



## PROBLEMS OF TEACHING STUDENTS THE SCIENCE OF "INFORMATION TECHNOLOGY IN TECHNICAL SYSTEMS" USING DIGITAL TECHNOLOGIES

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### Annotation

This article presents the problems of the Information Technology course in teaching in technical systems based on digital technologies in the theory and practice of pedagogy. It is also theorized that the introduction of automation and digitization systems in an informed society is a prerequisite for the implementation of effective and high-quality work in various sectors of the economy, as well as the introduction of digital technologies into the higher education system.

**Keywords:** digital technology, technical systems, hierarchical teaching, scientific and methodological system, model, etc.

### Introduction

Rapid changes in the form of education in the implementation of digital technologies in educational institutions in the technical direction of Higher Education, a specially organized environment, interaction and changes in its levels (student – teacher, student – student, student – teacher – student) require students to carry out modern specific competencies, including formations associated with digital technologies, in accordance with the requirements of the period.

The problem of training students at the level of the requirements of the period in the implementation of the requirements, modern requirements and necessary conditions for an informed society, advanced in these legal documents, is an urgent problem in the late years of the last century and at the beginning of the Twenty-First Century.

The rapid changes taking place in our country and society contribute to the emergence of modern requirements for students who receive education in technical educational institutions of higher education in an informed society over the past period, and require them in the future to reorganize their professional activities, to include "active" and methods and technologies of activity, and to effectively use other means.

Education in technical higher educational institutions of higher education in the



adaptation of the process as much as possible to the achievements of modern science in Ravish in accordance with the requirements of the period, students do not have the opportunity to implement educational innovations, modern curricula, modern means of organizing interaction, educational management systems, etc. without introducing them into practice in everyday life.

**Purpose and problem of research.** The peculiarities of the educational process of technical educational institutions of higher education in an informed society are due to the modern implementation of the course of Information Technology in technical systems to students in accordance with the requirements of the period for teaching. In the science and practice of pedagogy, such non-traditional terms as "non-traditional education", "non-traditional group" began to be applied more and more in practice. It is noted that the "non-traditional method" of education and this "reform" is intended to be introduced first in the minds of students in technical higher education institutions, and then in practice in its further activities. In the environment of digital technologies, the Information Technology course in technical systems is understood as a modern model of the organization of training on the basis of "non-traditional education" in accordance with the requirements of the period, and students mainly independently study theoretical materials on the recommendation of the teacher, and problems, tasks, projects related to the topic being studied in the It is important for the teacher to understand (and accept) that the students themselves, and not the teacher himself, should actively organize the educational process, and it is desirable for the teacher himself to become a person who manages the cognitive activity and learning of more students.

**Basic analysis.** As a result, it can be concluded that in technical systems, which are studied in different directions of educational institutions of higher education in an informed society, the Information Technology course professor teachers should be able to use digital technologies and be qualified in the use of internet capabilities. In fact, from educators who teach the Information Technology course in technical systems that work in the environment of working with digital technologies, the following:

– To work on the internet as well as to put into practice in everyday life various forms of Organization of the educational process inherent in digital technologies (digital education) ;



- Readiness to improve their skills in the ICT field (methods of providing educational material, Organization of interaction, monitoring and evaluation of knowledge, etc.);
- own methods of development and creation of interactive training courses and programs;
- knowledge of the specifics of digital technologies(digital teaching – and linking production activities with practice;
- to take into account the principles of digital teaching in the organization of the educational process and knowledge control;
  - In order to achieve the maximum pedagogical result in the introduction of digital technologies into the educational process, it is required to carry out such skills as technological, organizational, social economic, psychological, information and communication opportunities.

It can be seen from this that it is advisable for a professor teacher using digital technologies(digital education)to the educational process of educational institutions in the technical direction of higher education to organize the educational organization process of the Information Technology course in technical systems, as well as in accordance with the requirements of an informed society.

Educators of the educational institution in the technical direction of Higher Education, taking into account the peculiarities of digital technologies, include:

- formation and clarification of the goals and objectives of the Information Technology Training Course in technical systems;
- planning an educational course in technical systems, taking into account the goals and objectives set for mastering the Information Technology course;
  - the presence of difficulties that may arise as a result of studying the Information Technology course in technical systems and independently searching for ways to eliminate them;
- selection of material for educational activities, taking into account the possibility of students ' perception of it;
  - selection and development of a system of creative tasks to achieve the educational goals and objectives set for the successful acquisition of an Information Technology Training Course in technical systems;
  - the choice of a more rational form of organizing classes from the Information Technology Training Course in technical systems, in particular, the development of assignments for organizing independent work;
- it is advisable to take into account such as the choice of a control system and the most convenient assessment system.



The content of pedagogical activity in educational institutions in the technical direction of higher education in relation to digital technologies requires modern fundamental changes in accordance with the requirements of a number of periods. First of all, the activity of developing training courses is much more complicated, since its technological foundations are rapidly developing. This situation requires educators to have special skills to work in modern conditions in accordance with the requirements of the period, since students of the direction of full-time education will not have the opportunity to create an electronic course by transferring educational materials to a computer form. Secondly, the basis for the practical implementation of the means of modern information technology and digital technology, in contrast to the classic model of education, in which pedagogical personnel are the main person and remain so, is required to actively organize its educational process, gradually choosing a specific trajectory using distance education tools. An important task of professors of educational institutions in the technical direction of Higher Education will be to support students in their further activities, that is, the successful assimilation of this material in the endless stream of educational materials will help to solve the problems that exist in the assimilation of this information. Modern information communication technologies help closely to activate the interaction of the teacher with individual students, but this is very time-consuming and requires the teacher to perform additional and separate actions.

A teacher who teaches using the tools of digital technology is understood as a teacher who provides methodological and organizational support to students within a certain program of an electronic (digital) course of study, has knowledge in the field of Information Technology, taking into account the peculiarities of the distance learning system and the psychological characteristics of interaction with students in the process of Such a specialist is considered a specialist who has successfully mastered traditional educational technologies and can use it remotely.

The Information Technology course in technical systems has the following characteristics of the activities of a digital education teacher:

- taking into account the peculiarities of mediation communication in teaching;
- the use of Information Technology in order to find and convey educational materials, as well as to ensure constant communication;
- work on support, correction and orientation of student activities;
- includes the organization of continuous reports on increasing student motivation.

As a new task of the teacher - to support students in his activities: it is important to contribute to his successful development in the sea of educational information, to



help solve the problems that have arisen, to master a large and diverse material. In this regard, taking into account the importance of this function of teachers in the world educational community, the modern term – facilitator (contributor, helping to learn, creating favorable conditions) began to be applied to practice.

The position of the teacher in the educational system is also determined by the requirements and problems of digital teaching in accordance with the requirements of the qualitatively changing period. In the environment of digital technology and digitization, neither a professor of higher education institutions nor a school teacher has led to a situation that will now become the "predecessor" of knowledge. Any scientific and educational (unfortunately, not only reliable) information can be easily found on the global network and, if desired, studied independently. A seemingly imaginary situation has appeared-many already think that the teacher is not needed at all, you can learn everything yourself. But behind the simplicity of mastering this easily accessible information, the pedagogical problem of optimizing and correctly choosing educational materials, creating an effective system of exercises for their assimilation, arises more clearly and sharply. And it turns out that without the instruction of the teacher, his direction and support, it is practically impossible for students to master any topic, while the teacher's urine is considered extremely important and necessary today.

Thus, it can be noted that the activities of a digital education teacher, in contrast to the activities of a "traditional" teacher, are changing: functional responsibilities are distributed differently between the teacher and students, students receive a "new" part of knowledge", the level of competence of the teacher'S ICT is the composition of his professional activity, the organization of an innovative pedagogical process does not.

Difficulties in the implementation of digital education for the teacher include:

- increased requirements for the teacher for Responsibility, mobility, the need to constantly update the educational material, the formation of a personal (competent) style of communication. It should be noted that if, within the framework of digital education, the teacher does not like the student, the student can reduce communication to a minimum;
- the need to adapt the teacher to the peculiarities of pedagogical activity in digital education in terms of his technical, methodological and psychological skills and abilities;
- the complexity of digital education (course development, teaching materials, student training and support, dialogue organization, etc.).



## Conclusion

During the study, it was found that due to the important features of organizing interaction between students of the educational process in the conditions of digital education, the teacher must master a new type of professional activity, form special competencies, change approaches to building the educational process using digital tools, learn to present the content in different formats than traditional, it is necessary to be prepared to develop content for the educational management system and develop flexible models of the educational organization taking into account the individual characteristics and achievements of students, to manage (prevent) new risks in professional activities.

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