DIGITAL TECHNOLOGIES - DEVELOPMENT FACTOR IN PROFESSIONAL TRAINING OF FUTURE ENGINEERS

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Abstract. *This article set the goal of studying the use of digital technologies in the higher education system of our republic, determining the priorities for the development of the educational process based on an analysis of their capabilities, while the analysis was carried out not only in terms of the importance of digital technologies in education, but also on the form in which they are being implemented.*

Keywords: *digital technologies, information and communication technologies, higher education system, modern education, digital knowledge.*

Today, digital technologies are developing rapidly and requiring to keep up with advances in all areas.

In the context of international globalization, the large-scale introduction of digital technologies in all areas of modern life is accompanied by the widespread use of Internet technologies.

In the new information reality, the lifestyle of a modern person puts forward requirements for the development of information culture and information technology competence.

At the same time, the low level of information culture of modern specialists has become a serious obstacle to the qualitative development and modernization of digital technologies.

Therefore, with the formation of new digital competencies, along with basic knowledge, changes in the educational process become the content of lifelong learning; when moving from the paradigm of fundamental training to the paradigm of lifelong education, it is necessary to provide opportunities for digital education.

The process of digitalization in education is developing in connection with the introduction of information technologies.

Firstly, effective digital technologies and tools used in educational organizations are widely used in many other areas of activity.

Secondly, educational organizations recommend using the possibilities of digital technologies in the development of education (choice of direction, variety of educational materials, challenges in additional education), increasing student motivation (interactive educational materials, "educational games"), and contribute to the regular activities of students, teachers and managers (control, reporting, verification of work).

As for the concept of "digitalization", it should be noted that many researchers explain its content much more broadly than it seems.

There is currently a significant shift in utilization levels in digital user device audiences. There are computer labs for teachers to use their personal digital devices and for students to use information technology. Classrooms are equipped everywhere with modern electronic devices, especially laptops and tablets. It is necessary to create conditions for the collaborative work of teachers and students, for this it is best to use:

• "smart" boards (Smart Boards),

• "smart" tables (Smart Desks) and other devices.

Digital technologies make it possible to individualize the learning process, while artificial intelligence makes it possible to analyze in detail the processes in the educational system and design the most effective learning path for students.

In the context of the development of an ICT-technological educational system, the teacher fills it, determines the didactic goals of finding and adapting new means of achieving an action, predetermining its nature.

Accordingly, the need for engineering personnel with new competencies is increasing, which requires the modernization of the process of their training and gives reason to talk about the digital transformation of production and education and their interaction.

The first process of digitalization of education makes it possible to distinguish between digitalization and informatization, and if informatization is aimed at the widespread introduction of information technologies to improve the quality of existing processes (technological, pedagogical, production, etc.), then digitalization is aimed at improving existing and creating new models of artificial activity. intelligence on a broad level. An example of this is the University 3.0 model.

The second digitization process allows us to understand the principle of the interaction of virtual and physical spaces - a complementary goal established by the constant mutual interest of two elements (student and teacher) seeking to integrate and summarize the details.

Digital technologies are changing this movement in accordance with the principle of intelligent mobility, allowing you to speed up the learning process and make it on time. Thus, artificial intelligence is the fourth phenomenon of digitalization, meaning a gradual transition from automation to intellectualization.

The impact of digital technologies on the essence of professional training is carried out at three complex hierarchical levels.

At the first stage, the innovation-strategic stage, knowledge is formed, an innovative development strategy, the implementation of which changes the characteristics of all types of intellectual assets of the industry (library stock, databases, patents, licenses, standards). , regulatory documents, technological and project documentation, software, R&D results) which ensures high productivity and efficiency and increases competitiveness in new national and international industrial markets.

The second stage - functional activity - is a systematic activity of an engineer, the content of which is determined by successive stages of the knowledge life cycle, the names of which correspond to a certain level. Types of operations with information objects (identification, creation, processing, storage, distribution, use of knowledge, etc.). At this level, the problems of overcoming obstacles in interpersonal relationships, creating employee training management systems aimed at quickly adapting graduates of specialized education to the specifics of the industry and the changes taking place in it are discussed.

At the third stage - instrumental and technological - information technologies ensure the interaction of natural and artificial intelligence in a hybrid environment, including the formalization of content into an ontological form (knowledge base) and a control mechanism through scientific conclusions. Such systems based on artificial intelligence technologies will become the sphere of professional activity of an engineer, as a result of which the requirements

for the competencies of a future engineer will change in connection with the use of such tools and their development.

Today, digital transformation affects almost every field of activity.

The term "transformation" is opposite to the concept of "profession", from the point of view of O. I. Genisaretsky, the profession is aimed at gaining experience and specific professional skills, and transformation involves the continuous development of a person, taking into account emerging tasks and the results of scientific predictions. AN Whiteden describes transformation as an open network structure in which human abilities are formed.

The methodological foundations of the transformation are multifaceted, which implies a transdisciplinary synthesis of knowledge from various disciplines: natural, technical, socio-humanitarian and philosophical.

By transformation, we mean the ability to change and expand the main labor function to solve new problems, to act in a higher format of the profession in conditions of uncertainty. In this sense, transformation is always associated with the versatility of the areas included in professional activity, which implies a transdisciplinary synthesis of knowledge from different disciplines and a transdisciplinary structure. The emergence of transformation is directly related to the fact that initially the processes of differentiation and specialization within a certain type of labor activity led to the emergence of a large number of narrow circles.

In the processes of globalization of specializations, as a result of excessive mobility of the boundaries between specialties and professions, professional areas first appeared (groups of related professions with similar qualification requirements and having a network structure), then transitions (open network structures with universal qualifications).

A comparative analysis of existing approaches to determining the important characteristics of a profession shows that all of them are currently in demand, and each of them complicates and complements the previous one. At the same time, the holographic approach, along with the competency-based approach to determining the essence of the profession, becomes relevant in this work to reflect the necessary changes in the engineering profession in the context of increased labor activity.

The analysis of trends in the modernization of the profession of future engineers is carried out on the basis of the atlas of the profession of future engineers in the field of education, taking into account the existing ones. To date, there are obstacles that negatively affect the work of engineers, namely:

- insufficient development of communicative competence in the field of network interaction with various subjects of the educational process, especially parents and employers;

- insufficient analysis of the system (internal and external factors) of the further development of the future engineering profession in accordance with the current professional standard and the elimination of identified obstacles to professional growth;

- the need for self-development and self-education, including the skills of cognitive motivation;

- creative, communicative, organizational skills and emotionality of speech, systematic thinking, adequate self-esteem, initiative, responsibility, objectivity, professional mobility, stress resistance, regulatory functions, ICT competence, design and research competence.

Thus, the process of professional training of future engineers is interconnected with education and is logically carried out with the help of a complete chain of repetitive actions. aware

of new technologies, they know how to implement them in life, they know how to improve old things, which is considered the main force.

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