The Role Of Digital Technologies In Modern Society And Education Today

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ABSTRACT

Today, digital technologies have become an integral part of both society and education. Their role continues to grow, transforming traditional approaches to learning and social interaction. In education, digital tools enable more interactive and personalized learning experiences, while in society they facilitate communication, access to information, and the development of innovative solutions to complex problems.

Keywords: education, society, technology, computer, digital technologies, teaching

Digital knowledge and modern information technologies are among the key requirements for achieving progress in today's era. Digital technologies not only improve state and public administration but also provide significant convenience to people in the social sphere. In addition, digital technologies create the foundation for positive economic growth: they enhance the quality of products and services while reducing unnecessary costs.

Today, digital technologies are being actively used in all areas of life. In particular, they contribute to the rapid development of processes in the economy, agriculture, banking, and even in the higher education system. All citizens living in the country, including young children and the elderly, are forming the idea that all societal problems can be solved through digital technologies.

Modern digital technologies in education are not primarily the student's technology, but rather the teacher's technology. The student does not learn modern digital technologies themselves but uses them as technical tools of education—products of these technologies. The teacher prepares by applying modern technologies to the lesson process, organizes the lesson, monitors the student's knowledge, and their task is to improve the educational content by introducing the highest level of digital technologies into the learning process and enhancing the student's knowledge.

Digital technologies in education represent the process of preparing and delivering digital educational technologies to the student, with digital technologies serving as the means of implementation, namely:

Developing students' skills in working with modern digital technologies and enhancing their communicative abilities;

Preparing individuals for an "information society";

Providing learners with sufficient and accessible information to facilitate comprehension;

Cultivating and developing students' research skills, critical thinking, and decision-making abilities.

The essence of digital technology is realized through several well-designed models. These models emerge based on pedagogical software tools stored in digital technology memory and the capabilities of the global telecommunication network. In developed

countries today, the integration of information technologies into the educational process is a fundamental direction. Even the new concept of "multimedia" has emerged, signifying the effective and comprehensive use of technical and software tools in the learning process.

By applying multimedia tools in education, the key focus is teaching students to independently acquire subject-related knowledge. The teacher's main task is not merely to deliver information to students but to guide them in finding it and providing practical assistance—the teacher serves as a navigator in the field of knowledge.

Using the aforementioned teaching tools, influencing students is achieved only through various information channels. This process enhances efficiency in education.

Moreover, the integration of digital technologies into the educational process leads to a shift in the primary role of educators. Specifically, teachers increasingly strive to become researchers, promoters, organizers, advisors, and programmers in addition to their traditional teaching responsibilities.

In the conventional teaching system, significant time is allocated to organizing laboratory and practical sessions, which are among the most crucial components of training future specialists. This process not only enhances students' theoretical knowledge and skills or improves their mastery of learning materials but also strengthens their practical expertise in specific fields. However, conducting the aforementioned activities does not necessarily guarantee high-quality outcomes.

The reason for this is that, today, educational institutions often lack sufficient laboratory equipment. Many laboratory and classroom facilities are not equipped with modern devices and tools, and a significant portion of existing equipment is outdated, failing to meet current demands [2].

In the current era, as digital technologies rapidly advance, laboratory and demonstration materials for practical training require annual updates. This necessitates additional financial investments.

We sought to create opportunities for effectively utilizing technologies to improve and develop education quality. When tablets become an integral element of learning, children engage in the educational process with greater interest. As a result, the learning process improves, while knowledge acquisition, education quality, and workforce training efficiency increase [6-15].

To further develop digital technologies, close cooperation between government agencies and business entities must be ensured in implementing innovative ideas, technologies, and applications. In the field of crypto assets and block chain technologies, comprehensive development of international cooperation with foreign organizations should be pursued, while attracting highly qualified foreign specialists active in production. Activities in the crypto asset ecosystem—including mining, smart contracts, consulting, issuance, custody, storage, distribution, management, insurance, crowdfunding, as well as the implementation and development of block chain technologies—should be diversified to expand investment and entrepreneurship. Qualified personnel with practical skills in developing and utilizing block chain technologies must be trained. Taking international experience into account, a legal framework for implementing block chain technologies should be established.

Before delving into digital technologies, we must first familiarize ourselves with several key concepts related to an informative society, as understanding the issues, challenges, and conceptions reflected in these statements depends on it. In short, digital technology is a field of study that examines human economic activity involving the widespread adoption of electronic and information-communication technologies in the production, distribution, and consumption of societal goods. The term 'digital technology' is used to express two distinct concepts. First, digital technology represents a modern stage of development characterized by the predominance of creative labor and information goods. Second, digital technology is a distinct theory whose object of study is the informative society.

Uzbekistan faces the challenges of global competitiveness and national security, and the development of a digital economy plays a crucial

role in addressing these issues. Certain elements of digital technologies are already successfully operating in our country. Currently, considering the mass transition of documents and communications to digital means, electronic signatures are being authorized, and government interactions are being transferred to electronic platforms. The digitalization of economic processes is evolving into a comprehensive trend that encompasses not only information and communication networks but all sectors of the national economy.

The digital economy revolution is significantly impacting e-commerce, digital agriculture, "smart" electric grid systems, autonomous transportation, and personalized healthcare systems. Generally speaking, the digital economy represents innovative ideas, a concept officially introduced by the World Bank in its 2016 report "World Development Report 2016: Digital Dividends." Under these conditions, individual companies, regions, countries, and their associations strive to secure long-term competitive advantages in emerging markets for new types of technologies, goods, and services, actively engaging in shaping and implementing strategic decisions in the digital economy sector.

In essence, digital technologies create a virtual environment that increasingly replaces reality. More countries and regions are recognizing the growing importance of digital technologies in their development processes. This is precisely why Germany emphasizes its Industry 4.0 strategy, Singapore promotes its Smart Nation initiative, and the European Union prioritizes its Horizon 2020 program. Similarly, Central Asian countries like Kazakhstan and Kyrgyzstan have presented national digital development plans called “Digital Kazakhstan” and “Kyrgyzstan Taza Coom” (Clean Kyrgyzstan) to the public.

However, it is important to note that the current state of information and communication infrastructure in Central Asian countries remains significantly below the global average. This results in most digital economy infrastructure components failing to meet the requirements of a fully functional digital economy. For instance, if we examine fixed broadband penetration in these countries, we see average coverage rates of only 10-34% of households, well below the global average of 41.1%. Additionally, 79% of the population in these countries use fixed broadband with speeds below 10 Mbps.

The Republic of Uzbekistan can enhance its fixed broadband capabilities by developing infrastructure based on international best practices. Currently, Central Asian states often face challenges in fully securing investments and addressing potential investment issues in digital infrastructure. Solving such problems requires concerted efforts from all stakeholders. Therefore, we call upon the governments of these countries to develop effective policies that support digital economic growth through tax incentives, IT capacity building, and related funding mechanisms, while creatively leveraging their political capabilities.

At the same time, governments can help telecommunications operators mitigate investment-related risks and challenges by creating a robust environment for applying information and communication technologies across all sectors. For example, thanks to favorable policies implemented by the Mongolian government, local operators successfully deployed 80,000 smart homes equipped with WTTX technology. Similar smart home solutions enable rural residents in remote areas to access urban-grade broadband services. This facilitates easier access to market information, participation in distance learning programs, and creates a more convenient digital environment for staying connected with family and friends via the Internet.

As a leading ICT solutions provider, Huawei—with its deep expertise—helps clients maximize return on investment (ROI) through innovative technological solutions. For instance, Huawei developed the cost-effective yet highly efficient Rural Star solution tailored to meet mobile communication demands in Central Asian regions. This solution enhanced investment efficiency for rural communication infrastructure and significantly improved network coverage.

Huawei and Be Cloud jointly created Belarus' national data storage platform—G-

Cloud—a government cloud with local data storage capabilities. This initiative provided "local storage" services to over 5,000 state-owned enterprises, substantially improving the efficiency of government and public services.

Beyond developing ICT infrastructure, Central Asian governments must also enhance digital literacy among individuals and businesses. Governments should establish more sector-specific organizations to strengthen traditional industrial capabilities while exploring innovative business solutions through digital technologies. A case in point is Huawei's Intelligent Pipeline solution in Kazakhstan, which enables voice, data, and video transmission through critical gas pipeline transmission equipment.

In summary, today's classrooms differ significantly from those of previous years, with lecture halls now equipped with computers, iPads, tablets, smartboards, and various other educational technologies. Similar to other parts of the world, Uzbekistan is also creating its "seven-screen generation" of the digital era—comprising computers, tablets, smartphones, and smartwatches [3-4].

Existing in such a dense digital environment and constantly interacting with it has fundamentally transformed how today's students think and process information compared to previous generations' cognitive and information-processing methods. The digital generation cannot—and should not—be taught using the same methods our parents learned by. Traditional tools like blackboards and whiteboards are no longer sufficient; simply changing a blackboard to white or switching to markers won't make a difference. These outdated methods cannot adequately prepare modern students with the necessary learning and workforce success skills.

To adapt the education system to the digital generation, it is essential to widely and effectively implement innovative educational technologies and didactic models based on modern information and communication technologies.

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