Didactic Principles of Organizing Practical and Laboratory Courses on "Digital Technologies in Education"

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Abstract: This article talks about the organization of practical and laboratory training in the subject "Digital technologies in education" based on didactic materials. The article describes the methods of practical and laboratory training in "Digital technologies in education".

Keywords: education, digital technology, practical, laboratory, training, multimedia.

President Sh. As M. Mirziyoyev said, it is necessary and necessary to acquire digital knowledge and modern information technologies in order to achieve progress. This allows us to follow the shortest path of development. Because we do not have the right to forget that the intellectual and cultural potential is a unique asset and crucial in educating and bringing to maturity the owners of rare talents.

Today, digital technologies are rapidly developing and require keeping up with the times in every field. The use of digital technologies in the education system is of great importance in improving the quality of education and educating socially active young people in the present era, when the speed of information acquisition and use is very high. Previously, we conducted educational programs in the traditional way, i.e. lectures through bulky books and manuals. This, in turn, did not ensure that the quality of education was so high. Currently, the process of digitalization of education has begun to improve the quality of education.

The current state of the education system is characterized by the increasing role of non-traditional educational technologies. Learning by the learner with their help is much faster than with traditional technologies. These technologies change the nature of knowledge development, acquisition and distribution, deepening and expanding the content of the studied subjects, quickly updating it, using more effective teaching methods, and also significantly expanding the opportunity for education for everyone. will give.

We will answer the question of what is digital technology as follows: it is a modern form of business management. in it, a large set of data in digital form and the process of their processing serve as the main factor of production and management. Using the obtained results in practice makes it possible to achieve much greater efficiency compared to traditional forms of management. Examples include various automatic production processes, 3D technology, cloud technologies, remote medical services, production and delivery of products with the help of smart technologies, and various processes of storing and selling goods. In this article, we will focus instead on digitization in the education system.

In the conditions of modernization of education, determining the literacy and competence of students in "Digital technologies in education", creating didactic materials for practical and laboratory training, improving the quality of teaching, and improving the theoretical, methodological and methodological foundations are among the important issues. is one. In this process, the creation of a multimedia electronic educational complex designed for the information educational environment on the organization of practical and laboratory classes on the subject of "Digital technologies in education" in pedagogical higher educational institutions, rapid improvement of student knowledge during the

teaching process development of an online system of tests intended for assessment and control, the organizational structure of training sessions in the subject "Digital technologies in education" It is important to improve the didactic possibilities of using information educational environments from extracurricular educational processes in the subject of "digital technologies".

The purpose of teaching the subject "Digital technologies in education" in pedagogical higher education institutions is to teach the basics of modern information technologies, modern personal computers and their peripherals, system software, practical software tools, modern communication technologies, basics of Web design, programming consists of equipping with knowledge of software tools of Microsoft Office package.

The task of the subject "Digital technologies in education":

➤ to create a whole picture of informatics and information technologies;

➤ to reveal the role of informatics and information technologies in the life of every person and in the development of society;

➤ disclosure of the nature and capabilities of technical and software tools of informatics;

➤ is to create an understanding of the purpose and how to use information systems and technologies.

Until 2017, the name of the subject was called "Informatics and information technologies", and since September 2017, this subject has been taught as "Information technologies in education" in all higher education institutions. This subject "Information technologies in education" has been taught during these years, and on the basis of the sample program created in 2021, the subject "Digital technologies in education" has been taught since September 2022, and now it is taught in all educational institutions of pedagogical higher education institutions. lim students are bringing knowledge from "Digital technologies in education".

Practical training is a form of training that directs the teacher to engage in active dialogue with students, provides conditions for the implementation of theoretical knowledge in practical activities.

Practical training classes can be divided into two types. These are practical classes in subjects with and without lectures (for example, foreign languages). Practical training classes are conducted in strict accordance with science programs and work programs, as well as calendar thematic plans. A list of necessary literature for practical training will be provided. In the practical classes where there is a lecture class, the materials learned in the lecture classes are mainly reinforced with the help of exercises.

Practical training is used to achieve the following goals:

➤ arrangement of theoretical material.

➤ formation of skills.

➤ knowledge control.

In order to conduct an educational practical training effectively, it is necessary to take into account the following:

➤ his preparation, having question and answer techniques;

➤ the condition of the study group: its motivation, its organization;

➤ technical equipment of the educational process.

1 credit, i.e., 30 hours of practical and 1 credit, i.e., 30 hours of laboratory training are required for the subject "Digital Technologies in Education". The following topics are recommended for practical training: Coding of voice, graphic and textual information; Computer and mobile device operating systems; Utilities and utilities. Work with antivirus software; Automate the formatting and editing of text documents. Creating and editing a table in Word; Use of graphic objects in spreadsheets. Perform calculations in spreadsheets; Database management and filling; Manage slides in Power Point; Making office programs to communicate with each other (OLE technology); Getting to know the Corel Draw toolbar; Basic features of Adobe Photoshop. Create special effects using tools in Adobe Photoshop; work with Internet services; Create a web page. Options for creating a web page in HTML; Control tests and their creation. About creating custom tests in Ispring Suite; Technical and software means of information protection; Work with virtual laboratories.

Practical training should be conducted by one professor-teacher for one academic group in an auditorium equipped with multimedia devices. It is desirable that the classes are conducted using active and interactive methods, appropriate pedagogical and information technologies are used.

The following topics are recommended for laboratory training: Connecting devices to a system block; Assembling and configuring computer devices. Shell programs and archivers; Creating and editing graphic objects, tables in the Word program. Columnar texts; statistical processing of data in Excel and construction of their diagrams; Use of objects in presentation slides (image, diagram, table, sound and video clip). Animation effects; Creating educational presentations for the educational process. Creating text assignments using the Power Point program; Entering data using forms, creating queries and grouped reports from the database; Customizing the Corel Draw program interface. Creating images with different equipment; Creating images using simple geometric figures and various paints, creating images using Curves, sorting and combining objects in the Corel Draw program. Working with the "Peretekania" equipment to create dimensional images. Working with texts. Creating images using the Pick (pointer) tool of the Corel Draw program; searching and storing information on the Internet; Basic structure of a web page. Creating a blog, sites using an online constructor; Creating tests for the Moodle platform using the ISpring program; Create a bank of test questions in the MyTestX program Work with technical and software tools that protect information; Work with information protection software tools. Work with antivirus programs; Work with virtual laboratories. Khan Academy.

In this article, laboratory classes on the subject of "Digital technologies in education" intended for the organization of practical and laboratory classes on the subject of "Digital technologies in education" in pedagogical institutions of higher education (for undergraduate students of all fields of study) was improved on the basis of revealing the content of didactic possibilities of creation (requirements and principles) of the training manual (structure, stages and methods of creation). Also, in the process of teaching "Digital technologies in education", systems (local, regional and global) improved based on development.

In addition to the above, the organizational structure of the "Digital technologies in education" course is based on the integration of teaching technologies (communication, management, brainstorming) and the sequence of knowledge (linking, matching, information educational environments (educational portals, sites and platforms) in extracurricular learning processes (circles, knowledge competition, independent study) from the subject of "Digital technologies in education") revealed the content of the didactic possibilities of using.

The use of digital technologies in education is changing the way students learn. Using digital technology in classrooms can help students learn by better absorbing knowledge and visualizing difficult concepts.

In conclusion, it can be said that the introduction of digital technologies in various fields, not only in the education system, plays a big role in the modernization of the country's education system. It serves to organize modern education and increase the effectiveness of education.

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