

Information and Communication Technologies as a Technological Basis of Distance Education

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Abstract: In recent years, many opinions have been expressed about the use of information and communication technologies as a technological basis for distance education, which is associated with an increase in the capabilities of technical means of communication, in particular, means of information and communication technologies. This article discusses the process of organization natural sciences teaching with distance education.

Keywords: ICT, distance learning, e-learning, e-resources.

In recent years, many opinions have been expressed about the use of information and communication technologies as a technological basis for distance education, which is associated with an increase in the capabilities of technical means of communication, in particular, means of information and communication technologies [1].

Due to the didactic features of these information technology tools, the following factors are used as the basis for various models of distance education [2, 3, 4]:

- the ability to quickly transmit visual and audio, static and dynamic, text and graphic data of any size to any distance;
- availability of capabilities for storing, editing, processing and publishing data in computer memory for the required time;
- the ability to provide interactivity through multimedia information and instant communication, specially created for didactic purposes;
- access to a variety of e-learning resources and numerous conference calls around the world via the Internet;
- the ability to organize various audio, video conferences and other communications in real time;
- Having the opportunity to talk and answer questions with any student, industry experts and other people.

The didactic capabilities and functions of such information and communication technologies are of interest for achieving educational goals. Thus, how to use information and communication technologies to solve pedagogical problems. What are their didactic objectives? [5, 6]

- organizing the provision of operational advisory, methodological, technical support to students;
- use of distance learning at any stage of the continuing education system;
- achieving the development of knowledge and skills by providing operational information on issues of interest to participants during distance learning;

- development of communication skills in students and teachers that allow them to express thoughts briefly and clearly, listen to the opinions of others, adapt to a controversial environment, justify and prove their own opinions, as well as develop similar skills;
- develop learning skills in a virtual simulated environment for practical training;
- Develop skills in receiving, sorting, processing and independently sending and receiving remote data from various sources.

In our opinion, these are, in a nutshell, the didactic functions of information and communication technologies.

However, when thinking about the didactic features and functions of information and communication technologies in distance learning settings, two important factors should be taken into account.

First. Teaching (rather than independent learning) by definition involves interaction between mentor and learner. Thus, the presence of a tutor in the educational process is considered mandatory, and he has the function of managing the educational process.

Second. Each educational process is based on a specific didactic concept and determines the choice of content, methods, organizational forms, and teaching aids.

In international experience, the following are recognized as distance learning tools:

- electronic textbooks, teaching aids, teaching aids;
- educational and methodological complexes (curriculum, study guide, recommendations, bibliography, glossary, test questions, paper and electronic forms of learning control tools);
- audio and video educational materials;
- computer training programs, multimedia applications;
- virtual laboratory training;
- electronic simulators;
- electronic libraries and media library;
- e-learning resources and addresses;
- virtual simulated environment;
- Monitoring programs.
- Textbooks and teaching aids in paper form and others.

Regardless of what learning tool is used during distance learning, existing experience emphasizes that it is necessary to provide students with the opportunity to study independently, refer to additional literature less frequently, and have constant consultations with a tutor.

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