

## THE ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN THE DEVELOPMENT OF PROFESSIONAL COMPONENTS OF FUTURE CIVIL ENGINEERS

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**Abstract.** This article examines the methods of using modern computer technologies in the training of construction engineers. New modern programs developed for modern construction directions play a huge role in improving the knowledge and skills of construction engineers.

**Key words:** Youth, higher education, education, upbringing, future, professional, engineering graphics, computer graphics, design, competence, intellectual, integration, intellectual, creative, cognitive, future, ability, efficiency.

At the present time, when reforms in the field of education are being implemented step by step in our country, based on the requirements of the national personnel training program, there is a need to implement the existing conclusions and recommendations on increasing the effectiveness of education. Decree PF-6108 "On measures to develop the fields of education and science in the period of new development of Uzbekistan" signed by our President on November 6, 2020 also states "A new initiative for the development of the country and training new generation personnel who are able to come up with ideas and implement them, with high intellectual and spiritual potential, to form the necessary skills and knowledge for graduates of educational organizations to become modern professionals" in this field defined as one of the main directions [1,2,3,4].

It serves as an urgent task in the training of civil engineers, as well as in other fields. For this, it is necessary to use educational methods effectively and rationally in the teaching process, and to improve the knowledge of civil engineers by finding and applying new methods. Therefore, the main urgent issue in the field of construction today is to equip civil engineers with new knowledge with new innovative computer programs. Teaching the Auto Cad program to young students during the training of construction engineers allows them to develop construction drawing skills. Because the role of computer technologies in training construction engineers and directing them to professions is very important. That is why it is an important factor to improve the

quality and efficiency of education and training in order to train qualified mature engineers.

Educating young people, providing them with education, raising them as worthy personnel for the future has always been one of the most important tasks of every country. If we say that such matters are constantly in the center of attention of our country's leaders, we are telling the truth. The Strategy of Actions on the five priority directions of the development of the Republic of Uzbekistan, adopted under the direct initiative and leadership of the President of the Republic of Uzbekistan Sh.M. Mirziyoyev, has started a new stage of development in our republic. The practical results of this process are evident today in all spheres of our life, most importantly, in the thinking, aspirations and actions of our people. Special attention is paid to the issue of improving the education system, which is one of the priority directions of the development of the social sphere, the fourth of the action strategy.

In the meetings and talks of the head of our state during his visit to each region, the issues of raising a mature generation and living a healthy lifestyle of young people are considered as an urgent issue on the agenda. As the President stated: "If we do not give our children proper upbringing, if we do not keep an eye on their behavior and mood every day, every minute, if we do not teach them science and technology, if we do not find a decent job, then we will lose this deposit." "It's not a matter of eating."

Fundamental changes taking place in all spheres of society require the need to search for and use effective technologies for the training of highly qualified personnel. The success in economic development of the country is inextricably linked with the quality of engineering personnel training for various purposes. In such conditions, the formation of specialists as creative individuals in professional and other fields of activity is the main task. The skills of engineers are characterized by the ability to creatively solve the problems of creating new equipment, developing modern high technologies, optimizing the production and operation of technical objects.

In our country, these needs are strengthened by a number of circumstances. A set of problems related to training people to use their mental and professional abilities in rapidly changing conditions is defined. The process of transformation of the traditional mechanisms of society development expands the range of issues related to the change in emphasis on priority tasks in the social, cultural, practical policy of the state. Depending on these situations, the quality of education is in the center of attention of leading pedagogues-scientists and the whole society.

The situation that has arisen in many ways has set new requirements for the training of highly qualified and competent specialists for architecture, construction, production technology, and other fields. Scientific justification of the integrity of the higher education system is required, optimization of various forms of organization of the educational process, development of criteria for evaluating the professional

competence of future specialists is increasing in importance. Changing society, modern trends of economic development put forward new requirements for the field of professional qualities of a specialist. The transformation of the technologies of educational activities with the methods of organizing educational activities, which depends on the changes in the forms and technologies of the teaching process, the criteria for evaluating the quality of the training of civil engineers, provides wide opportunities for the activities of pedagogues-researchers and the future in our country forms a step-by-step implementation of the approach accepted in world practice to the professional competence of construction engineers. In the course of training, it is intended to direct students to the things that unite and organize the basis of professional competence of future construction engineers. Such an order of the society required conducting pedagogical research to determine the main changes in the development of professional competence of future construction engineers during the period of study at a higher educational institution. General engineering training at a higher educational institution helps to solve these problems.

The issues of professional training of future construction engineers in the higher education system were studied by scientists such as U.N. Nishonaliyev, A.A. Abdugadirov, A.R. Khodzhaboyev, R. Khasanov, N. Saidakhmedov, Q.O. Tolipov, S.S. Bulatov.

Optimizing teaching practices to the problems of developing creative thinking during schizoprenic preparation G.A. Ivashenko, D.V. Matvev, I.A. Roitman, S.A. Frolova, N.F. The works of Chetverukhin, A.A. Chekmarev, V.I. Yakunin and others are dedicated.

But drawing is geometry; the problems of learning engineering graphics, design basics, engineering and computer graphics and other geometric-graphic sciences are not sufficiently analyzed in connection with teaching general subjects, taking into account the characteristics of future professional activities. It should be noted that the quantitative and qualitative criteria for assessing the level of professional competence at the stage of mastering the graphic sciences, which include the organizational, pedagogical, methodological and technological foundations of the educational process, have not yet been developed.

The above thoughts encourage us to theoretically justify and experimentally verify the effectiveness of the system of general engineering-graphic training of students of higher educational institutions, which is especially relevant in the conditions of high demand for the quality of professional competence of future civil engineer training.

The generalization of the practical experience of graphic preparation of construction engineers and the analysis of scientific and methodical works made it possible to identify the following shortcomings and contradictions in the process of graphic preparation of highly qualified future specialists.

- there is no comprehensive methodological theory of formation of professional skills in the field of education of construction engineers and production technologies;
- the use of computer technologies to ensure a high level of use of graphic knowledge in course work and graduation work is still low;
- graphic preparation problems are not analyzed in the process of adapting young construction engineers to practical, design and production activities.

The quality of graphic preparation is the most important feature of the level of professional competence of future construction engineers during their studies at a higher educational institution. This requires the creation of pedagogical conditions that can ensure the effectiveness of students' graphic activities, taking into account modern students.

The development of new scientifically based forms of professional competence improvement in the process of teaching the science of architecture and design fundamentals in the higher education system based on the direction of construction is based on the analysis of the goals, structure and dependencies of the educational system.

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