Latin American Journal of Education
www.lajoe.org

FORMATION OF STUDENTS' INFORMATION CULTURE IN THE CONDITIONS OF EDUCATION DIGITALIZATION AS A PEDAGOGICAL PROBLEM

https://doi.org/10.5281/zenodo.18616247

Rakhmatullayev Dilmurod Rakhmatullayevich
Associate Professor, Turon University, Andizhan Branch
Doctor of Philosophy (PhD) in Pedagogical Sciences

Annotation: *In the process of transition to a digital society, the informatization and digitalization of various spheres of human activity give rise to the necessity of forming information culture within society. The rapid integration of digital technologies into modern social life leads to the development of the information space and electronic learning systems, the establishment of a digital educational environment in educational institutions, the reconsideration of educational approaches and paradigms, as well as the formulation of new scientific and pedagogical ideas aimed at improving the education system.*

THE LARGE-SCALE IMPLEMENTATION OF DIGITAL AND INFORMATION TECHNOLOGIES INTO THE EDUCATION SYSTEM AND THE INSTRUCTIONAL PROCESS IS INCREASINGLY BECOMING A GLOBAL TREND.

Key words: *Digital society, digital technologies, information technologies, education system, artificial intelligence, software, algorithms, and algorithmic systems.*

Digital society - which society? What are the fundamental requirements of a digital society? In seeking answers to these questions, we analyzed a range of scientific research conducted by national and international scholars.

In conclusion, a digital society can be defined as a form of social organization and interaction that operates through digital technologies and tools, including large-scale data (big data), artificial intelligence, software, algorithms and algorithmic systems, cloud systems and cloud technologies, blockchain, digital platforms, the Internet, and other digital instruments.

The digitalization of society is manifested in the penetration and integration of digital technologies and tools into all spheres of social life.

Digitalization is manifested as a set of interconnected processes: networking, identification, platformization, and

Latin American Journal of Education
www.lajoe.org

algorithmization. Each of these processes is grounded in the technological infrastructure of the digital society, which comprises networks, large-scale data based on technological elements, platforms, and algorithms.

This technological infrastructure, in turn, ensures the hyper-connectivity, complexity, and dynamism of the contemporary digital world.

Furthermore, the technological modernization of the education sector encompasses the computerization of education as a key stage, the integration of computer technologies into the instructional process, the transition of the educational process to a computer-based framework, as well as the development of computer-assisted teaching methods, computer-based learning systems, and instructional software.

Here is the academic English translation suitable for publication:

The communicative environment of a digital society is highly diverse and open, enabling the integration of codes and messages from various sources functioning as network nodes. When consolidated into a unified communication environment, financial transactions, telephone calls, Internet and social media search queries, emails, and contact data from social networking platforms become integral elements of digital surveillance.

This characteristic defines the distinctive nature of the digital society and underscores the growing necessity for the development of information culture. In the context of globalization, the future of our country cannot be imagined without a new generation of personnel who are proactive, strategically minded, knowledgeable, and skilled. Therefore, special attention has been paid to the development of all levels of education in our country. In particular, issues related to the digitalization of education have been given focused consideration.

To this end, the “Digital Uzbekistan — 2030” strategy was adopted. Article 2.5 of Chapter 2 of the “Digital Uzbekistan — 2030” strategy outlines “the priority directions for education and professional training in the field of information technologies”.

“In order to enhance digital competencies in the field of education, the following measures shall be implemented:

– creating opportunities for students at the initial stage of education to acquire digital skills through exposure to digital technologies, fostering analytical and critical thinking, and equipping young people with the knowledge and competencies required in the context of large-scale digital transformation in the future;

– developing and implementing a unified distance learning platform with

Latin American Journal of Education
www.lajoe.org

the aim of its subsequent integration across all areas of education;

– introducing continuous revisions to the core curricula of general secondary schools in order to increase the overall level of students' proficiency in the use of digital technologies."

The introduction of highly efficient international practices focused on organizing education in the fields of technological professions and innovative activities into the education system;

The development and promotion of scientific research in the field of digital technologies, as well as the improvement of their organizational mechanisms;

The organization of republican competitions and events that encourage the creation of ideas and new technologies;

The development and specification of new directions for search systems, including solutions for searching and identifying audio and video materials, the use of semantics in information retrieval and sharing, new technologies in machine translation systems, as well as the development of new algorithms and technologies for machine learning.

Conducting scientific research on new methods and algorithms for analyzing large-scale data sets and accumulating knowledge, including the collection, storage, and intelligent analysis of big data;

developing new methods and software for the distribution of large-scale data; and creating new approaches and software solutions for predictive modeling of complex engineering systems.

Further enhancement of electronic educational resources for preschool, secondary, and higher education systems, as well as ensuring effective utilization of domestic and international educational resources, is essential.

The proliferation of digital technologies has led to profound transformations in the telecommunications sector. Traditional voice-based communication services are increasingly being replaced by interactive services such as the Internet, data transmission, and mobile communications.

Furthermore, trends such as the liberalization of tariffs, the transition from monopoly to competitive markets, and the globalization of national communication service markets are among the most critical directions for societal development through the advancement of information and communication technologies (ICTs)."

The following trends have been identified by leading analysts of the global community:

1. Datafy now – This involves enhancing and consolidating network capabilities to transmit, process, and present information in digital formats. In

Latin American Journal of Education
www.lajoe.org

this context, organizations and institutions are enabled to access information in real time

2. Cloud – Cloud computing is recognized as an emerging concept that provides users with the ability to access services from any location via the Internet on demand. Currently, many experts assert that 'cloud computing, in terms of its capabilities, surpasses traditional Internet services.' The advancement of cloud computing technology has been driven not only by its flexibility and transparency but also by its efficiency, the provision of storage and computational resources, and its role as a key enabler in creating a universal communication infrastructure for the management and dissemination of data and information.

3. Mobile – The concepts of the new economy, global economy, innovation economy, information economy, and virtual economy are closely interconnected. In the new economy, technologies such as the Internet and mobile communications play a significant role. The development of the Internet and mobile communications, their widespread availability, and their extensive use in various spheres of social life create competition among service providers, which in turn leads to an expansion of the range of services. This results in the integration of networks and services, that is, the integration of various market segments within the new economy. Alongside the existing Internet and mobile networks, this also gives rise to a multi-service network.

4. Cybersecurity In response to the threats faced by modern information and communication systems, including unauthorized access attempts to these systems through various methods, security is ensured using a range of techniques and tools. In particular, specific requirements are imposed on information systems and telecommunications to address these security challenges effectively.

5. Software – In the system for the development of information technologies and communications, the principle of supporting the design and development of software tools is recognized as a fundamental driver of progress within this sector.

6. SDN – The concept of Software-Defined Networks (SDN) refers to a method of virtualizing computational resources, in which the control plane of the network is decoupled from the data forwarding devices and implemented through software. This approach enables a programmable and flexible communication network, allowing for centralized management and more efficient operation of data transmission systems.

7. Pervasive Screens – The development of digital technologies and the Internet, alongside advancements in modern technical and technological solutions, particularly in the field of video technologies, enables users to access and view content independently of time and

Latin American Journal of Education
www.lajoe.org

location, thereby providing the capability to observe any desired material at will.

According to F.U. Anarbaeva and A.F. Qorayev, foreign studies indicate that the digitalization of education encompasses various dimensions, ranging from technological infrastructure to pedagogical approaches, and significantly influences the organization of education at the international level through the implementation of interactive and adaptive educational programs. Almost all studies associate the digitalization of education with the development of adaptive competencies that enable individuals to adjust to societal changes and professional environments.

It can be concluded that research on the psychological and pedagogical development of information preparedness among students in professional educational institutions indicates that, in the context of an increasingly digitalized society, it is essential to cultivate the information culture of future specialists. This cultivation should be directed toward enhancing both their personal growth and professional activity.