

METHODS OF IMPROVING THE PROFESSIONAL TRAINING OF FUTURE ENGINEERS IN THE FIELD OF INFORMATION TECHNOLOGIES

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Abstract. *In this article, we examine how future engineers in the field of information technologies can improve themselves and their skills. We also explore some effective methods for self-improvement. Additionally, the article highlights the importance of training professionals in the field of digital technology and the challenges they may face in enhancing their experience and skills*

Keywords: *digital technology, vocational education, specialized expertise, VR (virtual reality), artificial intelligence, big data.*

Introduction. What is digital technology? Currently, one of the most rapidly advancing fields is digital technology. Digital technology has taken its place in every aspect of life. It is used in virtual reality, artificial intelligence, information technology, electronics, and circuit design, creating electronic learning resources, learning foreign languages, the development strategy of our country, engineering programs, construction, management principles, mathematical modeling, robotics, marketing, programming fundamentals, educational systems, information management, transportation management, social and economic life, government digitalization, and many other areas. Digital technology is widely



**NUMERICAL
TECHNOLOGY**



and effectively used in various areas of life.

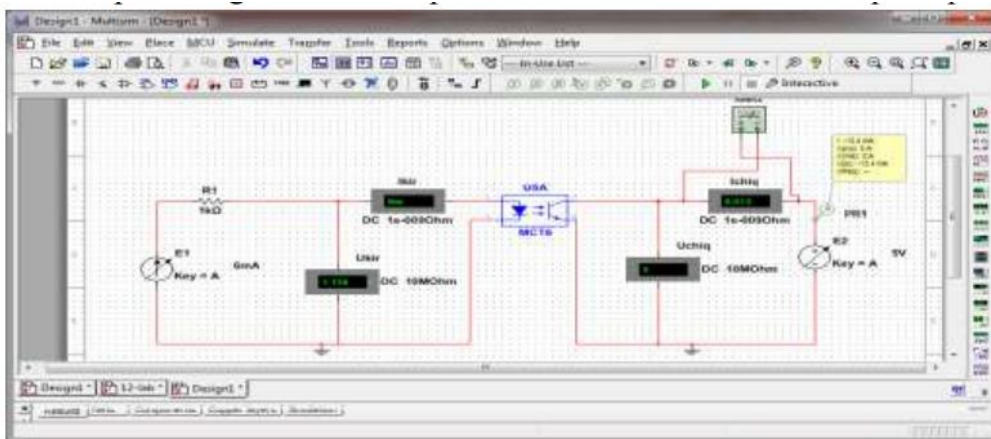
Virtual reality has become one of the most significant and impressive digital technological innovations of our time. Social networks have been virtualized, and various markets and auctions have been moved online by our government. The networks of meta-companies have also been virtualized. Through virtual reality, many people can see and interact with their loved ones who are far away, as well as understand and empathize with them. Creating such opportunities is a

positive manifestation of technology in our social life. However, we also know that not only positive, but also negative movements are using all digitized technologies.



Artificial intelligence (AI) is a term used for things created by humans that are widely used in robotics and electronics. It mimics some functions of the human brain and the processes of mimicking are carried out by human ingenuity. Its history dates back to ancient times when the idea that inanimate objects could possess intelligent existence was present. The ancient Greeks had stories about robots, while Chinese and Egyptian engineers built automatons. The beginning of modern AI can be traced back to attempts to depict human thinking as a symbolic system of classical logic. Now, let's pay attention to where the term "artificial intelligence" came from. This term was officially coined at the Dartmouth Conference held in Hanover, New Hampshire in 1956.

Information technology and information and communication technologies (ICT) are familiar to us under the name of IT. In our time, IT parks have been established in almost all regions. These parks mostly consist of young users. Aspiring students who want to enhance their skills can improve their competencies here. Even professional teachers in education can practice and gain valuable experiences in these centers. Of course, users have to use technology under the supervision of the organization to make proper use of technology.



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Electronics and circuit engineering - the construction model of all technologies is based on this field. As seen in the above image, a model is built based on circuits, and its foundation lies in the programming language consisting of numbers in the field of technical programming.



Many programs have been created for creating electronic educational resources and for learning foreign languages. With their help, users can easily create convenient resources and easily learn the language. All of these are based on digital technologies.



In Uzbekistan's development strategy, digital technology is also essential because the development of every country depends on its digital technology.

Engineering software is used to create objects, building models, and even the models of roads, all based on these programs. The advantage of using digital technology is that it helps to easily identify any small errors in the model. As we know, any small mistake in engineering can

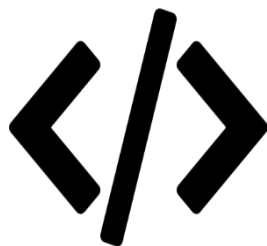
cause huge losses.

When it comes to management, the focus is on management equipment in companies and factories. Sensors, electronic systems, schematics, and controllers are all digitized and help to improve business operations in the workplace. They are all included in smart technologies.

Creating mathematical models is the process of modeling all engineering and other activities closely related to this field using mathematical methods. To understand the load that can be stacked on top of each other in simple construction, mathematical modeling is necessary, yes, it is an algorithm that can also be created by humans. However, when creating complex structures, it takes a lot of time to calculate everything, and at such times, computer programs based on numerical technology can be the closest ally to humans



Do people use social media in marketing?! Of course they do. They advertise on television. They create websites and promote their products through online sales. All of their data is collected in one program, and if that program is removed, the entire data collection system will be lost and marketing will be impacted.



Programming basics are the foundation of all technology. Because even the simple household technology we use in our social lives operates on a program basis. There are both simple and complex programs available. The salaries of the best programmers are also good. Becoming proficient in programming requires a lot of effort from a person.

Education systems are also a key area of today. The level of technology entering it has occupied high positions. All of the concepts mentioned above have been integrated into this system. Only competent personnel can understand them. Of course, learning is not easy. Learning them, using them correctly, directing them to their goals, achieving success with them, and coping with challenges require extensive experience from professionals.



Managing information involves collecting all digital information into a single repository and delivering it to users without any errors, and delivering it is done through the use of numbers.



Automated traffic management systems are digitized in managing transportation. Its model and scheme are also developed based on the experience gained from digitalized technology.

In social and economic life, a lot of information of citizens is digitized, their personal information is stored in numerical databases in a confidential manner, bank account numbers are also digitized. Information about payments, travels, imports-exports, phone calls, file extensions, document retrieval, using interactive services, and many other activities is digitized either through human language or technology.



In the digitalization of the government. An electronic government refers to a government that has been digitized and operates through electronic means. Its beneficial aspect is that it creates convenience for citizens to use interactive services. Also, it is a convenient way for the government to interact with other governments as well. Because this type of government activity is carried out through distance, internet networks. One of the most important benefits is that it helps to reduce corruption by

implementing checks and balances.

Main body. The main part of the text describes that all the activities discussed are related to digital technology. While it is easy for people to enter the education system, it is challenging for the staff to adapt to new technology, as many professional staff members in the education system are considered elderly, and it is a complicated process for them to adjust to new technologies. There are many ways to make this process easier. First, if staff members have the desire and willingness to adapt to the new technology, the rest of the process becomes more straightforward. Many groups are formed to introduce new digital innovations to the education system. For example, the registration and result sections of DTM processes are digitized. What was the aim of this? The benefit of human beings is at the forefront. The government plans to digitize many processes to create convenience for its citizens. During the Covid-19 period, the government was forced to digitize many processes, including temporarily shifting the education system to online platforms. However, the online system had both positive and negative sides. The positive side was that it prevented the spread of diseases among education system employees. The negative side was that it caused the system's performance indicators to decline, and the academic performance of students decreased.

Currently, almost all educational systems are being digitized. The beneficial aspect of this is reducing paperwork and checking the effectiveness of teaching.

What are the most useful ways to enhance the professionalism of teachers in the education system? Of course, it is through experience and practice. If we take a simple lesson, current students would not appreciate the traditional teaching tools used in the old system. They prefer modern tools. For example, the equipment needed to conduct laboratory experiments, such as boards and chalk, is outdated. The use of these things can bore students and hinder their learning. During a full presentation, a teacher should not spend half an hour speaking, unable to express their ideas effectively. All of these things discourage students from learning. At this time, a true professional teacher must pass on their experience. They must learn and apply new and modern

technologies, as they are available in all aspects of education. If a professional teacher uses their experience and practice to incorporate digital technology, they can truly become a modern and efficient educator. This is the demand of our time.

If water remains stagnant, it loses its color and characteristics. Similarly, in the educational system, it is possible to compare teachers who have not left the old system, and who do not know the benefits of digital technology. Water in the river moves forward and comes across various currents, rocks, and whirlpools. It collects useful minerals along the way and enhances its characteristics. This situation can also be compared to a modern teacher who is like a river. They should adapt to the times and compare themselves with other experienced teachers.

The education system is not a simple system. The process of shaping the professionalism of teachers in every field is an ongoing process.

In conclusion, it can be seen that the development of personnel in any field during the education process is closely related to their own specialization. If we look at digital technology, its role in the education system is expanding and we can confidently trust it to play an increasingly important role in fulfilling the most important roles in the future. Whether digital technology is complex or simple, it contributes to the main component of the education system. Time requires its development.

Digital technology is versatile in every field and continues to evolve in every sphere. The activities of personnel in it lead to many successes. Therefore, it is necessary to understand digital technology not as a simple system, but as a sign of humanity to use it for good purposes, and its misuse can lead to bad consequences. Not only does digital technology cause harm, but humans also suffer from it.

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