



Improving the Methodology of Preparing Students FOR Engineering Activity

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ABSTRACT

The article talks about the purposeful use of modern educational technologies and tools in the preparation of students for engineering activities, the introduction of innovative pedagogical technologies, increasing students' interests in science, having clear ideas about the performance of labor objects in practical training, and the formation of in-depth knowledge, skills and qualifications for the performance of labor operations.

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Improving the professional knowledge, skills and abilities of teachers requires the acquisition of excellent knowledge and skills in the fields of pedagogy, psychology, methodical sciences, modern techniques and advanced technologies, relations of production and market economy. Adoption of the Decision of the President of the Republic of Uzbekistan No. PF-5812 of September 6, 2019 "On additional measures to further improve the system of professional education" and the organization of professional education in the issues specified in it, a specialist who meets the requirements of world standards in conducting the educational process in them. The content and requirements of the state policy regarding the higher education system require the development of students' educational activities in the professional education system [1].

Organization of the scope and quality of the knowledge, skills and qualifications of the vocational education teacher based on the requirements of the state educational standards, determining the didactic conditions of the process of improving their professional skills and improving their activities is the basis for fulfilling these tasks [2].

Formation of technical-technological skills from professional subjects is the formation of intellectual and physical knowledge, skills and qualifications of learners in a harmonious manner, as well as the factors to be taken into account in the development of technical labor skills.

Appropriate use of modern educational technologies and tools in preparing students for engineering activities, increased interest in science in students as a result of the introduction of innovative pedagogical technologies, wide opportunities for students to have clear ideas on the implementation of labor objects in

practical training, in-depth knowledge, skills and qualifications for the implementation of labor operations creates [3], [4].

Currently, developed countries around the world are moving from engineering production to industrial production, i.e. to automatic-mechanized industrial production based on new techniques and technologies.

The technical potential of specialists plays an important role in the development of production. The basic skills of specialists working in the field of production are included in the process of preparation for engineering work.

Currently, many subjects introducing new information technologies and areas of application of computer equipment in the national economy are included in the educational programs. During their mastery, students get acquainted with the use of computers in education, economics and engineering, mathematical modeling, automated educational information systems, and the importance of using workplaces, job description and increasing productivity [5], [9].

Engineering training students should effectively use all forms of education in higher education institutions together with subjects in the curriculum to raise their knowledge and skills of working with new information technologies to the level of global requirements.

The main task to be solved in the improvement of the methodology of preparing students for engineering activities is to determine didactic opportunities and forms of using new information technologies in the educational process. In preparation for engineering activities, it is necessary to take into account that it satisfies the need for information in the creation of a new technical solution and uses it in the development of effective ways to implement it [7].

Based on this, on the basis of the analysis of the tasks in the improvement of preparation for engineering activities, the following main directions of the application of information technologies are followed in this process [6], [8], [10]:

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

2. As a didactic tool that serves to increase the level of information provision of scientific and technical creativity of students.

As the basis of preparation for engineering activities, we used the method of programmed education implemented by means of information technologies. According to this, they test their knowledge of preparing students for engineering activities by means of information technology. The use of information technologies in preparation for engineering activities has the following advantages:

1. Management is carried out in a communicative manner, quickly and conveniently, the use of its technical means: display, keyboard, manipulator, output devices is carried out in a simple manner.

2. A member of the computer user group is not required to create a program and have knowledge in this area.

3. The external memory is compact and has a large capacity.

4. The architectural and design solution ensures high efficiency and convenience of its appearance and technical solutions.

5. The economic and technical indicators of the computer are adapted to the requirements and possibilities of educational institutions.

Conducting classes with the help of computers increases the effectiveness of education, increases the accuracy of evaluation of circle members in the rating system, and makes it easier to calculate the assigned points and ensure their visibility.

In improving the methodology of preparing students for engineering activities, in increasing the efficiency of working with information technologies, the use of various methods and didactic methods is used depending on the content of the educational material and the didactic and educational tasks to be solved in the training. In addition to fulfilling the basic psychological and pedagogical requirements, it is also important to choose the goals and methods for the content of such activities.

A number of effective methods for improving the methodology of preparing students for engineering activities in the field of construction have been identified, which include the following:

- construction (modeling) of products;
- manipulative construction;

- use of technical documents with abbreviated information;
- solving creative problems;
- performing creative assignments;
- mastering the previously prepared constructions and redoing the works;
- a fantasy experiment;
- such as correcting errors using technical means (including simulators).

The use of these methods in a certain order allows to improve the methodology of preparing students for engineering activities.

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