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Training Of Teachers Of Technological Education And Use Of Information Technologies In The Lesson Process

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Abstract: This article is a comprehensive teaching and learning tool for computer literacy, the use of information technology in the process of technological education, the acquisition of skills, the use of information resources, the creation of electronic textbooks, the effective use of computer-based teaching methods. . The e-textbook provides students with interactive methods, psychological and pedagogical, modern information technology, audio lessons and video animations.

Keywords: Computer literacy, information technology, information resources, computer tools and programs, interactive methods, audio lessons, video animations, didactic tools, modular system, global knowledge, virtual laboratory.

Due to the rapid development of technology, engineering and science, the content of knowledge, skills and competencies that a future teacher of technological education must have in higher education institutions is constantly changing and rapidly increasing in size. This, in turn, requires that they have a system of knowledge, skills and competencies that enables them to make effective use of information and computer technology in their future careers. In other words, the effective use of information and computer technology as a didactic tool in the training of teachers of technological education is an important factor in improving the quality of education provided to them. However, the analysis of existing experience in the application of information technology in the process of training teachers of technological education showed that there are the following shortcomings:

- Insufficient readiness of pedagogical teams in the field of technological education of higher education institutions to use information technology in the process of training teachers of technological education;

- Insufficient electronic textbooks (ED) that allow to perform practical exercises in the process of technological education, the lack of methodological developments for their application.

Development of basic mechanisms of its integration with science and industry in the organization of technological education, its implementation, individualization of reading, independent learning, development and mastering of technologies and tools of distance education, using a modular system based on new pedagogical and information technologies Accelerating student learning is one such urgent task.



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Information technology in education is a set of forms, methods and means of implementing a theoretically based educational process that allows to achieve the set educational goals. In doing so, it relies on appropriate scientific modeling (design), in the process of which these goals are given in the same sense and the ability to objectively measure and evaluate the individual characteristics and qualities of the learner at a certain stage of its development.

"**Information technology**" in any pedagogical system is a concept that interacts with scientific issues. However, if the scientific issue represents the goals of teaching and education, then information technology represents the ways of teaching and educating, the means to achieve them. In this process, the identified qualities that need to be formed and developed in students in the structure of the scientific problem participate as learning objectives in certain conditions and generally determine the specific nature of the educational content.

Information technology- is a set of regulated and organized systems and applications that collect, process, store, represent, distribute, transmit and deliver information to the consumer using computers and telecommunications to solve various problems. Extensive computerization of information processing processes is the content of information technology. Therefore, the computer and its devices are at the center of all modern information technologies and organize their maintenance. While hardware is important, information technology is not the only type of software, it can include software, information software, organizational software, and more. The combination of the four types of supply allows to perform information support tasks on information processing.

Information - educational environment is the formation and development of learning activities of the learner when a set of conditions for the emergence and development of the process of direct and inverse communication between the learner and the teacher (teacher) using information technology.

The introduction of computer-based technologies for receiving, processing and creating new information, ie a computer performing a certain type of activity and a set of software implemented in it is called information technology. Today, in the information age, for the first time in history, many areas of human activity are associated with the processing of information, not with material things. Therefore, today it is important to teach young people to live and work in the information age, to form from them the skills of collecting, storing, analyzing and transmitting information. These, in turn, play an important role in the development of many skills of students, including inventive skills, as before proposing any new idea it is necessary to study in detail the field under consideration, find new information and relate it to the proposed solution. In order to perform these tasks, of course, it is necessary to process a large amount of information that cannot be stored in ordinary human memory. The capabilities of information technology make it easy and effective to solve this problem through automated training and information systems, knowledge banks and data banks. In this regard, in recent years in our country a lot of attention has been paid to this area.

At present, the curriculum of technological education includes such subjects as "Computer Science and Information Technology", "Internet System", "Fundamentals of Mechanization and Automation", "Electrical Engineering and Radio Engineering", which introduce students to the application of information and computer technologies. Practice shows that despite the widespread



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development of information and computer technology, they do not have enough theoretical and practical, scientific and methodological basis for use in the training of future teachers of technological education. The direction of technological education of higher pedagogical educational institutions There are the following two directions of the use of computer technology in the educational process.

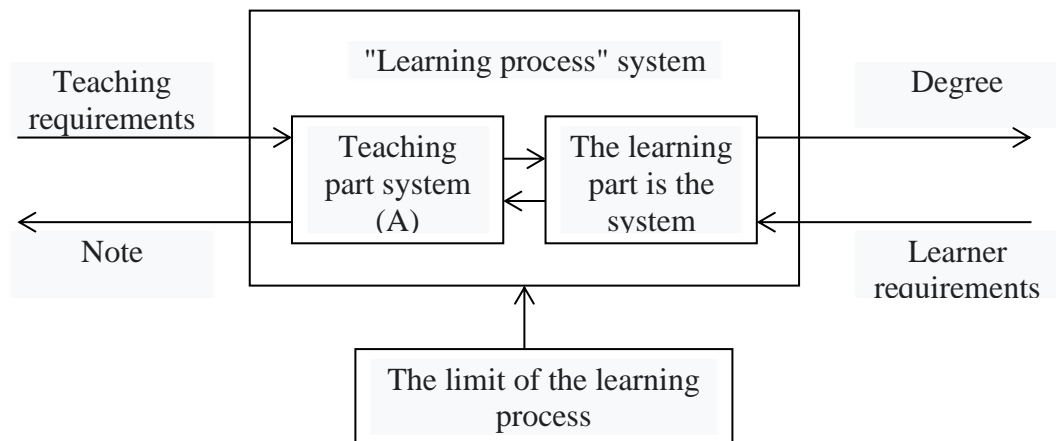
In the first direction, the acquisition of knowledge, skills and abilities leads to the knowledge of computer capabilities, the formation of skills to use them in solving various problems.

In the second direction, computer technology is an important tool for improving the efficiency of the educational process.

The main purpose of the use of information technology in the educational process in the field of technological education of higher pedagogical educational institutions is to expand the intellectual potential of future teachers of technological education. Nowadays, the concept of teaching itself is changing and the acquisition of knowledge is being replaced by the use of information, the ability to acquire it with the help of a computer.

The use of information technology in the educational process is a completely legitimate phenomenon. Only the effectiveness of their use in education depends on a clear idea of the substitution of complex interactions that arise in the system of teacher-student interaction. Information technology is changing the purpose and content of teaching, new methods and organizational issues are emerging.

The use of modern technologies (e-mail, Internet, Web-technology, multimedia technology, distance learning, etc.) in the educational process requires an in-depth study of their scientific and methodological basis. In particular, looking at this process as a "human-computer" system raises a number of unresolved issues. In this system, as in any other system, there are controllable and controllable objects, and there are direct and inverse relationships between them. Introduced into this system as a new object and the basis of information technology, the modern computer has an impact on the learning process, which in turn leads to certain changes in the method of teaching. With this in mind, we consider a structural-systematic analysis of the design of the "human-computer" educational system. We make the following definitions for the composition of the participants in the learning process: A - "system of teaching part"; V - "learning unit system". The learning part system is the information carrier and the learning part system is the information receiver or consumer. In this case, the interaction of systems with each other and with the external environment in this section refers to the exchange of signals in the system, which we call the learning process.



Scheme of interaction of part systems in the process of abstract learning

These analyzes show that the impact of computers on teaching content opens up many opportunities for students. This is primarily due to the high capacity of computers to display educational materials. Computers, on the other hand, incorporate various heuristic tools into teaching content. Another important aspect of computers is that they provide a real opportunity to create integrated learning disciplines.

Informatization of the process of training teachers of technological education includes: organization of educational and methodical work in technological education; increasing demands for changes in the role of the teacher of technological education; a sudden increase in the possible volume of information resources; the growing importance of information services, especially educational and scientific ones; the positive impact of the use of virtual stands and laboratories in the training of teachers of technological education; creating opportunities for future teachers to have a clear idea of the lessons based on the creation of software, etc. At the same time, informing the process of training teachers of technological education will address the following critical issues: improving the quality and effectiveness of technological education; ensuring and facilitating educational demonstration; ensuring the integration of national education into the world education system; individualization and differentiation of teaching in the process of technological education; providing feedback and monitoring learning activities; organization of exercises and independent training in the process of technological education; saving study time; computer visualization of educational information; modeling of studied events and processes; computer-based laboratory work; create and use a database; formation of information culture, etc.

In determining the forms and methods of using computers in the process of training future teachers of technological education, it is necessary to take into account their use in meeting the need for information in creating new technical solutions and developing effective ways to implement it. Based on the analysis of the role of future teachers of technological education in improving the use of information technology, we have identified the following main areas of use of computers in this process:

1. As a didactic tool that helps to solve specific problems of the educational process.



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2. As a didactic tool that serves to increase the level of information in the acquisition of general professional subjects by students.

3. As a tool to ensure the implementation of the polytechnic direction in the training of future teachers of technological education.

In our research, in the process of training future teachers of technological education, we used a computer-based programmable teaching method as a basis for the formation of skills and competencies in the use of information technology.

The convenience of using computers in the implementation of programmed learning is that when the test question is answered incorrectly, the student has the opportunity to return to the task with additional information from the information-educational environment developed.

Since one of the main tasks in the implementation of the use of information technology in the training of future teachers of technological education is related to finding and processing information, the use of computers as a didactic tool that provides information in this process is of particular importance. It is known that computers work as a device that collects, stores, processes and transmits information.

The use of computers in the training of future teachers of technological education is a didactic tool to improve the quality of education, as well as the formation of students' understanding of the possibilities of this technique in the process of solving relevant problems.

Information technology is divided into two groups based on the requirements of modern production and management processes. The first is based on the use of text editors, spreadsheets, databases, graphics editors, multimedia and telecommunications technologies, and is called a universal type of information technology. The second group, called specialized information technology, includes computer technologies used in the implementation of activities in a particular specialized area, such as information technology in education. Information technology of teaching is a teacher's technology created as a result of computerization of the processes of teaching and receiving knowledge, which is a key part of any educational technology. The main task of computerization in improving the current and future education system will be to create the latest methods of using information technology in teaching and bring them into the educational process.

Based on the above interpretations, it is appropriate to define the order of use of computers as performing instructional, skill-building, and control tasks. When working in a teaching mode, a computer using a training program helps the student to acquire new knowledge in accordance with the level of knowledge acquired. Execution of computer drawings in the order of skill formation serves as a tool to facilitate the development of technological documentation of the product, which describes the technical solution of the invention. In the control mode, the computer calculates the student's answers to the test questions and provides feedback to the student and the teacher. Provides the student with additional information to correct the error and allows the tasks to be performed in a sequence that goes from simple to complex, depending on the level of complexity.

Thus, the question of the level of computers in the creative field today and their role in the process of training future teachers of technological education can be answered as follows: computers create freedom for the person working with them to fully develop their abilities through a set of capabilities. Now, a person will have the necessary time to expand his knowledge in different fields, conduct various researches and find his original place in life without having to



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specialize in one field for the rest of his life. In the end, man becomes a controller of the whole process, not a subordinate machine that collects and processes data. In this sense, information technology is changing the way of life and work of all mankind, creating ample opportunities for them to deepen their knowledge and improve their skills.

The effectiveness of the use of information technology in education as a didactic tool in the education system is determined by the following:

1. Information technologies of modern education open up opportunities for students to access non-traditional sources of information, increase the effectiveness of independent work and create ample opportunities for creative activity.

2. Information technology of teaching allows the teacher to use different forms of teaching and their combination, that is, to create the necessary learning environment for the implementation of methodological goals. With the use of information technology in teaching, the teacher will be able to change computerized teaching and control programs depending on the circumstances.

3. As a result of the use of information technology in teaching based on the use of automated learning and information systems, teachers will not only increase their level of information availability, but also have access to information sets from almost all over the world. It was clarified that the order of use of computers in the formation of the professional activity of future teachers of technological education consists of tasks that create and control teaching skills, as well as their classification.

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