



Theoretical Foundations For The Development Of Professional Training Of Future Engineers On The Basis Of Digital Technologies

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ABSTRACT

This article aims to set the priorities for the development of the educational process based on the use of digital technologies in the higher education system of the Republic, the analysis of their capabilities, digital technologies in the field of education and in what form they were introduced.

Keywords:

Digital technologies, information and communication technologies, higher education system, modern education, digital knowledge.

The development of professional training in the medium of digital technology aims to prepare engineers in accordance with the requirements of the new time, the latest technologies and the data environment. The data of many international studies show that the success in the development of education in a particular country depends, above all, on the quality of the teachers.

The effective integration of digital technologies into education allows you to change pedagogical methods and open up new opportunities for students. In this regard, it is very important that teachers have the necessary competencies in their professional practice to actively use information communication technologies, provide equal opportunities and high-quality education [1]. Effective integration of digital technologies into education will transform pedagogical methods and open up new opportunities for students. In this regard, the improvement of methodologies for the development of professional training of future engineers by means of digital technology

can be carried out through the following methods. Interactive learning: digital technologies make it possible to create interactive learning materials in the learning process. It can be interactive teaching textbooks, visualizations, simulations, virtual laboratories and trainers. This method makes learning more interesting, allows students to carry out training, experiments and research on other algorithms and notes.

Today, computer technology has created a wider range of opportunities for the implementation of modern methods, methods and software tools of innovative technologies in the educational system.

The effective use of these opportunities in the system of continuing education depends on the knowledge, qualifications, professional skills, talent, talent and culture of teachers and the activity of being able to use new pedagogical and information technologies in the course of the lesson [2]. Therefore, today a new system of modern educational technologies is created in our republic, the main task of which will be

to ensure continuity and continuity of content in the educational system, improve the methodology of teaching subjects, introduce new pedagogical and information technologies into the educational process.

Today, it is becoming one of the pressing issues that all students studying in all educational institutions will be able to perfectly learn, master and practice computer and Information Technology. Especially in the course of the lesson, the transition of subjects in connection with each other leads to an easier understanding of the mentioned topic and their assimilation.

Any innovation, project and production network of the field of science cannot be carried out without complex mathematical calculations. In order to alleviate such computations, many modern and universal integrated systems, namely a package of practical applications, are being created.

The application software package includes a wide range of software developments aimed at increasing the practical level of computers through joint use with practical and systematic applications. To form the skills of using such a complex of modern programs, it will be necessary to communicate more with them when organizing mathematics lessons.

The organization of classes with the help of Information Technology, on the one hand, increases the quality and effectiveness of the lesson, and on the other hand, in-depth study of these tools in students generates knowledge and skills.

It cannot be exaggerated to say that the terms information and computer technology are the most used concepts in everyday life. Because what area of life we do not take, what actions we do not follow, we will definitely work with information. That is, the use of information, the exchange of Information, their transmission, assimilation form the main basis of human activity. In general, information technology is the most important factor affecting the rapid development of society.

Although information technology has existed even at different stages of human development, the peculiarity of the now informed society is that for the first time in the history of

civilization, the energy spent on the achievement and production of knowledge-energy, raw materials, materials and material consumption items—prevail over the costs, which means that information technology occupies a leading place among existing new technologies.

What does education do for our lives?

Will any change bring?

Or bring different types of life?

Is there a serious and impressive impact of education in the world?

Answering these questions leads us to a more specific and practical approach. Education leads to great changes not only in our lives, but also in our society. Models for the introduction of new technologies and the dissemination of Education allow us to reflect, process and review many aspects of education in terms of time, space, reliability, sharing and knowledge creation (the most important priority of Education).

Thus, the addition of Information Technology in education has a positive effect on more students. The three words mentioned above may resemble a single concept, but this is not true. Behind it, the hidden concepts are the same, but the two terms are combined. Education and information technology are inextricably linked concepts. Information technology, which is becoming the main part of the educational sphere, consistently brings significant changes. The application of Information Technology in the field of education, sustainable changes have had a meaningful impact on life in the world.

The emergence of new technologies has launched all traditional methods of education, education and upbringing, being the most important part of the work that has a great influence on all areas of curriculum. Fast communication with an intimate attitude to information at work, at home and educational institutions means that education becomes a vital activity.

Education is an ongoing process, so it becomes a need for people who carry out it at any time in any corner of the world. The development of Information Technology in the field of education is a phenomenon that lasts a long

time. Education, in a specific form, depends on the connection with the needs of various students, and information technology is essential to meet the desired need. Multimedia tools-planning, audio and Visual Education, production of materials and tools, including sound, to promote educational goals. The development of Audio and visual education reflects not only technology, but also educational theory.

Changes in excess demand for innovative communication technologies and educational institutions serve to increase information technology literacy in education while helping students reduce tuition and other costs to their homes, and distance learning expands access to each student (geographic distance, individual disability, family context). At the same time, the informatization of society serves to improve the standard of living of the people of our republic, the satisfaction of social needs, the growth of the economy and the acceleration of the development of Science and technology. The process of informatization of society can be divided into 5 main areas:

- integrated automation of tools of labor, technological and production process;
- informatization of scientific research, design and production processes;
- automation of organizational and economic management;-promotion of the service sector of the population;
- informatization of the educational and personnel training process.

Any science studies some concepts of being in a generalized, interconnected way. For example, in the teaching of subjects, various methods and techniques are used. The basis of training is the examination of theoretical knowledge and acquired knowledge in practice. In either case, when mastering the material, a certain level of information is conveyed to the minds of students. In the acquisition of knowledge, that is, in the acquisition of certain types of information, the help of the computer system is very great.

Digital technologies have become so embedded in our lives that today it is impossible to imagine without them not only our daily activities, but also the development of socio-

economic spheres. Naturally, the introduction of pakamli technologies in tax administration, as in other areas, is radically changing its activities. Not only does it remain related to the relationship between taxpayers and tax authorities, but it is also innovating, from filing declarations to paying taxes and keeping records.

Regardless of how information is expressed, the role of computer technology in its collection, storage, processing and use is determined by: first of all, the use of new information technologies in teaching accelerates the educational process in relation to the standard (traditional) system, increases interest in science in the student, they grow their creative activity, a differential approach to knowledge giving, facilitates the repetition, consolidation and control of the acquired knowledge, makes the student a subject of the educational process.

Secondly, new information technologies will be able to be used in the educational process in the following forms:

- computer classes in teaching specific subjects;
- computer classes-as visual material;
- in organizing group and frontal work of students;
- in organizing scientific research of students;
- in solving the issues of the correct Organization of students ' free time from study, etc. k.

In the process of studying subjects in higher educational institutions, in direct communication with modern computer and information technology tools, students will have the opportunity to use computer technology in their practical activities in the future. At the same time, students have a much more significant positive change in their interest in new information technologies and their software tools. This in turn allows students to have sufficient in-depth knowledge not only in the subjects taught, but also in computer and Information Technology.

Adaptive learning systems make it possible to adapt the educational process on the basis of digital technologies according to the personal requirements of students. Adaptive learning systems use algorithms that apply student

information and information about student identity to provide personalized materials, tasks, and feedback. This allows students to learn the basics in their tempo and what matters most to them.

Expanded and virtual presence: expanded and virtual reality allows students to create immersive learning environments. Students have access to 3D models, simulations, and virtual objects. The application of advanced and virtual reality in the educational process allows students to learn practical skills in a real environment, learn complex processes and conduct virtual experiments.

Online platforms and learning resources: digital technologies provide access to online platforms and learning resources. Students have the opportunity to study special courses, watch popular expert classes, join forums and reach out to other students and teachers. This expands the level of popularity of the study and allows you to master new topics and concepts.

Working on online collaboration and projects: digital technologies allow students to collaborate online, work on projects and solve problems together with other students and teachers. Online collaboration develops students' communication and community skills and allows students' knowledge to be applied in practice.

Analytics and data: digital technologies make it possible to collect and analyze data in the educational process.

Analytics and data analysis help teachers and administrators assess student development, identify non-strength points, and track personalized changes in the curriculum. Alternatively, the application of digital technologies in the development of professional training requires familiarizing engineers with the requirements of the new time and training them in simple, fast, and effective ways. There are several important points for drawing up methodologies and textbooks for this purpose. Selection and preparation: to attract students in the selection process for the development of themselves in the field of digital technologies, to provide suitable courses and resources for the study of developing technologies. Practice-based

training, practice-based development of Professional Training Learning processes, for example, projects, creating projects aimed at solving existing problems for all users. Use of virtual laboratories and online resources for teachers and students.

Innovative technologies: - the use of laboratories, production facilities, and other resources to study the latest innovative technologies;-the provision of platforms for the integration of IoT (Internet of Things), large-intelligence, and other latest technologies.

Teaching emerging technology practitioners: - teaching emerging technology practitioners for various fields in the development of professional training, such as data analysis and mental Data Processing for teachers or students.

Online resources and platforms: -use platforms in the field of online textbooks, websites, and in particular developing technologies;-increase teaching with students through interactive textbooks, webinars, and online teaching technologies.

Digital technologies bring students to interactive and personalized learning environments, giving them hands-on experience and skills, and enabling them to be mastered and developed. These techniques are important in providing engineers with comprehensive training to the innovations and requirements of the real world.

In summary, it is possible to say, because this combination of methods will be important for students to be effective in developing their professional training. Each student requires special programming on personal characteristics, interests in developing technologies and professional goals.

References

1. Муслимов Н.А., Абдуллаева, Куйсинов О.А., Н.С.Гаипова. Монография. Касб таълими ўқитувчиларининг касбий компетентлигини шакллантириш технологияси.— Т.:«Fan va texnologiya»,2013,128 бет.
2. Imamnazarov, E. D., & Parpiyev, O. T. (2021). Teaching educational

- technologies in pedagogical activities. Экономика и социум, (6-1), 94-96.
3. Kuysinov O.A. Developing Professional-Pedagogical Creativity of Future Professional Education Teachers based on Competencial Approach. Eastern European Scientific Journal. - Germany, 2018. №4. P.257-263.
 4. Imamnazarov, Erkinjon. "METHODS OF IMPROVING THE PROFESSIONAL TRAINING OF FUTURE ENGINEERS IN THE FIELD OF INFORMATION TECHNOLOGIES." Science and innovation 2.B5 (2023): 57-62.
 5. Imamnazarov, E. "DIGITAL TECHNOLOGIES DEVELOPMENT FACTOR IN PROFESSIONAL TRAINING OF FUTURE ENGINEERS." Science and innovation 2.B4 (2023): 388-391. 9. Парпиев О.Т., Имамназаров Э.Д. Педагогические игры и их возможности в профессиональном обучении //Проблемы и перспективы развития образования. – 2012.–С.149-150. 10. Imamnazarov, E. (2020). The use of educational and practical games in the formation of the independent work in the personnel skills. ACADEMICIA: An International Multidisciplinary Research Journal, 10(4), 123-126
 6. Bakhridinovich A. B. Theoretical bases of formation of design-design competence of future engineers in the process of higher education. – 2022.
 7. Adilov B. ORGANIZATIONAL AND PEDAGOGICAL FOUNDATIONS OF THE FORMATION OF PROJECT-DESIGN COMPETENCE OF STUDENTS OF THE ENGINEERING DIRECTION //Science and innovation. – 2022. – Т. 1. – №. B4. – С. 318-322.