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METHODOLOGY FOR USING ELECTRONIC LEARNING TOOLS IN THE EDUCATIONAL PROCESS ON THE SUBJECT "PHYSICS"

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Annotation. *When developing the content of physical education, the general principles of the unity of the content, structural and organizational aspects of teaching physics at different levels of general secondary education, as well as didactic principles, are taken into account. The paper shows that one of the professional tasks of a physics teacher is the task of using modern scientifically based methods, methods and means of teaching physics, including electronic teaching aids, information and computer technologies.*

Keywords: *Information and computer technologies, virtual laboratory, physical education*

The use of information technology in the teaching of natural sciences in the educational process makes it possible to actually individualize learning, deepen and improve students' knowledge with the help of a computer, correct shortcomings, and partially eliminate overload. New information technologies are becoming a necessary condition for the success of the learning process.

In the general system of natural science education of modern man, physics plays a fundamental role. Under the influence of physical science, new areas of scientific research are developing, emerging at the junction with other sciences, and a technique and technological base for the innovative development of society are being created.

When developing the content of physical education, the general principles of the unity of the content, structural and organizational aspects of teaching physics at different levels of general secondary education, as well as didactic principles, are taken into account.

One of the professional tasks of a physics teacher is the task of using modern scientifically based methods, methods and means of teaching physics, including electronic teaching aids, information and computer technologies.

Currently, electronic learning tools are distinguished by a variety of forms of implementation, which are due to both the specifics of subject areas and the capabilities of modern computer technologies. Modern ESE in the subject "Physics" can be represented as:

- virtual laboratories, laboratory workshops;

- computer simulators;
- testing and monitoring programs;
- game training programs;
- software and methodological complexes;
- electronic textbooks, the textual, graphic and multimedia material of which is provided with a system of hyperlinks;
- subject-oriented environments (microworlds, simulation programs);
- sets of multimedia resources;
- reference books and encyclopedias;
- information retrieval systems, educational databases;
- intelligent learning systems.

The use of electronic learning tools in the educational process gives teachers additional didactic opportunities:

Immediate feedback between user and ICT tools

Computer visualization of educational information, which involves the implementation of the capabilities of modern means of visualizing objects, processes, phenomena (both real and "virtual"), as well as their models, their presentation in the dynamics of development, in temporal and spatial movement, while maintaining the possibility of dialogue communication with program.

Computer simulation of the objects under study, their relationships, phenomena, processes occurring both in reality and "virtually".

Automation of the processes of computational, information retrieval activities, processing the results of an educational experiment, both actually occurring and “virtually” presented on the screen with the possibility of multiple repetition of a fragment or the experiment itself.

Under the condition of purposeful and systematic use of ESP in the educational process in combination with traditional teaching methods, the effectiveness of training is significantly increased.

It should be noted that the use of ICT in the educational process significantly affects the forms and methods of presenting educational material, the nature of the interaction between the student and the teacher, and, accordingly, the methodology of conducting classes in general. At the same time, information and communication technologies do not replace traditional approaches to learning, but significantly increase their effectiveness. The main thing for a teacher is to find an appropriate place for ICT in the educational process, i.e. to go from a pedagogical task to information technologies for solving it where they are more effective than conventional pedagogical technologies.

Any of the traditional types of lessons can be conducted using ICT. So, for example, in the lesson of studying new material, the teacher can use the following types of ESP: subject- oriented environments (microworlds, simulation programs); game training programs; software and methodological complexes; sets of multimedia resources; reference books and encyclopedias. At the lesson of control and correction of knowledge, skills and abilities - testing and control programs; laboratory workshops, virtual laboratories.

Here are the possible options for conducting lessons using ESP:

1) the class is divided into 2-3 groups, one of the groups is sent to the computer class, and then after 10-15 minutes it is replaced by the next one;

2) the entire group being trained is in the computer class, and only a part of the students work directly with computers at certain periods of time;

3) There are 2-3 computers in the classroom at all times.

The use of ICT is also possible when a teacher prepares and conducts a lesson in a non-traditional form, during extracurricular hours - when conducting extracurricular activities, circle work, organizing self-training.

The choice of forms, methods and means of training and education is determined by the teacher independently on the basis of the requirements for the knowledge and skills of students formulated by the curriculum, taking into account their age and psychological characteristics, as well as the level of training.

Today, the teacher is almost forced to devote considerable time in the classroom to the awakening, or rather, the resuscitation of the desire to learn. In the conditions of excessive information, when children begin to act with protection mechanisms in relation to educational material in which they do not see any specific benefit for themselves, teachers are forced to learn how to convince them of the relevance and usefulness of the proposed material, and therefore, to present information in such a way that it is demanded and accepted by students.

To solve the problem under consideration, to increase the motivation for learning, we can propose *a model of active interaction.* The teacher during the lesson is constantly in dialogue with the students, keeps them in a positive mood, encourages initiative, easily grasps changes in the psychological climate of the team and responds flexibly to them. The style of friendly interaction prevails while maintaining role distance; emerging educational, organizational and psychological problems are solved by joint efforts.

However, the most important question for a teacher thinking about the problems of motivation should be the question: "Why is this necessary?" Since motivation is the driving force of the actions and deeds of the individual necessary

to activate the work of students.

It is important for a teacher to master the art of promotional packaging of educational information. After all, the main elements of advertising - to attract attention, arouse interest, arouse desire and encourage action - largely coincide with the key objectives of the lesson.

Conclusion

Based on the knowledge gained, students should study the issues of production, transmission, consumption of electrical energy and its savings. When developing the content of physical education, the general principles of the unity of the content, structural and organizational aspects of teaching physics at different levels of general secondary education, as well as didactic principles, are taken into account. The paper shows that one of the professional tasks of a physics teacher is the task of using modern scientifically based methods, methods and means of teaching physics, including electronic teaching aids, information and computer technologies.

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