Digital Technologies and their Role in Ensuring the Quality of Education

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Abstract:

The article provides information on the types and forms of digital technologies used in the educational process. In particular, it is argued that digital technologies consist of devices such as mobile phones and personal digital assistants that support the interactive and integrated delivery of SD – rom, DVD or Internet to a computer or digital audio and video, graphic and text information.

Keywords: Digital technology, computer, student, university, educational process.

Training of technology teachers according to educational standards is carried out in the direction of "Technological education". Universities have gained the opportunity to independently shape their basic education programs, and therefore digital technology training is implemented in different ways in the curricula for the preparation of future technology teachers.

The educational basis of the development of digital technologies can be the science of "Information technologies", which is included in the bachelor's curriculum in the main part of the cycle of mathematical and natural sciences. As a result of studying this subject, the student will: know the information and communication technologies used in education; must be able to use modern information technologies in educational activities and evaluate software products and the prospects of their use in solving professional tasks; must have software tools to organize and implement the educational process.

A similar subject has been included in the educational program for the preparation of a master's degree. As a result of mastering the subject "Information technologies in professional activity", the student: knows the main types of information technologies used in professional activity; should be able to use modern information technologies in educational practice [1].

Today, the field of future technology teacher training, pedagogy, according to the State Education Standard, the classification of higher education directions and specialties, 60112300 - bachelors in

the direction of "Technological education", 70112301 - "Education "Theory and methodology of education and training (technological education)" is being prepared.

Analysis of literature on the topic

U.N. on problems such as improving the training of technology teachers, their development in a digital educational environment, the role of digital technologies in improving the quality of education. Nishonaliyev, A.R. Khodjabayev, N.SH. Shodiyev, N.A. Muslimov, Kh.I. Ibragimov, E.I. Roziyev, O'.Q. Tolipov, N. Saidahmedov, D. Ergashev, Sh.S. Sharipov, O. Abduquddusov, E.T. Choriyev, O. Torakulov, J. Hamidov, A. Jorayev, U. Jumanazarov, O. Koysynovlar and many other scientists of our country carried out scientific research work.

Research methodology

The methodology of the article analyzes the professional activity of future technology teachers, technological potential, the importance and role of using digital technologies in training future teachers, starting with the analysis of scientific and increasingly popular sources.

Methods of analyzing the content of digital technologies in improving the quality of technology classes, working programs and manuals for improving the quality of education, scientific generalization on the use of modern web tools, future technology teachers on this research problem interview methods were also used.

Analysis and results

It is difficult to imagine today's world without digital technologies, a necessary condition for a person's effective and successful work in society is the formation of information culture. The basis of the same culture: the ability and skills to manage information flows, knowledge of the information environment, the laws of its operation, quick processing and use of it to make informed decisions, distinguish and filter information. The field of information and communication technologies (ICT) is digital technologies.

Improving the quality of higher education is determined by the use of new teaching methods and tools. Active learning requires students to be involved in the learning process. The widespread use of information and communication technologies helps to dramatically increase the effectiveness of active teaching methods for all forms of organizing the educational process: at the stage of independent training of students, lectures, seminars, practical and laboratory exercises, and at the latest, self-knowledge and applying skills in professional activities. Therefore, it is recommended to actively use ICT, that is, digital technology, in the educational process during the training of future technology teachers.

With the development of digital technologies, teachers and scientists have increasingly begun research and experiments on the introduction of computer technologies into the educational process of universities.

Modern scientific-pedagogical sources focus on the high potential of digital technology resources and the pedagogical conditions of using digital technologies in education during the professional training of future teachers are revealed.

It is noted that the use of digital technologies in the process of professional training of a teacher of modern technology should be comprehensive and integrated, cover the entire educational course and be implemented in the teaching of various subjects.

To determine the didactic features of digital technologies, M.P. Lapchik refers to:

➢ computer visualization and computer modeling of educational information about real and virtual objects, processes and events;

- storing large amounts of data and providing mobile access to them;
- providing quick feedback among the participants of the educational process;
- automation of calculation processes and information search activities;
- automation of educational activity management processes and control of study material acquisition [2].

It is known experimentally that with a verbal presentation of the material in one minute, the listener is able to perceive and process a thousand traditional units, and with the "connection" of the visual organs up to 100 thousand. Therefore, the high efficiency of using digital tools in teaching is based on visual and auditory perception of the material.

Today, digital technologies of higher education should be a reliable didactic tool for the student, with the help of which he can get sufficient, accessible, diagnosed (both by the teacher and by the student) necessary knowledge on the subject. can occupy independently.

The introduction of digital technologies, including in the training of students, remains an urgent problem that requires a quick solution. It is impossible to achieve high-quality education and ensure the successful implementation of the new content of higher education without the introduction of modern educational technologies.

Digital technologies are viewed as part of a toolkit, and the choice of tool should match the content of the curriculum. From a pedagogical perspective, it is generally accepted that digital technologies have the potential to transform and add a new dimension to learning.

The term "digital technology" has many meanings, but in this case it is used to refer to digital information using any integrated combination of audio and video images (two-dimensional, three-dimensional) and text. In its most primitive form, the term "digital" refers to presentation content, sometimes using combinations of sound, images (static, animated, etc.).

In this sense, any presentation that includes, for example, the use of a VCR and a Slide Show can be considered digital. Digital technologies can be delivered to a computer via CD-ROM, DVD, or the Internet, or on other devices such as mobile phones and personal digital assistants that support the interactive and integrated delivery of digital audio and video, graphics, and textual information.

A unique feature of digital technologies that should be used in the training of students (as opposed to primitive forms) is the ability to be in close contact with the user. In fact, we can distinguish two areas of application of digital technologies in the training of future teachers:

1. Within the university: this refers to all tools that directly contribute to lectures, practicals, laboratory sessions, etc. Here we mean the use of video and audio tools, personal computers and other equipment (as mentioned above) with the close interaction of the student and related equipment and creating an optimal information space for this.

2. Outside the educational institution: This refers to communication technologies such as the Internet, chat rooms, newsgroup forums, long-distance exchange of materials, etc. The power of these tools lies in their ability to interact and collaborate for effective knowledge transfer, which includes distance learning. In the past, teaching usually required the teacher and students to be together at the same time to interact, but now thanks to these technologies, teaching can be done over long distances.

The issue of digital programs in the educational environment also involves the separation of two main groups of programs related to student behavior: passive or interactive. The first group is the tools used by teachers simply to increase the explanatory power of the educational material: video, sound, images, graphics, etc. In this case, students do not interact with digital tools, that is, the

current content of the information presented in the lesson does not change depending on the behavior of the students.

Interactive digital tools can modify existing content based on student behavior: students modify content based on their interests, levels, or assignments. The tools of interactive digital technologies are used like passive tools such as sounds, videos and texts, but they can also take on special tasks: recording, rewriting, changing forms, etc.

Digital products provide a wide range of opportunities for various aspects of education. The main features and advantages of using digital tools in the educational process include:

✓ simultaneous use of several channels of the student's perception during the educational process and thereby achieving integration of information provided by different sensory organs;

✓ the ability to simulate complex real experiences;

✓ visualization of abstract information through dynamic representation of processes;

✓ opportunity to develop students' cognitive structures and interpretations.

The presence of digital tools during lessons allows teachers to plan activities that introduce an element of interest into the learning process. They allow you to create an actively controlled communicative environment in which learning takes place. Thus, the student's interaction with the computer turns from a simple exchange of information or the execution of commands into a multifaceted activity in this environment, as a result of which truly unlimited possibilities open up for the student.

Digital technologies are becoming increasingly popular in education as a means of engaging students in learning and providing them with many ways to express themselves and demonstrate their work. It also allows the teacher to use their curriculum in an innovative and modern way, to be flexible in delivering information to each student. When using digital tools, the teacher acts as a mediator, consultant, or leader, helping students gain access, organizing and creating challenging situations to engage and motivate each student to learn [3].

Digital tools include speech input and output devices; scanners, which are already widely used (because they allow you to automatically enter printed texts and drawings into the computer); high-quality video and sound boards, video grabber boards that take the image from a VCR or a video camera and enter it into a computer; high-quality acoustic and video reproduction systems with amplifiers, sound speakers, large video screens.

Digital technologies are divided into software and hardware. The hardware side of digital technologies can be represented by standard devices — video adapters, monitors, disk drives, hard drives, and special devices — sound cards, CD-ROM drives, and speakers.

A software side without a hardware side is pointless. Software tools are divided into practical and specialized ones. Application programs are window programs themselves that provide information to the user in one form or another. Specialized tools tools for creating digital programs — digital projects (for example, software for creating digital presentations MicroSoft Power Point). This includes graphic editors, video image editors (such as Adobe Premiere), audio creation and editing tools, and more.

Digital Presentations are comprehensive learning resources that can bring together all the digital learning resources needed for a particular lesson. A tool for creating digital presentations is a Power Point program that is included in the office suite of any PC with the Windows operating system. At the same time, the interest of the student increases and his direct participation in the teaching of a certain subject increases. And here the presentation options are used not only to visually present the main concepts of the subject, but also as part of the game activity of each student.

For example, when designing products in technology classes, children are asked to choose the right type of collar with a mouse for better absorption. SMART Notebook is the software that is the foundation of the SMART learning environment.

Each Notebook (Version 10) file consists of a collection of pages, each containing its own objects, properties, and settings. You can add hand-drawn objects, geometric shapes, straight lines, text, graphics, and more to the page. Interactive whiteboards are often used in educational institutions as a didactic tool for active learning of a large amount of educational materials, that is, as a digital technology. For example, using this program, you can create didactic game tests and game elements for self-management of students: interactive cube, dominoes and Question flipper plate.

Also, to create digital presentations, you can use other programs that ensure the interactivity of the created educational materials. Digital Workshop Corporation's products (Opus Creator, Opus Pro) have unparalleled interactive features, but are superior to Matchware Mediators in terms of simplicity and ease of use.

Summary

Thus, information and communication tools significantly increase the technological efficiency of teaching and mastering professional subjects (compared to traditional forms, methods and tools of educational and methodological support), improve the information environment through optimization and programming, o "allows you to automate the process of providing educational material and control the knowledge of students.

The perspective of the study is to develop methodological recommendations for adapting future technology teachers to the information and communication environment, to develop tasks aimed at using ICT and pedagogical programs in the pedagogical activities of each student.One of the main tasks of preparing future technology teachers to realize their professional potential in the conditions of informatization of education is the independent acquisition of professional knowledge, the skills of using it for the development and implementation of methodologically appropriate pedagogical software. is to create appropriate conditions for development.

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