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Research Article

THEORETICAL FOUNDATIONS OF THE USE OF DIGITAL TECHNOLOGIES IN THE TRAINING OF FUTURE ENGINEERS

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O'Ktamov Davronjon Odiljon O'G'Li
Jizzakh Polytechnic Institute, Uzbekistan

ABSTRACT

In this work, the theoretical foundations of the use of digital technologies in the training of future engineers are discussed.

KEYWORDS

Education, digital education, digital technologies, future engineer, professional activity.

INTRODUCTION

The social, economic, scientific-technical and technological development of our country and continuous education system, including the process of providing pedagogical education to students of higher educational institutions, require a fundamental reform based on the needs of the times.

The scientific-theoretical basis of the use of digital technologies in the process of

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preparing future engineers for professional activities in technical higher educational institutions based on the in-depth analysis of the research works of scientists of pedagogical and psychological studies (International, CIS countries and our country) in preparing future engineers for professional and pedagogical activities. development of scientific-theoretical bases of the use of technologies; developing innovative ways to identify future engineers' knowledge of digital technologies, quality use competencies and improve them by means of questionnaires, interviews and similar methods; creation of a set of didactic tools for teaching professional subjects based on digital technologies to students studying in the energy field of higher technical educational institutions; to develop and systematically improve the methodology of using digital technologies in the development of professional competencies of future engineers".

Acquiring the above-mentioned knowledge, skills, and abilities is of great importance in educating young generations who are entering a big life.

We identified the actual issues that need to be resolved in the professional training of future engineers in technical higher education institutions.

These are:

To introduce the use of digital technologies in the process of professional learning of future engineers, to determine the levels of formation of the competencies of students to be able to use digital technologies in practice in their professional activities today and tomorrow; scientific justification of the importance of digital technologies in the development of future engineers as mature specialists who meet the requirements of the informational educational environment; To develop a methodology aimed at determining the level of development of professional competences related to the use of digital technologies among students studying in the energy field of higher technical educational institutions and to justify the effectiveness of

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experimental test results in a mathematical and statistical method.

The transition of the current education system to a digital educational environment leads to the gradual improvement of the content of professional competencies that future engineers should acquire based on the principle of integrity. Such digitization, in turn, requires future engineers to have knowledge, skills, and competencies that enable effective use of ICT in their future careers. In a word, having professional competencies related to the effective use of digital technologies as a didactic tool in training future engineers ensures the quality and effectiveness of education in technical higher education institutions. "Also, an analytical analysis of existing pedagogical experiences in the process of applying digital technologies to the process of training future engineers, there are the following problems and shortcomings related to this area":

In the process of training future engineers based on giving priority to digital technologies, some professors and teachers who are teaching students of energy fields of higher technical educational institutions are not sufficiently prepared;

The lack of digital technologies that allow the students of higher technical educational institutions to carry out design activities with the help of digitized educational tools in the educational process of students of higher technical educational institutions in the field of energy, and the lack of methodological support for their practical application.

Currently, in solving the theoretical and practical, scientific, socio-pedagogical, material and technical problems of professional training of future engineers, we have encountered the following imbalances and problems in reforming its traditional content:

modern economy and new forms of economic management, scientific-technical and creative circles, advanced production technologies are not sufficiently reflected in the means and methods of energy education;

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that the content, purpose, form, means and methods of the national ethnic, territorial-historical characteristics of our country do not reflect the criteria of today's oriental thinking;

insufficiently developed mechanisms for the implementation of pedagogical, psychological and didactic foundations for future engineers, taking into account the unique characteristics of professional sciences;

Educators who are able to solve the mentioned problems and conflicts should have the following professional qualities:

High idealism. The teacher, as an educator of the growing young generation, should educate the children in the spirit of unlimited loyalty to our country, form a national outlook in them; to have high technical knowledge, skills and qualifications. In order to effectively organize the process of energy education, they should thoroughly master the elements of electricity, lathe work and electrotechnical elements, master the basics of 2-3-level locksmithing, electrical engineering and other similar professions, and continuously improve their skill level in the subsequent practical activity processes; high psychological and pedagogical training is required.

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