

MODERNIZATION OF THE EDUCATION SYSTEM THROUGH INNOVATIVE INFORMATION TECHNOLOGIES

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Abstract: *This article analyzes the role and significance of innovative information technologies in developing the education system based on modern requirements. It highlights effective ways of creating a digital learning environment, utilizing e-learning platforms, implementing distance education, and integrating artificial intelligence technologies into the teaching process. The study also provides recommendations for improving teaching quality, developing students' independent learning skills, and enhancing teachers' digital competence through innovative technologies. The results of the research show that the comprehensive use of information technologies is essential for the modernization of the education system.*

Keywords: *education system, innovative technologies, information technologies, digital learning, distance education, modernization.*

INTRODUCTION

The 21st century is the century of information and technology. In today's era of globalization, the role of information technologies is steadily increasing in all spheres of human activity, particularly in the education system. The digital transformation of society demands a modern approach to the educational process as well. Therefore, the wide implementation of innovative information technologies in education and the modernization of the learning process through them have become one of the main priorities for every country.

Modernizing the education system is not only about developing new curricula but also about updating the content, methods, forms, and tools of education in accordance with the requirements of the time. The success of this process largely depends on how effectively information and communication technologies (ICT) are applied in educational practice.

Information technologies make it possible to individualize learning, organize distance education, create an interactive learning environment, and develop students' independent learning skills. At the same time, they enable teachers to organize the teaching process more efficiently, present educational materials using multimedia tools, and automate assessment processes.

Nowadays, globalization and digital transformation processes have a significant impact on the education system. The rapid development of information technologies requires new approaches to organizing, managing, and monitoring the educational process. Through the use of digital tools, it becomes possible to make the learning process interactive, open, and flexible. At the same time, the effective use of information and communication technologies in educational institutions increases students' motivation to learn and helps develop their independence and creative thinking skills.

Information Technology (IT) is a set of methods, tools, and systems used for collecting, storing, processing, transmitting, and delivering information to users. Simply put, information technology refers to the technology of working with data through computers, software, the Internet, and other digital tools. The main purpose of information technology is to increase efficiency in various fields of human activity, including education, healthcare, economics, management, production, and communication.

“Information technology is the most important component of the process of using information resources of society. By now, it has passed through several evolution presets, the alternation of these stages is largely determined by the development of scientific and technological progress, the emergence of new technical means of information skating”[1, 45].

MAIN PART

The need of life to effectively solve the tasks set before science, as well as the internal needs of science, necessitated the informatization of science. Informatization is a global process of maximizing the use of information resources. The increasing role of computers and technology is one of its main features. Informatization of education is understood as purposeful activity on the development and implementation of information and communication technologies.

Informatization of education - in a broad sense, is considered as the provision of the educational sphere with the methodology, the practice of effective use and creation (processing) of new information technology tools aimed at the psychological pedagogical implementation of teaching goals.



In addition, informatization serves as a base for the progress of the distance learning system. In the process of informatization, a large-scale use of new information technology tools is carried out in the educational system.

Informatization of education in a broad sense is a complex of socio—pedagogical transformations associated with the saturation of educational systems with information products, tools and technology; in a narrow sense, the introduction of information tools, information products and pedagogical technologies based on these tools into educational institutions. Education in this case, without losing its traditional function – the transfer of social experience to the younger generations, should perform a fundamentally new function, namely the creation of highly adaptive pedagogy of the information society.

The process of informatization in the education system involves preparing well-rounded and competent individuals for rapidly developing, information-rich societies and future life. It encompasses updating the content of education, teaching methods, and forms of instruction, as well as developing the skills and competencies in younger generations that enable them to independently and successfully manage their lives.

Informatization of the education system is essentially a process of seeking new approaches derived from contemporary life. It involves organizing the entire educational process efficiently, taking into account the latest scientific achievements, assessing both individual and collective learning outcomes, and determining the effectiveness of integrating information technologies into the learning process. Informatization also implies using computer technologies and information tools during lessons to achieve new quality standards in education. For this, it is essential to enhance teachers' professional skills and provide methodological support for the effective use of information and communication technologies (ICT) in teaching.

It is well known that in the modern era, the influence of media technologies on individuals is steadily increasing. This is especially evident in children, who often prefer watching television rather than reading books. The influx of new information, advertisements, widespread use of computers in television, computer games, electronic toys, and the growing presence of computers in households demand special attention from adults regarding children's upbringing and their understanding of the surrounding world. Importantly, as children grow, the nature of their favorite activities changes—their games, preferred heroes, and interests evolve over time.

Previously, students acquired information primarily through textbooks, literature, teacher lectures, radio, and television. Today, information technologies and the Internet have also become integral sources. In an informatized education system, teachers are required to conduct lessons using innovative and pedagogically effective technologies. Pedagogical technology is fundamentally based on information technology, as the core of the educational process involves receiving and processing information. One of the most effective methods in educational technology is the use of computer technology.

RESULTS

The achievements and disadvantages of the educational system are especially evident in the training of Engineers. As you know, engineers make up the most mass group of specialists. They are associated with almost all spheres of society's life for certain reasons. The excessive technicalization of engineering education, its low emphasis on the humanitarian aspect, is one of the serious drawbacks.

In general, "technical education directed towards the development of a person's personality, his abilities and needs cannot be considered non-institutionalized education. Technical activity is a factor in the humanization of the individual, the development of an active creative attitude to the world in it". The influence of external factors that shape the templates of a technical specialist on the educational system led to the non-institutionalization of engineering education, in which technocratism became excessive. Yawning at the achievements of Science and technology, aiming at practical-technical utility, over-idealization of Social Sciences caused excessive technicalization of Education.

As a result of the expansion of the process of informatization of education, the problems of the socialization of engineering education gained relevance. Developing figurative thinking, certain abilities and skills in educators is an important problem of social training. It should be taken into account that in making a certain decision, a person employs not only his scientific knowledge, but also his desire, desire, interest, surety, sympathy.

The stages of organizing a modern Information Technology Environment at an educational institution begin with the creation of a psychological information environment. On the basis of technological and scientific results, created software products, the need for the use of modern tools and techniques is formed. In this case, it is necessary to organize an independent and computer education system of Educators based on individual and advisory training in each educational institution. In the computerization (informatization) of the teaching process, two directions can be distinguished: mastering all methods of applying the computer as a means of educational activity, as well as using the computer as an object of study. The improvement of the technical characteristics and software of the computer, the expansion of its didactic capabilities, manifests its new properties as a teaching tool.

The teaching of natural-mathematical and Technical Sciences has rich opportunities for the implementation of the social component of engineering education. Mastering the history of these sciences, their connection with the technical needs of production and the social environment of a particular period opens up great opportunities.



Technology is a complex of scientific and engineering knowledge implemented in labor techniques, sets of material, technical, energy, labor factors of production, ways of combining them to create a product or service that meets certain requirements. Therefore, technology is inextricably linked with the mechanization of the production or non-production, primarily management process. Management technologies are based on the use of computers and telecommunications equipment.

DISCUSSION

The effectiveness of using information technologies in the educational process depends on several factors. First and foremost, the level of teachers' digital literacy and their skills in using information and communication technologies play a crucial role. A modern educator should not only be an expert in their subject area but also be capable of integrating digital tools into the learning process. Therefore, training teachers to use ICT tools and improving their qualifications through professional development courses have become some of the most urgent tasks of today.

In addition, the development of technical infrastructure and resources also plays a significant role in the informatization of education. In many educational institutions, the quality of internet connectivity and the availability of computers and tablets directly affect the quality of the learning process. Hence, it is necessary to improve digital infrastructure and introduce cloud technologies and online learning platforms.

Research shows that the proper use of information technologies in education not only increases the effectiveness of the learning process but also helps develop key competencies such as personal growth, communication, collaboration, and creativity. Therefore, the integration of digital technologies into education is not merely a technical innovation but a process that transforms the very philosophy of teaching and learning.

In education, a generalized drawing of the algorithm of activities for the purpose of organizing and implementing information technology can be used. It includes several stages of teaching and training: aiming (formation of visions of educational goals); implementation (implementation in the intended sequence of teaching-training methods, methods and Means); control and Correction. Each Information Technology also uses a control algorithm, which consists of a system of rules for monitoring, controlling and correcting its functioning in order to achieve the goal set.

At the present stage, in addition to computer literacy, it is necessary to form a computer culture. Computer culture means that a person can appropriately use the complex of information technologies in his activities. "In an information society, people have to make important decisions in conditions of uncertainty, in crisis and stressful situations"[2, 38]. Without a high social and production culture, the development of computer technology is impossible, while the effective and rational use of computers in everyday activities requires the acquisition of certain knowledge and skills in the field of computing.

"Different disciplines have different possibilities in formalizing their knowledge. In philosophy, for example, there is very little knowledge that can be formalized. Therefore,

any attempt to computerize the teaching of philosophy is in vain”[3, 69]. Only control over the appropriation of philosophical knowledge can be computerized in a rather rough form. In the teaching of social sciences, there is a relatively wider use of computers and other means of Information Technology.

“The problems of informatization of education are gaining a wide social meaning, they are considered one of the most important areas of informatization of society. Educational informatization programs of different countries are evidence of this”[4, 29]. The culture of information consumption is one of the characteristic features of globalization processes, the Internet network is developing completely it is especially important in the current conditions.

CONCLUSION

In conclusion, in the current period, our population, especially our youth, perfectly copes with the modern techniques and technology of information transmission appropriation is important. To do this, along with the further development of the internet use system in our country, it is necessary to include in this network information of our national interests in various forms and languages. That is why, first of all, young people need to study and research incessantly, in order to preserve this boon as a tear, reaching the value of the calm and tranquility that is stable in our country today. Young people are constantly required for awareness and elegance. So, the most important task today is to educate the growing younger generation on the basis of national values, to strengthen in their hearts a sense of affection for their people, homeland, to alert them to information attacks of various destructive forces, to protect them appropriately is a phrase.

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