

**ISCKMC 2022****International Scientific Congress «KNOWLEDGE, MAN AND CIVILIZATION»****FORMATION OF THE INFORMATION AND DIGITAL CULTURE  
OF UNIVERSITY**

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**Abstract**

The information age is based on the latest digital technologies and has an impact on all socio-cultural spheres. Digital culture is a factor of efficiency and risks reduction of the economy and society digital transformation. There is a need to form digital culture of the individual. The purpose of the research is to study the essence of information and digital culture, to determine methodological approaches to solving this problem, to highlight the features of the digital educational environment and to identify effective technologies that ensure the quality of educational activities in the digital environment and self-realization of students. The article analyzes the key concepts of the problem: culture, information, digitalization, digital environment, information culture, digital culture, information and digital culture, innovation, digital technologies. The article considers information and digital culture as a component of information society, professional culture. It is noted that it is necessary to develop the value bases of activity as a factor of digital socialization. Special attention is paid to the risks of digitalization, the problem of didactic security. The most effective technologies for the formation of information and digital culture of students are identified: technologies for actualizing the motivational potential of the educational environment, portfolio technology, distance learning technologies, technology for rating educational achievements, technology for the development of critical thinking, technology of pedagogical workshop, technology of self-presentation, blockchain, socio-cultural technologies.

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## 1. Introduction

Education at the present stage of development of Russian society is considered as one of the leading factors of social and economic progress, and students – future professional specialists - as the most important potential. To date, information and digital culture is a condition for the safe development of a person in a digital educational environment and promotes socialization, cybersocialization and self-realization of the individual. The need for the formation of an information and digital culture of the individual is emphasized in legislative and regulatory documents.

In the Strategy for the Development of the Information Society in the Russian Federation, taking into account the main provisions of the Okinawa Charter of the Global Information Society, the Declaration of Principles Building an Information Society – a Global Challenge in the New Millennium (Geneva, 2003 – Tunis, 2005) and other international legislative acts consider the main tasks that determine the formation of an information society in our country: in particular, the formation of a modern information and telecommunications infrastructure, the provision of high-quality services on its basis and ensuring a high level of accessibility to the population of information and technology; improving the quality of education. Information and communication technologies ensure the improvement of the quality of the pedagogical process and educational services, the development of information and digital culture and promote digital socialization.

## 2. Problem Statement

The requirements for a modern highly qualified graduate are determined by the introduction of information and digital technologies. The ability to carry out professional activities in a digital environment becomes an obligatory component of specialist training, a condition for professional mobility and its competitiveness.

The expansion of the processes of digitalization in culture is accompanied by the transformation of value orientations, the picture of the world, the change in communications, the system of social relations and behavioral models. Therefore, as Sokolova (2012) notes, the study of digital culture affects the most diverse aspects of modern human life, involves an analysis of changes in the practices and products of human activity themselves.

During the pandemic, the proportion of remote and hybrid forms of engagement increased, live communication decreased. We agree with the position of Kotlyarova (2021), who notes that forced isolation and, consequently, the intensification of forms of distance learning were another significant factor in the emergence of innovations in the field of additional vocational education. For some researchers, exploring digital culture means simply exploring the transition of mass media from analog to digital formats. Here, digital culture is identified with new media. We see an example of this approach in the well-known Australian study by Deuz. The ethical aspect is important in the process of forming the information and digital culture of students using innovative technologies, because along with the positive aspects of digitalization of education, there are negative changes (loss of basic cognitive competencies, departure from fundamentals, threat to health, reduction of personal contacts, etc.).

### **3. Research Questions**

- i. The main concept of this study is information and digital culture, by which we will understand the willingness and ability to carry out innovative activities in a constantly updated professional environment, reflecting a system of values, attitudes, norms, and rules of behavior in the process of social interaction.
- ii. The formation of a student's information and digital culture is a continuous process of quantitative and qualitative changes in all components (motivational-value, personal, informational-content, activity-reflective) using modern information and communication technologies in a socio-cultural environment.

### **4. Purpose of the Study**

The purpose of this work is to study the essence of information and digital culture, to determine methodological approaches to solving the problem under study, to highlight the features of the digital educational environment, the possibilities of pedagogical technologies in improving the quality of educational services.

### **5. Research Methods**

Through conceptual and terminological analysis, the main concepts of the problem under consideration were identified: information and digital culture, the formation of information and digital culture.

Through theoretical and methodological analysis, approaches to the problem under study are determined: culturological, informational, cybernetic, creative and activity.

As a result of the content analysis, the main components of the formation of the student's information and digital culture are identified: motivational-value, personal, informational-content, activity-reflective.

As a result of the theoretical and methodological analysis of practical activities, the most effective innovative technologies have been identified that ensure the success of the pedagogical process for the formation of the student's information and digital culture in the socio-educational environment of the university. The design method is the leading technology and pedagogical tool for the formation of information and digital culture of students.

### **6. Findings**

The issues of training future specialists for professional activity and improving the effectiveness of higher education have always been relevant. Today, in the digital environment, the formation of information and digital culture is one of the most important tasks of the education system, because with the development of digitalization, not only development opportunities, but also new threats are multiplying.

The development of the theory and practice of information and digital culture involves determining not only the factors of its relevance, but also the formation of the conceptual base of information and digital culture. One of the key concepts in our study is the concept of *culture*, which scientists consider as a form of realization of the personality, its creative potential; as a value attitude to reality, which is of value to the individual; as a given artificially created by the hands and mind of a person (Tulchinsky, 2017). Culture should be perceived as a value, familiarization with which begins in the process of education when students comprehend the values of civilization.

If we understand culture as an integral system based on values and norms created in the process of human society development and determining people's behavior and ways of social interactions at each individual historical stage, then familiarization with culture can be considered as a process of inculturation. Teachers emphasize that culture and education are two sides of a genetically unified process of anthropo- and sociogenesis. Their harmonious interaction ensures not only the production, but also the transfer, assimilation and consumption of knowledge and values (Bueva, 1994).

Summarizing the positions of scientists, it should be noted that the grounds for determining the essence of the concept of *culture* are: informational (socio-cultural codes), axiological (valuable for the development of society); activity (the process of developing values, the development of information codes); translational (transmission of information codes in general and axiocodes in particular) and pedagogical (assignment of axiocodes).

Let's turn to the concept of *information*. Information is the meaning that a person assigns to data based on the rules known to him for presenting facts, ideas, and messages in them. Information is knowledge that is needed and that has a consumer, knowledge that is in constant circulation, in motion (Afanasyev, 2017). So, the common thing in these positions is that information is an objective process of collecting, processing (encoding) and transmitting information.

Focusing on global digitalization, there is a need for broader training of specialists both in the subject area and in the field of self-organization and self-learning ability. The ability to search, critically analyze information, process it will allow the student to develop an information and digital culture.

The development of the Internet and mobile communications are the basic technologies of digitalization a new level of technology implementation in various aspects of human life after automation and informatization (Kotlyarova, 2021).

In Europe, in 2018, an Action Plan for the digital transformation of education was adopted. Among the tasks: to provide at least 70 % of the European population aged 16 to 74 with at least basic digital skills by 2025; to reduce by 2030 the proportion of students aged 13–14 who do not have computer and information technology literacy, up to less than 15 %; special attention should be paid to digital transformation in the vocational education and training sector to ensure sustainable competitiveness, social justice, and adaptability.

The production of information and communication becomes the central task of progress development. The introduction of the Internet opens a completely new level of communication development. The teacher is a conductor of information and digital culture, he includes students in a variety of activities. We highlight the main ones: educational and cognitive (participation in discussions, debates, round tables, pedagogical workshops, solving test tasks, pedagogical tasks, etc.); research

(creating projects, participating in online conferences, forums, etc.); creative-creative (creation of presentations, videos, analysis of information flows, etc.); reflexive-evaluative (evaluation of oneself as a participant in the dialogue, study of evaluation standards, etc.); corrective (development of an action plan, memos, algorithms, etc.).

Having analyzed the research (Balikaeva et al., 2018; Gnatyshina, 2019; Kotlyarova, 2021; Strelnikov, 2015; Tarasova & Ageeva, 2021, etc.), devoted to information and digital culture, we define information and digital culture as an integral part of traditional culture, a component of the professional culture of a student's personality, manifested in a value attitude to information and providing conditions for self-organization, self-realization in the design, creative-creative, reflexive-evaluative activity.

We attributed to the structural components of the information and digital culture: motivational-value (interest, motive, need for independent activity), personal (professional and personal qualities: mobility, stress resistance, independence, organization, striving for improvement, etc.), informative (general professional and special knowledge, knowledge of innovative educational technologies), activity-reflexive (development of skills of independent search, selection and analysis of necessary information, skills and practical experience of its organization, transformation, preservation and transfer, the ability to reflect, knowledge of ways to adjust and analyze activities). Undoubtedly, information and digital culture is an important component in the life of modern society.

Let's focus on the methodological foundations of the claimed research. Having defined the meaningful content of the definition of *information and digital culture* considering the axiological component of the definition, we consider culturological, informational, cybernetic, and creative-activity approaches appropriate.

We interpret the culturological approach as a set of norms and values of formation, terminal values, and their implementation in the process of formation of information and digital culture of students. The implementation of the culturological approach allows us to consider the process of formation of information and digital culture from the perspective of introducing the individual to cultural values, values of information and the digital environment by including the student in a variety of activities.

Assimilating the values of the socio-cultural, digital environment and turning them into value orientations, motivational forces of their behavior, a person becomes an active subject of creative activity. The world of personal values has now become the object of close study by specialists, publications have appeared devoted to the study of the current state of value orientations of young people.

The information approach allows us to study the process of information exchange; implies the study of an object as a system capable of perceiving, storing, processing, and transmitting information. As N.O. Yakovleva notes, this approach allows us to study from a unified perspective those aspects of natural and social objects for which the process of information exchange is essential. At the same time, it requires abstraction from the biological, social, physical essence of the object, identification and study of its informational nature, i.e. implies the study of an object as a system capable of perceiving, storing, processing and transmitting information (Yakovleva, 2009).

One of the components of the information culture of society is the information environment. Gnatyshina (2019) interprets the modern information environment as a category combining information

flows, means of communication of all forms and configurations, which is a global phenomenon in the life of a modern person. It is a condition of comfort, speed, and quality of his life.

The cybernetic approach will allow developing critical, analytical, algorithmic thinking, optimizing reflexive and evaluative activity. It is necessary not only the qualitative assimilation of a large amount of information, but also the formation of competencies that contribute to solving information problems. The cybernetic approach allows us to consider the learning process from the point of view of management theory, to model human behavior and thought processes.

The creative-activity approach as a practice-oriented tactic meets the realities of modernity. Activity will only have social significance when, firstly, it is carried out voluntarily and consciously, secondly, it brings a socially useful result, and thirdly, it is combined with positive moral ways to achieve goals. Mastery of activity is a condition for the formation of an active personality. It is in the process of activity that social relations are realized (Grevtseva & Tsiulina, 2021).

Currently, the following educational technologies are widely used:

- i. technologies of actualization of the motivational potential of the educational environment, the purpose of which is to ensure the search and activation of those resources of the educational environment that contribute to the formation of positive internal motivation of the subjects of the educational process;
- ii. "portfolio" technology, which allows you to select, systematize and analyze information, work with various sources of information; track the dynamics of the student's attitude to the academic discipline. The portfolio shows possible directions for updating the traditional assessment system;
- iii. distance educational technologies implemented mainly with the use of informatization and telecommunications, with indirect or not completely indirect interaction of the student and the teaching staff;
- iv. technologies for rating educational achievements as an assessment method, a means of individualizing the educational process, optimizing the student's independent work;
- v. the technology of developing critical thinking through reading and writing (J. L. Steele, K. Meredith, D. Kluster, R.H. Johnson, etc.) contributes to the formation of a person's position as a subject of his own educational and cognitive activity, the ability to reflect on it, organize, implement, achieve independently set goals.
- vi. the technology of the pedagogical workshop is a form of joint dialogical activity of a teacher with students, characterized by a reflexive personality–activity organization aimed at creative self-education, self-development, and self-realization of the individual.
- vii. the technology of self-presentation, the essence of which is to convey the necessary information to the listener's consciousness with the help of special means, to state their position in a reasoned manner.
- viii. Blockchain technology that provides data storage, has a distributed resource, guarantees the security of data storage in digital format, and monitors their change. In the education system, blockchain is used to store information about exams, diplomas and certificates issued, etc.

Sociocultural technologies have also become popular (O.A. Vakhromeeva, Yu.B. Vladimirova, A.D. Zharkov, T.G. Kiseleva, Yu.D. Krasilnikova, E.A. Malianov, A.V. Sokolov, N.N. Yaroshenko, etc.), contributing to the change of qualitative characteristics of personality that contribute to the development of a person, his creative abilities, entry into the world of values.

Independent work is of particular importance in the formation of information and digital culture of students. For example, in the process of distance learning, students were offered the following tasks:

- i. write an essay about what proposals you would make regarding the organization of distance learning in our country; formulate and justify your proposals based on your current experience;
- ii. develop an intelligence map *Relevance of the distance learning system for the university, the system of advanced training*;
- iii. based on the didactic properties and functions of the Internet, make a list of didactic properties and functions of television and sound recording;
- iv. create a pedagogical cluster on the topic *Innovative educational technologies*;
- v. develop criteria for evaluating socially significant projects;
- vi. formulate your vision of the possibility of organizing a particular model of distance learning in your educational institution; note where to start, what specific events to organize, under what conditions such a model can work on the part of the administration.

We use feedback methods: express survey, questionnaires, essays, tests, projects, self-reflection, etc. For example, students were asked to identify the positive and negative aspects of distance learning. The positive aspects of the students were attributed to: reducing financial costs, saving time, increasing responsibility, independence, etc.; the main disadvantage of distance learning is the lack of personal interaction with the teacher, students.

## 7. Conclusion

The relevance of scientists' research is obvious, since what happens to young people in the present determines the future of society's culture. New educational technologies have an impact on the processes of socialization, cybersocialization, formation of information and digital culture of students. The use of educational, including digital technologies, allows individuals to make decisions in a real-world situation, in communication with the relevant network community.

Not all innovations can be called useless or dangerous, many of them make work easier, make many opportunities available, and form a new generation. The most important thing is that the realization of these changes should be consistent, logical, especially if it is relevant to the younger generation.

The distinctive features of modern educational technologies are the change in the nature of the activity and interaction of the subjects of the educational process, considering the principles of algorithmization, creativity, reflexivity, activity orientation. It is also necessary to consider psychological, pedagogical, valeological, ergonomic requirements in the process of forming the information and digital culture of students; to use methods of stimulating and monitoring and evaluating knowledge and to prevent the risks of reducing the quality of education.

