The Problem of Training Future Engineer Personnel on the Basis of Cloud Technology in Technical Specialties of Higher Education

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ABSTRACT

This article provides a theoretical analysis of the current state of the problem of preparing engineers for professional activities in the context of cloud technologies. In addition, the features of multi-stage preparation of teaching staff for professional activities using cloud technologies in the conditions of digital education and problems in their implementation are presented.

Keywords: Digital education, cloud technologies, professional activities, multi-level training, distance learning, distance education, e-learning and m-learning

Introduction. The technique requires changes in the educational format of the introduction of cloud technologies in higher educational institutions, a specially organized environment, interaction and changes in its levels (student – teacher, student – student, student – teacher – student) from educators to new specific competencies, including those associated with digital technologies.

The problem of training future engineer personnel at the level of requirements of the period in the implementation of the requirements put forward in legal regulatory documents, modern requirements and the necessary conditions for an informed society has become relevant this problem, which was put forward at the end of the last twentieth century and the beginning of the twenty-first century.

Scientific novelty of the article. Fundamental changes taking place in society have contributed to the emergence of modern requirements for future engineers who receive education in higher technical educational institutions in an informed society over the past period, and require them to reorganize their professional activities, include "active" and methods and technologies of activity, and use other means. Technical education in higher educational institutions when adapting the process as much as possible to the achievements of modern science in accordance with the requirements of the period, there is no possibility of implementing future engineer personnel without introducing educational innovations, modern educational programs, new means of organizing interaction, educational management systems, etc.into practice in everyday life.

Literature review. In an informed society, technical higher educational institutions with a change in the specifics of the educational process in accordance with the requirements of the period for future engineer personnel, he is no longer considered the main person within the framework of Education. In pedagogical science and practice, non-traditional terms such as "non-traditional education", "non-traditional group" are increasingly used in practice. It is noted that the "unconventional transformation"

of education and this “isolationism” should occur first in the minds of the future engineer cadre, and then in his activities. Today, "non-traditional education" is understood as a modern model of the organization of education in accordance with the requirements of the period, in which students study theoretical materials on the recommendation of a teacher mainly independently, and problems, tasks, projects related to the topic being studied in the audience (or on the internet) are actively discussed. It is important that not the teacher himself, but the future engineer understand(and accept) that the staff (student) must actively organize his educational process, and the teacher himself becomes more the student's cognitive activity and the person who controls learning.

- As a result, it can be argued that in an informed society, teaching staff of technical universities should be able to use digital technologies and be qualified to use internet capabilities. Indeed, in the environment of working with cloud technologies, the future engineer follows from the shots:

- To work on the internet and to practice various forms of Organization of the educational process characteristic of buluili technologies;

- Readiness to improve their skills in the field of ICT (methods of presenting educational material, Organization of interaction, control and assessment of knowledge, etc.);

- own ways to develop and create interactive training courses and programs;

- to know the specifics of cloud technologies and associate them with the practice of development activities;

- taking into account the principles of teaching based on cloud technologies in the organization of the educational process and knowledge control;

- in order to achieve maximum production (pedagogical) successful results in the implementation of cloud technologies in the educational process(digital education), skills such as the use of technological, organizational, social economic, psychological, information and communication capabilities in accordance with the requirements of the period are required.

Analysis and results. As can be seen from this, the teacher using cloud technologies in the educational process of technical universities should reconsider the process of organizing modern teaching in accordance with the requirements of the period. Taking into account the peculiarities of cloud technologies, the teacher can:

- objective and clarification of the training course;

- planning a training course taking into account the goals set;

- the presence of possible difficulties as a result of studying the course and the independent search for ways to overcome them;

- selection of material for training sessions, taking into account the possibility of its perception by future engineer personnel;

- selection and development of a system of creative tasks to achieve the set educational goals;

- the choice of a more rational form of Organization of training, in particular, the development of tasks for the organization of independent work;

- it is desirable to take into account the optimal assessment and selection of control systems.

In relation to cloud technologies, technology has a number of changes in the content of pedagogical activity in higher educational institutions. First of all, the activities of the development of training courses are much more complicated, since its technological foundations are rapidly developing. This situation requires future engineers to have special skills to work in modern conditions in accordance with the requirements of the period, since there will be no opportunity to create an electronic course by transferring full-time educational materials to a computer form. Secondly, unlike the classic model of education, in which future engineer personnel were and remain a central person, the center of gravity in the use of modern information technologies and cloud technologies gradually requires the active

organization of their own educational process, choosing a specific trajectory using distance technologies. The main task of professors and teachers of technical universities is to support future engineer cadres in their further activities: that is, the successful assimilation of this material in an endless stream of educational materials should help solve the problems existing in mastering this information. Modern information technology helps to activate the distinctive features of the future engineer personnel, but this is quite time-consuming, and the future engineer requires additional and special efforts from the personnel.

Cloud technology will be within the framework of a specific program of the e-learning course, which is understood to have knowledge in the field of information technology, providing methodological and organizational assistance to students, taking into account the psychological characteristics of interaction with the peculiarities of distance education. It is considered a professional who has traditional educational technology and can use it remotely.

The characteristic features of the future professional activity of the future engineer cadre are as follows:

- taking into account the peculiarities of Intermediary Communication in teaching;

- the use of Information Technology in order to find and deliver educational materials, as well as to ensure constant communication.

The main task of cloud technologies is to support future engineer personnel in future professional activities in technical higher educational institutions: to provide an opportunity for its successful assimilation of educational materials, to help solve emerging problems, to independently master large and diverse material. Therefore, the world educational community began to use its new term – facilitator (contributing, helping to learn, creating favorable conditions), emphasizing the importance of this function of future engineer cadres.

The position of future engineer personnel in the education system is also changing qualitatively in accordance with the requirements of the period, which is determined by the requirements and problems of training based on cloud technologies. The rapid development of an informed society and cloud technologies have created a situation in which neither professors of technical universities nor future engineers who receive education in these educational institutions have a “not the highest line” of personnel knowledge. Any scientific and educational (unfortunately, not only reliable) information can be easily found on the global network and, if desired, studied independently. But behind the simplicity of mastering this easy information, the pedagogical problem of optimizing and correctly choosing educational materials, creating an effective system of exercises for mastering them arises more clearly and sharply. Therefore, without the guidance of the teacher, his direction and support, there is practically no chance that future engineer personnel will master any topic.

Today, a number of technologies are used to organize online education via the Internet. Cloud computing technology is the most effective way to organize an educational system over the internet. Cloud technology makes it possible to organize an online educational system consisting of distributed data storage and processing systems and at the same time a huge number of educational materials, to organize the entire educational activity on a single platform.

The organization of cloud Education Services has the following advantages over other methods:

- Ease of connection and simplicity of implementation;
- Low cost and versatility of the platform;
- Higher security;
- Reliability;
- Easy flexibility of the system to the network platform.

Currently, the technology of blended learning (mixed learning, ananvi and e-learning) is developing, as a result of which part of the educational material can be implemented in the form of an electronic course, and the rest-in the form of training in the audience. Such education requires students to control their

learning process, a high level of organization, certain abilities, readings, assessment of the results of the educational process. In addition, the student, in order to master the educational material, must independently summarize it, analyze and evaluate its activities in the performance of the completed educational work and assignments.

Conclusion. The study showed that based on the important features of the organization of interaction between participants in 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. digital tools, learning to present content in different formats that differ from traditional ones, being ready to develop content for the educational management system and designing, managing (not preventing) flexible models of educational organization, taking into account the individual characteristics and needs of students, are new risks in professional activities.

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