

The Role of Virtual Educational Technologies in Teaching Network Technologies

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Abstract: *This article discusses the possibilities of developing students' competence in network technologies using virtual learning technologies.*

Keywords: *Network technologies, virtual learning technologies, competence.*

The technological approach to the education system and its development has its own history. According to the analysis of the results of research in this area, the development of the technological approach can be divided into three stages. In the first stage, the teaching process was carried out only by the teacher, and in the second stage, the method of creating written publications, ie textbooks and manuals, as well as didactic materials, was developed and introduced into the educational process. In the middle of the stage, the teaching technology is enriched in terms of content. At the same time, technical and software tools, teaching machines, programmed and virtual learning technologies are used for teacher-student communication.

In this regard, N.S. Matjanov [2] in the research work "Consistency in the formation and development of quantum ideas in the system of continuing education" proves that laboratory work, demonstration experiments, problem solving in natural and virtual forms, can improve the creative, independent thinking skills of future teachers.

A.O. Matlin [3] in his research work "Automation of the process of creating virtual simulators" argues that the advantage of using virtual simulators is the automated testing of student behavior.

In the scientific article of M.N. Morozov, A.I. Tanakov, A.V. Gerasimov, D.A. Bystrov, V.E. Tsvirko, M.V. Dorofeev [4] laboratories and simulation software systems are emphasized as an effective means of actively engaging students in the learning environment.

In her research, U.B. Bakhodirova [1] expressed the opinion that "from virtual laboratories developed in the field of microbiology, students will be able to perform laboratory tasks in virtual form at any time and place."

An analysis of the work of the scientists who conducted the above research shows that the use of virtual learning technologies in the teaching of network technologies is also considered expedient.

This includes concepts of network technology, including: the principle of operation of the network board, the process of writing data to the computer to be processed in the memory of the network card during data transfer, checking the memory cells of the network board chip, sending it to an external device; movement of information on the network board; the process of modulation and demodulation of signals; characteristics of regional, local and global networks; functions of bridges and gateways; data transfer protocols and their acceptable

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values; local area network topology, the process of data exchange in the local network, the location of data on the intranet and their search; the structure of the global computer network; data exchange on the Internet; the principle of operation of browser programs; email technology; web 1.0, web 2.0, web 3.0, web 4.0 technologies and their capabilities; network security, types of threats in the network, methods of access to information; the principle of operation of viruses; is a key tool in illuminating the activities of firewalls and attack capture systems.

Therefore, the use of virtual learning technologies in the development of students' theoretical thinking about network technologies, their competence in performing practical tasks has its own advantages, encourages them to think logically, teaches a scientific and creative approach to the study of topics, facilitates learning materials, is an important factor in developing professional competence. serves, provides the opportunity for independent use, helps to strengthen knowledge, forms a positive attitude towards science and the chosen profession.

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