Psychology of personality consciousness in the context of information and communication technologies and education system reform: Experience of EU countries

Psicología de la conciencia de la personalidad en el contexto de las tecnologías de la información y la comunicación y la reforma del sistema educativo: La experiencia de los países de la UE

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Abstract

The purpose of the article is to analyze the processes of formation of the psychology of personality consciousness in the context of active use of information and communication technologies and transformations in the field of education, primarily in the countries of the European Union. To realize this goal, the methods of analysis, synthesis, comparison, as well as axiological and systematic methods as elements of general scientific knowledge are used. The results of the study indicate that the use of ICTs can be useful for developing countries that are implementing the westernization of educational systems, including the Republic of Kazakhstan. The use of various interactive platforms, online courses, multimedia materials, and other digital tools contributes to the creation of multifaceted and meaningful learning environments that promote critical thinking,

Resumen

El propósito del artículo es analizar los procesos de formación de la psicología de la conciencia de la personalidad en el contexto del uso activo de las tecnologías de la información y la comunicación y las transformaciones en el ámbito de la educación, principalmente en los países de la Unión Europea. Para realizar este objetivo, se utilizan los métodos de análisis, síntesis, comparación, así como métodos axiológicos y sistemáticos como elementos del conocimiento científico general. Los resultados del estudio indican que el uso de las TIC puede ser útil para los países en desarrollo que están llevando a cabo la occidentalización de los sistemas educativos, entre ellos la República de Kazajstán. El uso de diversas plataformas interactivas, cursos en línea, materiales multimedia y otras herramientas digitales contribuye a la creación de entornos de aprendizaje polifacéticos y significativos que fomentan el pensamiento crítico,

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independence, and innovative abilities of students. It is also proved that the availability of information and its accessibility still do not guarantee the formation of knowledge at the personal level. The conclusions indicate that in order to optimize the use of ICT in the modern educational process, it is proposed to introduce artificial intelligence and develop in-depth digital competence among teachers.

Keywords: information and educational technologies, psychology, European Union, education, transformations.

la independencia y la capacidad innovadora de los estudiantes. Las conclusiones indican que para optimizar el uso de las TIC en el proceso educativo moderno, se propone introducir la inteligencia artificial y desarrollar en profundidad la competencia digital entre los profesores.

Palabras clave: tecnologías de la información y la educación, psicología, Unión Europea, educación, transformaciones.

Introduction

Research Problem

Modern technological progress and the development of digital technologies, their integration into public life have a significant impact on the perception, understanding, and interaction with the world around us, establishing contacts with other people, and the formation of new requirements for professional activities. The psychology of the individual's consciousness is also undergoing corresponding transformations, which are changing as a result of information and communication technologies, the formation of new mental processes, and behavioral patterns. These impacts are particularly noticeable in the education sector. The global COVID-19 pandemic has demonstrated the potential for the development of distance education and the widespread use of digitalization in the training and education of future professionals (Chang López, 2022). Although the quarantine restrictions have been lifted, the idea of active use of information and digital technologies in education has become a trend of our time (Mehlenbacher & Mehlenbacher, 2020). In particular, in European countries, the achievements and positive experience of distance learning are not abandoned even after the formal end of the pandemic (Ramsaroop et al., 2022). In such circumstances, information and education technologies are closely intertwined with educational mechanisms and the psychological development of students, forming a specific picture of interaction and mutual influence. The problem is also relevant not only because of the relatively short time of its emergence but also because of the challenges posed by digitalization. For example, we are talking about the impact of social media and online interaction.

Research Focus

Information and communication technologies (ICTs) provide an opportunity to easily communicate and interact with other users, including for learning purposes, but this can also have a negative impact on the social behavior and psychological state of learners. Social media can cause certain psychological effects, such as feelings of loneliness, comparison with others, lower self-esteem, lead to digital addiction, reduce life satisfaction, and cause other negative consequences. In such circumstances, the study of the inclusion of digital technologies in the educational process and the related psychological impact becomes even more relevant. This aspect is especially important for governments and civil society organizations in developing countries that are embarking on structural reforms. In particular, Kazakhstani officials have implemented a number of transformations in the field of education, but further development of reforms also requires taking into account the critical experience of the EU. Therefore, the main focus of the study is to analyze the impact of ICTs on the formation of psychological attitudes of an individual through the prism of analyzing the experience of EU countries.

Research Aim and Research Questions

The purpose of the article is to study the main processes of formation of the psychology of consciousness of the individual in the context of the use of information and communication technologies and transformations in the educational sector (based on the analysis of the experience of European countries).

The corresponding goal involves the following issues:

1. Characterization of the theoretical foundations of the research problem;
2. Analysis of the impact of ICT on the psychological attitudes of the individual
3. Determining the relationship between individual psychology and ICT and characterizing current trends in European education.

Theoretical Framework or Literature Review

Consciousness as a certain psychological phenomenon has repeatedly become an object of scientific knowledge. However, in modern research, there is no single clear definition of this concept, since psychological and philosophical concepts are undoubtedly difficult to interpret. Given the current definitions, consciousness can be interpreted as a higher level of mental reflection and self-regulation that is unique to humans (Sperling, 1982). According to Roberts & Yoon (2021), personality psychology has "a well-established set of four responsibilities that it implicitly or explicitly considers as a field" (p. 489):

1. description of what a personality is;
2. personality development;
3. explanation of personality processes and their importance for functioning;
4. the basics of understanding and explaining actions and motivation (Roberts & Yoon, 2021)

Based on this, it can be determined that consciousness is the highest stage of mental development, and its characteristic features are activity, dynamic perception, and a combination of sensual and rational images that are formed individually and based on personal experience (Gulbs et al., 2018). The comparative function, inner experiences, and the ability to self-observe allow us to know ourselves and the environment, respond to intense changes, etc. (Gross, 2019) (See Figure 1).
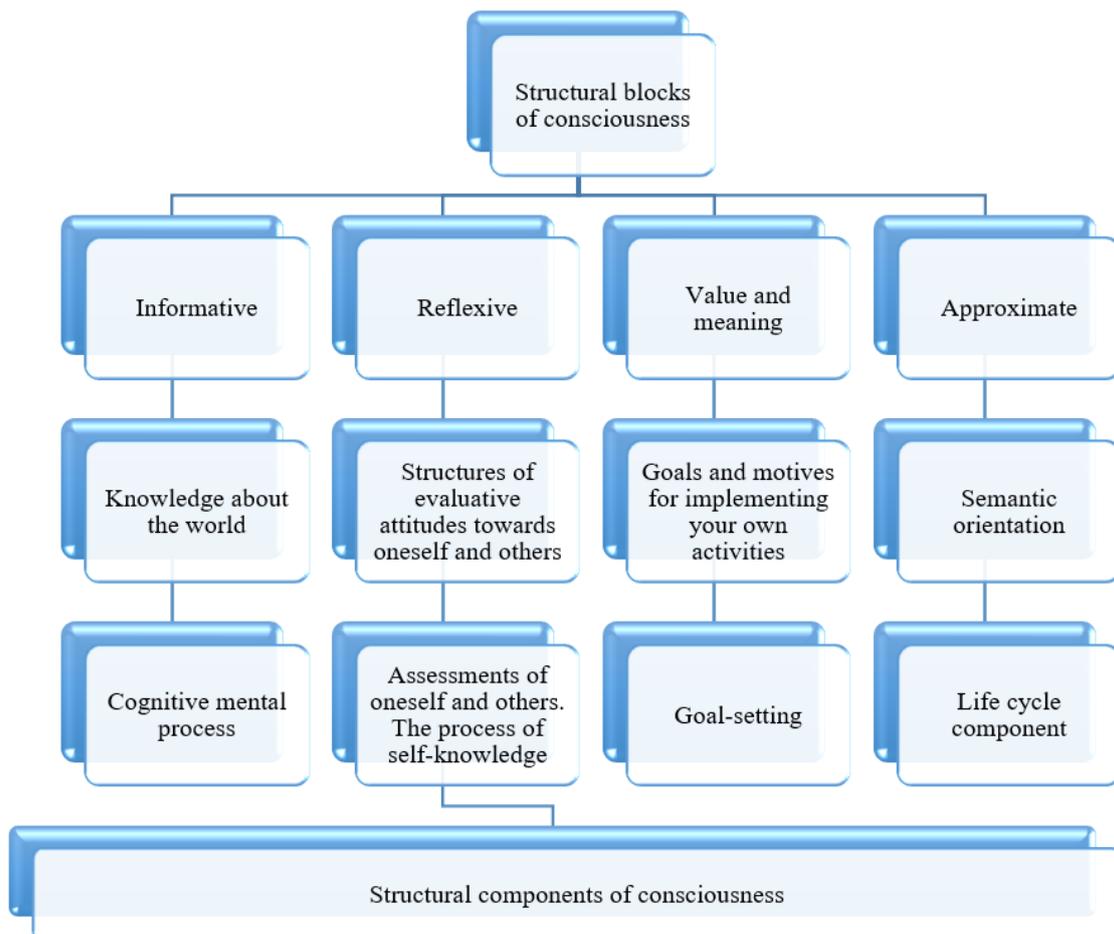
Figure 1. Building blocks and components of consciousness
Source: Compiled based on Gulbs et al., (2018).

Accordingly, personality psychology is based on an individualized perception of the world around us and the peculiarities of its functioning (Sanguineti, 2022). Each person is endowed with this ability and uses it at his or her own discretion (Canfield, 2007).

The psychology of consciousness in the context of information and communication technologies is an aspect of psychology that studies the peculiarities of learning, cognition, and perception of the world caused by the use of modern information and communication technologies. Thanks to them, a person can quickly find information, communicate, gain knowledge, and interact with others online (Kozhakhmetova, 2019). But such constant access to information can lead to data overload, which can affect concentration, attention, and memory (Leleka et al., 2022). This requires additional research and development of cyberpsychology to maintain psychological health and adapt to the new realities of the modern world.

Therefore, the methodological basis of the article is also based on works that explore key aspects of the use of information and communication technologies in the modern world (Clark-Wilson et al., 2020; Delic & Riley, 2020). The issue of digital transformation of education in Hungary is described in detail in Stoika (2022). The peculiarities of implementing innovative programs in higher education in Latvia are described in Andersone (2020). Thus, the above studies have shown that digitalization, which involves the large-scale use of technology in various spheres of life, significantly affects the formation of a personality in the modern world. In particular, access to knowledge and self-development is now an important positive aspect, as information and communication technologies provide access to knowledge and ample opportunities for lifelong learning. This, in turn, helps to develop intellectual abilities and expand competencies.

At the same time, Almås et al., (2021) characterized the key aspects of digital competence formation. Sultanbayeva & Lozhnikova (2020) characterized the importance of information and communication technologies in the Republic of Kazakhstan. Separately, Tynyshbaeva et al., (2022) identified the key features of digital transformation in universities in Kazakhstan. Ismailova (2022) analyzed individual cases of solving socio-cultural challenges, taking into account the circumstances of digitalization in the Republic of Kazakhstan.

Conte et al., (2019) explored the key aspects of using digital technologies in the learning process. Devadze et al., 2022 identified the problem of education of the future, characterized the main ways of its development. The authors focused on the importance of developing information literacy in students, which generally affects the psychology of individuals. Therefore, information and communication technologies play an important role in the process of becoming a person of the future, the optimal use of which forms an important digital competence and information awareness in an individual. Information and communication tools help to solve various tasks quickly and efficiently, which provides more opportunities for personal development.

However, further consideration will be required to characterize the impact of information and communication technologies on the psychological attitudes of an individual and to analyze the main methods of combating the negative impact of information and communication technologies based on the experience of EU countries.

Methodology

General background

The study is based on theoretical research methods. First of all, we are talking about analysis and synthesis, which allowed us to first divide the main subject of the study into several smaller parts (problems): the use of ICT in modern European education and the impact of this process on the individual psychological state of students. Then, based on the above methods, these separate parts were combined, and our own general judgments were formed. Among other important general scientific theoretical methods, content analysis, systemic and axiological, prognostic, and comparative research methods were used.

Data analysis

Based on the prognostic method, the problem of further use of ICT in educational processes is highlighted and solutions to common misconceptions about working with the latest technologies, regarding which there are disparate opinions in the scientific literature, are proposed. Content analysis was used at the initial stages of the study when information was collected on the research topic and the initial analysis of professional scientific literature on these issues was carried out, as well as the review of the

curricula of educational institutions that offer students ICT studies. The axiological method of the study involved the identification of the main values and guidelines for the further evolution of the value of education and the establishment of relevant ideas in personality psychology. Based on the systematic method of research, the use of ICT in European education is considered as a complex system that includes many components, the study of some of which has become an important task of this article. In some cases, the method of comparison is used to determine the differences, first of all, in the estimates of scientists and to highlight the negative and positive impact of ICT on the psychological consciousness of the individual.

Results and Discussion

Influence of information and communication technologies on the psychological attitudes of an individual

Information and communication technologies are based on information and its transmission. The process of reconstructing the discourse embedded in the information field begins with the stage of its perception. Information can be interpreted as a potential subject-subject communication, although in reality there is only a one-way process "subject - information (object)" (Plusch, 2017). At the same time, going beyond the subject-object dualism typical of psychology will allow, in addition to the study of the "mental through the mental", to use the social context of communication in the analysis.

At the same time, the process of perceiving information has an existential character: it is subordinated to the task at hand. Accordingly, the process of perception of information and communication technologies is not only a certain act that is realized in the mind of an individual, but also an act of interaction with the world, which not only informs the subject but also affects his or her consciousness.

Taking into account the trinitarian approach, which is widely used in modern science, three areas of perception have been formed: physical (based on information itself), social (subject-subject communication between the author and the consumer of information), and mental (reflection on the importance of information for the subject's life) (Plusch, 2017). Information is a text that is both socially significant and discursive in nature. Interpreting information as signs (textual part), meanings (depending on the author of the texts), and goals (aimed at consumers), it is obvious that there are three different semantic means of perceiving information: recognition of signs, awareness of the main meanings and anticipation of goals (See Figure 2).
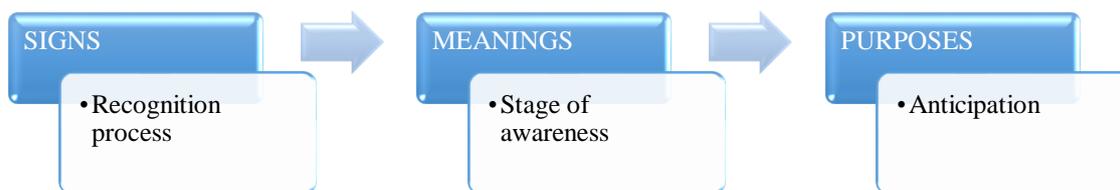
Figure 2. Stages of information perception
Source: Plusch (2017).

Psychological actions of an individual (we are talking about psychological mechanisms), through which the process of perception of information is realized, which unfolds in different mental planes In particular, in the physical plane, information (text) is a meaningful sequence of any signs, the characteristic features of which are continuity and coherence. Accordingly, the subject in the plane of the existing discourse recognizes the signs that form the material basis of the text. At the same time, in the social dimension, perception involves the formation of a kind of transition from sign to meaning. The meaning of signs changes depending on the context, outside of which the sign itself has no meaning. Since the text itself does not possess a holistic principle of structure in the mentality, the content and meaning of its signs are determined by the contexts formed by the author. The perception of information is shaped by the communication process with the author of the information and the understanding of the meanings he or she has laid down (through the reconstruction of the text's contexts).

Accordingly, information technologies, such as the Internet, mobile devices, and social networks, affect human psychology and can have both positive and negative effects (See Table 1).

Table 1.

Comparative Analysis of the Impact of Information and Communication Technologies on the Psychology of Consciousness

The positive impact of information and communication technologies on psychology	
Communication and communication	ICTs make it possible to bring people who are far apart closer together and keep in touch with family, friends, and colleagues even when they are separated.
Quick access to information	The Internet provides quick and easy access to knowledge and information, which stimulates the development of critical thinking and self-education.
Implementation of psychological support	Networks can provide support during difficult times in life by helping you find a community of people who are going through similar experiences.
Support for relaxation and entertainment	Using entertainment technology can be a way to relax and unwind after a busy day (Shyshkina et al., 2023).
The negative impact of information and communication technologies on personal psychology	
Addiction	Excessive use of technology can lead to dependence on smartphones, social media, and the Internet, which negatively affects mental health and social adaptation.
Effect on brain activity	The constant flow of information can cause stress, uncertainty, and loss of focus.
Manipulation	Psychological influence on a person, which is not always realized by him or her and which is designed to produce various reactions (thoughts, feelings, actions) that are desirable for the manipulator.
Negative impact on self-esteem	Social media can promote comparison with others, which can lead to negative self-esteem and a sense of dissatisfaction with one's life.
Problems with sleep	Using technology before bedtime can lead to sleep disorders and poor quality of rest.

Source: compiled by the authors

In today's globalized era, manipulation is an important factor in the negative impact of information and communication technologies on the psychological consciousness of an individual. Information manipulation has an imperceptible impact on the will, feelings, emotions, and attitudes of the object of influence. The manipulative nature is one of the main and leading features of information technologies. The process of manipulating public attitudes with the use of information and communication technologies of information and psychological influence is a widespread phenomenon in the world. Contemporary researchers prove that the process of manipulating the mass consciousness is mostly carried out under the slogans of freedom, equality, and under the current slogans of significant events in society.

In general, the information provided to us by information and communication technologies goes through mental censorship. The latter stands in the way of the message that appears in the center of human perception (through representational and signaling systems) (Roberts & Yoon, 2021). Human consciousness has the ability to redistribute information and perceive it in its own way. One part of the information message reaches the consciousness as a result of the censorship of the psyche, while the other (much larger) part goes to the subconscious. At the same time, the information message that has entered the subconscious begins to influence the consciousness after a certain period of time. Thus, the process of influencing the thoughts and behavior of a person through the attitudes of consciousness begins (Sutin et al., 2021). Thus, manipulation is a widespread phenomenon in the world that requires resilience from the individual and an understanding of various manipulative aspects. A modern individual should learn to distinguish between useful and harmful information, develop critical thinking, and the ability to manage their emotions when using technology.

The Psychology of the ICT Individual and Current Trends in European Education: Mutual Integrations and Risks

In order to counteract the negative impact of information and communication technologies on personality psychology, the EU countries are implementing specific measures that play an important role in the social sphere, including education. It is worth noting that the combination

of digitalization and education creates peculiar conditions for the training and development of the psychology of students, including in the Republic of Kazakhstan. For example, in the higher education system, informatization is becoming a key condition for increasing the importance of mental types of work and degrees, the gradual transformation from industrial and information paradigms of social development to a knowledge society - a new organization of society in which knowledge becomes not only the basis for economic growth but also the main organizational principle of society (Shakun, 2022). In fact, the knowledge society is becoming an important goal for the educational policy of the EU member states. In previous industrial and information societies, the main task of the education sector was to assimilate and reproduce previous experience in professional and everyday activities, taking into account the available opportunities and resources. However, in the knowledge society, the central aspect is the creation of new knowledge by each individual, using not only existing but also new problem-solving methods and resources (Reid, 2020). The digital revolution and the development of ICTs make it possible to actively engage in the process of knowledge creation, promote the development of creative and creative abilities, and provide ample opportunities for the preservation, dissemination, and access to knowledge (Sönmez, 2021). The use of interactive platforms, online courses, multimedia materials, and other digital tools helps to create a multifaceted and meaningful learning environment, promotes the development of critical thinking, independence, and innovative abilities of students and learners (Poliezhaiev, 2020). Thus, the use of digitalization in EU education contributes to the enhancement of the role of intellectual activity, the training of competent and creative professionals, and facilitates the transition to a knowledge society, where knowledge becomes an important resource and basis for the further development of society. ICT has long been a subject of research and education in Europe. In Germany, in particular, the Philipps-Universität Marburg has a separate Institute of Media Studies. The main areas of its educational work include the study of digital media resources, audiovisual processes of information transmission, media organization, and the work of cinema and television. This institution even has a computer games laboratory, where the Game Studies course was launched, and a media center with access to modern technical equipment. At the European University of Applied Sciences (Berlin, Hamburg), there is a Media Studies Society (Die

Gesellschaft für Medienwissenschaft), whose scientific policy is aimed at studying media in terms of their technical, aesthetic, symbolic, and communicative characteristics. This society has made a significant contribution to understanding the relationship between media and cultural, scientific, economic, political, and social aspects. One of the important areas of work is advocating for the improvement of media literacy among the population. In the context of modern hybrid information threats, the spread of deliberate fakes, and manipulations, this practice is absolutely in demand. Researchers have repeatedly emphasized this fact, pointing to the experience of other European countries (Zhang & Aslan, 2021). Improving digital literacy is indeed an important challenge for modern education in EU countries.

It is obvious that the effective use of interactive technologies is impossible without the parallel creation of special disciplines on digital and information literacy not only for students but also for adults. The trend of lifelong learning is popular in many EU countries. Continuing education promotes the development of new skills in adults and develops their acquired knowledge (Gumennykova et al., 2023). For this reason, many European universities organize various additional courses, webinars, and summer schools for both students and the general public. Such activities are aimed at developing information literacy. It has been proven that specialists with information competence can critically analyze various information and communication technologies, use appropriate methods of searching, analyzing, and interpreting various information texts (Franco & DeLuca, 2019; Khan & Vuopala, 2019). Thus, such individuals have the ability to resist information manipulation, effectively use various digital resources, etc. It should be noted that the emphasis in the study of any discipline at European universities is on the study of information literacy and the formation of digital competence. In particular, as demonstrated in Lavrentieva et al., (2023), at the Berlin University of the Arts (Germany), the educational process is aimed at forming digital competence: "art and media literacy", "information culture", "social and business communication", "visual communication", etc. At the same time, Maastricht University (the Netherlands) uses a variety of information and communication software tools in the learning process, with considerable attention paid to media education and the formation of information competence (Lavrentieva et al., 2023). At the University of Latvia, where the

Faculty of Education, Psychology, and Art operates, the main focus of training is on the use of innovative software solutions, which thus prepares specialists ready for future innovative changes (Andersone, 2020).

In combination with ICTs, the actualization of the European experience can lead to structural changes in the development of the education sector, which should be taken into account by developing countries (in particular, Kazakhstan). At the same time, it is necessary to take into account the risks to the psychology of the individual's consciousness caused by excessive exposure to and use of ICTs. These risks include:

1. Unfortunately, the standardized notion that the "knowledge base" is, in fact, an information resource formed on a certain technical device, which is popular in engineering research circles, causes misunderstandings in the interpretation of the differences between the concepts of "information" and "knowledge".

A successful solution to this problem is possible if the latest pedagogical technologies and computer tools are introduced into the educational process, taking into account the peculiarities of ontogeny and psychophysiology of students. Such an approach will help to take into account the factors of target and work motivation of learners related to the needs of the individual and society for intellectual resources.

2. The introduction of ICTs in many educational institutions faces a contradiction between the capabilities of computer technology and the lack of highly effective curricula aimed at effective learning for students, not just searching for and accumulating information on academic subjects (Sarosa et al., 2022). An important task is to transform such information into knowledge for students, which is now proving to be problematic.

The solution to this problem may be the widespread use of artificial intelligence capabilities. Through this process, educational work can take place with the least human intervention, but with the rational use of digital database resources in its own way. The use of ICT in such circumstances is integrated into the educational process. This experience can also be useful for the realities of Kazakhstan, where the introduction of artificial intelligence is only at its initial stage.

Conclusions

Thus, information and communication technologies play an important role in modern education in the EU member states. Based on the analysis, it was found that certain aspects of their use can be useful for developing countries that are undergoing a certain westernization of educational systems, including the Republic of Kazakhstan. It has been established that the digital revolution and the development of ICT in the European education system have provided an opportunity to actively generate new knowledge, promote the development of creative and creative opportunities for further preservation, dissemination, and access to knowledge. The use of various interactive platforms, online courses, multimedia materials, and other digital tools has contributed to the creation of multifaceted and meaningful learning environments, but ICTs themselves have become an object of research, with both positive and negative aspects. Among the negative aspects, there is primarily a destructive impact on the formation of personality psychology due to detachment, lack of live communication, excessive solitude, etc. At the same time, other difficulties are less evident, as they are related to the fact that there is a misunderstanding of the importance of ICTs for education. In particular, it is demonstrated that the availability of information and its accessibility still do not form knowledge as such at the personal level. In addition, the software is aimed at collecting and retaining information, and learning opportunities are much smaller. The use of artificial intelligence and the formation of in-depth digital competence among teachers are proposed as important elements of the use of ICT in modern times. Therefore, the use of digitalization in EU education contributes to the enhancement of the role of intellectual activity, prepares competent and creative professionals, and facilitates the transition to a knowledge society, where knowledge becomes an important resource and basis for the further development of society. This experience can be used in the Republic of Kazakhstan, but the regulatory framework for introducing digitalization into the educational process will require additional analysis. The harmonization of legislative norms is as much a part of borrowing experience as the practice of using information and communication technologies.

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