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THE USE OF INTERNET TECHNOLOGIES IN PHYSICS LESSONS

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Abstract: this article discusses the positive aspects of the use of Internet technologies in physics lessons; the features of the use of Internet technologies in various types of physics lessons are considered.

Keywords: Internet technologies, technologies, teaching physics in the secondary school.

ИСПОЛЬЗОВАНИЕ ИНТЕРНЕТ-ТЕХНОЛОГИЙ НА УРОКАХ ФИЗИКИ

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Аннотация: в статье рассматриваются положительные стороны использования интернет-технологий на уроках физики; рассмотрены особенности использования интернет-технологий на уроках физики различного типа.

Ключевые слова: интернет-технологии, технологии, обучение физике в средней школе.

Physics is one of the fundamental natural disciplines of the curriculum of the school education system, the study of which lasts from the 7th to the 11th grade. As an academic subject, it allows students to form a holistic picture of the world by studying the laws of nature and the surrounding natural processes from the simplest to the most generalized structural elements of human knowledge about the universe.

In modern conditions, physics teachers are required to develop the content and organization of lessons using Internet technologies and online teaching methods [1]. Despite this fact, the aspect of the use of Internet

resources in the methodology of teaching physics is rather poorly covered in the domestic literature. Basically, this issue is limited to the availability of catalogs of Internet resources in the methodological and other recommendations for teaching the discipline «Physics» and the question of their applicability in the educational process is not covered at all [4].

The use of Internet technologies in physics lessons provides all participants of the educational process with a whole range of additional opportunities [2]. The main ones are:

- individualization and differentiation of the educational process, carried out by providing students with the opportunity to both study the subject in depth and work out general educational skills and abilities;
- the development of students' independence, since the student solves certain tasks independently, consciously (without copying the solutions on the blackboard or from a friend), while increasing his interest in the subject, confidence that he can master the subject.

Modeling with the use of computer technologies of some physical processes and phenomena, for example, the free fall of bodies, the behavior of gas when pressure or temperature changes, etc. contributes to a deeper understanding of the physical essence of the phenomena under consideration.

Information technologies increase the informative content of the lesson, the effectiveness of teaching, give the lesson dynamism and expressiveness. Lessons using multimedia technologies are very popular with students, activating their interest in studying the subject [5].

The main forms of conducting lessons using Internet technologies include:

- lesson-explanation of new material;
- laboratory work;
- lesson of consolidation of knowledge;
- lesson of generalization and systematization of knowledge-research;
- training conferences and seminars;
- extracurricular activities with the use of Internet technologies;
- project activities involving Internet technologies.

Let's consider the key features of the use of Internet technologies in school physics lessons, for each of the above-mentioned forms of conducting lessons (Table 1).

Table 1

The use of Internet technologies

The Form of the Lesson	The Content
The lesson-explanation of new material	Demonstration of fragments of video films, rare photographs, graphs, formulas, animations of the studied processes and phenomena, the operation of technical devices and experimental installations, listening to music and speech, interactive lectures
Laboratory work	Development of laboratory work forms (interactive)
The lesson of consolidating knowledge	Can be offered to students for independent solution of problems in the classroom or at home, the correctness of which they can check by setting computer experiments. Independent verification of the results obtained with the help of a computer experiment enhances the cognitive interest of students, makes their work creative, and in some cases brings it closer in nature to scientific research.
The lesson of generalization and systematization of knowledge-research	Students are invited at this stage to conduct a small study independently, using a computer model or a virtual laboratory, and get the necessary results
Educational conferences and seminars	Students acquire new knowledge from the literature that they worked with in preparation for the conferences, seminars, from reports made by other students.
Extracurricular activities with the use of Internet technologies	In extracurricular activities classes, you can use a variety of generalizing games that can be developed independently, or you can find ready-made ones on the Internet.
Project activity with the use of Internet technologies	When using information technologies in project activities, not only the speed of project development increases significantly, but also, more important, the quality of the finished project increases. The project developed with the help of information technologies acquires a new essence – it becomes multimedia.

Thus, I would like to note that the expediency of using Internet technologies in teaching physics is not in doubt [3]. The systematic use of information technologies contributes to the formation of key competencies of students and increases interest not only in physics lessons, but also in relation to science in general.

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