities for creativity, creation and consolidation of various professional skills. Creating an educational model helps to clearly imagine the object being studied and increase teachers’ interest in this form of education, as well as to better assimilate the educational material. Computer educational technologies allow the teacher to use any combination of them, for example, certain types of educational work, tools adapted to the teacher, to quickly update the content of educational and control programs in accordance with the emergence of new knowledge and technologies. allows. Computer teaching technologies increase the effectiveness of practical and laboratory knowledge in teaching physics, implement impartiality in assessing teachers’ knowledge, create ideas for improving skills, replace expensive, unique equipment in the educational process, and allow the introduction of training and laboratory work using a computer. models. In the national personnel training program, special attention is paid to the formation, strengthening and improvement of the material, technical and information base of educational institutions based on modern requirements, providing the educational process with textbooks, teaching aids, methodological recommendations and modern innovative technologies.

CONCLUSION

- Modern methodological sources (in our country and abroad) of the state of the problem in theory and practice, the influence of national traditions on the work activity of primary school students and the formation of personal qualities in the process of study and extracurricular activities are analyzed. the work was shown. Conceptual pedagogical rules and pedagogical requirements were developed.

• A pedagogical system for using folk traditions in the labor training of students has been developed.
• The concept of labor education of students was developed.
• Basic requirements for a theoretical model of using folk traditions in the labor education of students have been developed.
• The optimal levels of stage-by-stage implementation of labor education of students in advanced national labor traditions are substantiated.
• An effective system of labor education has been developed, based on attracting students to work activities worthy of their strength.
• The study proved the possibility of stratifying students using national traditions in choosing various forms and methods of teaching in practical psychological and pedagogical training to develop practical skills and abilities in students.

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