

MSC 2020**International Scientific and Practical Conference «MAN. SOCIETY.
COMMUNICATION»****DEVELOPMENT OF DIGITAL CIVILIZATION IN RUSSIA:
CONTRIBUTION OF DIGITAL EDUCATION**

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Abstract

The introduction of digital technologies affects the development of society, the formation of the technological structure and culture of society, the worldview and positioning of a person inside. The modern stage in the evolution of the information society is the development of digital civilization. The signs of digital civilization are the emergence of digital infrastructure, the spread of digital technology, the construction of a digital society. The purpose of the study is to identify the role of digital education in the development of digital civilization and the construction of a digital society. Digital education is an endogenous power that provides the sustainable development of digital civilization in Russia, contributes to the creation of cultural and anthropological models of digital reality development, the formation of digital competencies and digital literacy. It shows an ability to solve problems safely and effectively of a personal, professional and social nature using digital technologies. There is also a conclusion about the influence of digital technologies on the economic and social development of society. A new stage of civilization development defines new levels of society, culture, economy, law and education construction. With a balanced use, digital technologies contribute to meeting the needs of a person in production, intellectual, spiritual and creative activities and provide an increase in the people's quality of life, their intellectual development. The digitalization of education determines a new qualitative stage in the development of society.

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1. Introduction

The study of the civilization development is a difficult and multidimensional problem. Civilization is defined as a historical phenomenon that is constantly evolving and can be determined in each period by all new standards. Civilization is considered as a certain stage in the development of the material and spiritual life of people, the main features of which are steadily reproduced in society for a long time. It characterizes the nature and level of social progress of society, the stage of its material and spiritual culture progress, achieved in certain period.

The appeal to the problem of the digital civilization development in Russia is justified by methodological and practical reasons. The influence of digital technologies contributes to the creation of “new means of communication, new living and working conditions” (Tomyuk et al., 2019), and to the emergence of digital civilization. In the context of digitalization of all spheres of human activity, education also acquires an innovative character.

Digitalization requires the training of certain staff, without which digital transformation and the safe existence of a digital society are impossible. According to some researchers, representatives of digital and non-digital generations are very different from each other (Ivanov et al., 2017). They perceive and process information in different ways, use other thinking algorithms. This fact created a large generation gap. We believe that young people still have a lot to learn in order to position themselves as members of a digital society. “The widespread use of the Internet and mobile devices, the popularity of social networks, the use of real-time geolocation data help to optimize processes” (Popov & Semyachkov, 2018, p. 1090) in everyday life, but create additional cyber threats as well. Preparation for the conscious, safe and productive use of digital technology in practice in order to meet one’s intellectual and socio-economic needs should begin at school. In this regard, it is advisable to talk about digital education as the main resource for digital socialization of members of the digital society and the development of digital civilization.

2. Problem Statement

Quite stable features and signs (habitat, economic and spiritual spheres, culture, language, etc.) characterize civilization. Development of digital civilization is an integral result of the digitalization of human activity, which we observe today. The problem of our research is determined by the question: “What are the main features and signs of digital civilization in terms of the characteristics of a digital society, and what contribution can digital education make to the development of digital civilization in Russia?”

3. Research Questions

The polysemantic, indefinite, subjective, interdisciplinary concept of “civilization” is interpreted in different contexts (philosophical, historical, sociological, systemological aspects). Civilization is defined as a combination of unique economic, social, political, spiritual, moral and other structures that distinguish one historical community from the others. Civilization is a result of the need to resolve a problem situation, an answer to the challenges of the natural and social environment. The modern form of industrial civilization is called information civilization. Digital technologies contribute to the development of digital

civilization and increase the technical and intellectual abilities of people. Rational use and planned organization of cognitive activity can allow people to generate on this information basis new results that are highly significant and original. The task of modern education is to “teach” young people how to use these information resources properly. Without solving the task, it is impossible to build a digital economy and a digital society.

3.1. Digital Civilization and Digitalization

The formation of digital civilization takes place in the complex evolutionary process of development of modern Russian society, which is going through the era of digitalization. Digitalization has a transformative effect on society, reorganizes it into a digital one and presents “a steady trend and an unavoidable process of adaptation to new digital realities” (Pavlyutenkova, 2019, p. 122). In the culture of a digital society, the “digitality” becomes the dominant value. Digitalization is accompanied by the active use of modern digital devices and technologies. It strengthens and modernizes information and communication processes in society. Digitalization changes the economic structure, causes fundamental changes in the system of social relations. The new reality of the digital world at the same time offers many instruments and opportunities that allow a person to feel harmonious in the modern world; preserve cultural diversity, traditions of the Russian ethnic group (Shestakova & Polanski, 2019). With balanced use, digital technologies contribute to meeting people needs in production, intellectual, spiritual and creative activities and provide an increase in the people’s quality of life, their intellectual development. Today we witness the integration of the physical and digital environment of people, the formation of new ecosystems. Digital civilization creates unlimited conditions for the development of human abilities, emotional and spiritual spheres (Akishina & Piryazeva, 2019).

Digital civilization is also called the civilization of knowledge, hope, risk and threat. This is a natural fact, since new social and ethical problems reflect the stage in the formation of a digital society and the development of digital civilization (Guryanova et al., 2020). According to scientists, control by objects in a digital society (“digitalized citizen”), a change in the younger generation’s style of thinking, attention, perception (clip nature, fragmented perception, loss of causal links (Kolchurina et al., 2019), the concept of the Internet as an absolute knowledge, the loss of meaningful and informative control of digital content are among these risks and threats. There is a social exclusion of people (Pittman & Reich, 2016), the value of real social connections is lost (Käll et al., 2020), the importance and influence of the family decline (Zanina & Miroshnichenko, 2019), cyber threats with the help of artificial intelligence take place (Sukhodolov & Bychkova, 2018), etc. This is an incomplete list of social warnings however, in our opinion, these concerns are precocious. Threats exist in any society and any civilization and they have a different character. The main task of the digital society consists in controlling potential dangers and competent organization of activities in digital interaction, maximizing the use of digital technology resources to improve and develop human potential, strengthening Russian society and reducing risks due to the corrective effect of digital education.

3.2. Digital Civilization, Digital Society and Culture

The concepts of digital civilization and digital society are not identical. The concept of digital civilization is bigger. The undoubted signs of digital civilization are the development of digital infrastructure, the spread of digital technology, the formation of a digital society. It shows a society in which digital technologies are a source of cultural and socio-economic changes, a means of establishing horizontal and vertical interpersonal network communications, etc. The society reflects the main features of current civilization. The formation of digital culture and digital literacy, which determine the lifestyle and characteristics of human behavior in the digital environment (Glass & Hickman, 2020) become relevant. There is a change in the education system. Digital technologies are the basis for revising the structure of modern education, justifying the principles on which it is necessary to build education today. It is proposed to use the psychological health of an individual, the creation of a comfortable and safe digital educational environment as the main guidelines of digital education. Education models are changing, training tools and technologies are being diversified, their interactivity is being enhanced, there is a search for flexible and individual educational paths, educational content becomes accessible, new cognitive tools based on digital technologies are being developed.

4. Purpose of the Study

The purpose of our study is to define the role of digital education in the development of digital civilization in Russia and the construction of digital society.

5. Research Methods

The study is based on the interpretation of civilization as a historical phenomenon (historical approach), the stage of development of the material and spiritual life (cultural approach), the level of social progress in society (sociological approach). The article analyzes the main features of civilization (digital environment, production and economic activities, spiritual and creative sphere in the digital environment, digital culture and virtual space as a communication environment and socialization factor (Zanina & Miroshnichenko, 2019). The connection between the concepts of digital civilization, digital society and digital culture is established. In this field, the authors determine the features of digital civilization, which exist due to the active introduction and influence of digital technologies on all spheres of human activity. The analysis of the scientific literature and the personal opinion of the authors about human health as the main value of society allows us to identify possible risks and threats of digitalization for a person as a member of a digital society. The analysis of digitalization of education as a social phenomenon is carried out. Education trains professional staff for society. At the same time, digital technologies make it possible to optimize and automate many educational processes. In the digital educational environment, education contributes to the development of digital literacy and digital competencies of people. Summarizing the features of digital interaction with use of the Internet, the authors consider digital literacy as a vital skill of the digital society, and digital education as the main resource for the development of digital civilization due to the creation of cultural and anthropological models of digital world development.

6. Findings

Digital technologies transform education, provide unlimited access to information resources and the possibility of organizing collaboration and intensive communication in a global space. However, the effective use of digital technologies in specific areas on a professional scale, including the education system, requires an understanding of the principles of their implementation. The massive introduction of digital technologies in everyday and professional life of almost all age categories of Russian citizens actualizes the problem of digital literacy. In a digital society, it is important to know the basics of software and hardware, to have information literacy, to be aware of the basics of information security, to be able to organize communication and cooperation, to use digital technologies in solving problems, to have a number of career competencies and know how to connect these spheres together. The basics of digital literacy are learned in the school. In this situation, education organizations are objectively “the only ones of the key agents of the economy digital transformation, since they provide the formation of digital competencies for the younger generation” (Ivashova et al., 2019, p. 1341). Digital literacy becomes a means of world cognition (Akter & Haque, 2018) therefore, the perception, development and implementation of digital technologies, as well as digitalization in general, should be carried out on a scientific basis. Representatives of digital civilization have to understand the conceptual idea and principles of functioning of a particular digital innovation and should not be ordinary consumers of existing technologies. In this sense, digital competencies and human digital literacy are vital skills and relevant results of education.

The digital generation perceives the digitalization of public life naturally and organically. A general idea of the principles for implementing digital technology should be transmitted to students since school. An important role is given to computer science as an academic discipline. This discipline at the present stage undertakes new development process and requires its content to be completed with new sections in the digital aspect. Digital education provides the creation of models of cultural and anthropological development of digital reality: how to work with digital devices, to organize your online space, to perceive digital content critically, to organize effective communication and cooperation in virtual space, to ensure your security in the digital environment, etc.

The basic principles of digital education are focused on the actualization of personal potential, the formation of willingness for self-education and self-development, the maintaining of psychological health, vitality and stress resistance of a person; development of systemic and critical thinking, research point of view; understanding of life value; the formation of an active life position, an “environmentalist” when digital technologies contribute to the spiritual and moral improvement of a person (Akhmetova, 2020).

The elements of digital education are revealed in the study (Usacheva & Chernyakov, 2020). Digital education is an endogenous power that provides the sustainable development of digital civilization in Russia. It contributes to the development of digital competencies, digital literacy and the digital culture of people. These new personal characteristics allow an individual to understand the impact of digitalization on a person and society; to approach the choice and productive use of digital technologies for work, leisure and communication confidently, critically, consciously and in a balanced way (Spante et al., 2018) for the benefit of human civilization development.

Constant development and social cohesion of people in a digital society depend on whether all representatives of society have digital competencies or not. However, young people perform the main function of introducing new ideas, initiatives, new life forms into practice, therefore, digital competencies, digital literacy of students must be formed at school, and this is advisable to do in a digital educational environment.

7. Conclusion

Thus, the development of digital civilization requires additional improvement of digital literacy and information security issues. Digital technological practice should be combined with the socio-cultural basis of a digital society, social progress. A new qualitative stage in the development of society is determined by the digitalization of education. Digital education has high expectations for digital competencies and human digital literacy formation. Being available to everyone, it will allow people, if necessary, to update continuously their knowledge and comply with digital progress thanks to open online courses, modern digital devices and services, a focus on self-education, under the clear guidance of qualified teachers.

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References

- Akhmetova, D. (2020). “Chelovek ekologicheskiy” v epokhy tsifrovizatsii [“Environmentalist” in Digitalization Age] *Vyshee obrazovaniye v Rossii* [Higher Education in Russia], 5(29), 117–126. <https://doi.org/10.31992/0869-3617-2020-29-5-117-126>
- Akishina, E., & Piryazeva, E. (2019). Contemporary Digital Art as a Factor in the Creative Development of Personality. *The European Proceedings of Social & Behavioural Sciences. EpSBS, LXIX–EEIA*, 18–24. <https://doi.org/10.15405/epsbs.2019.09.02.3>
- Akter, M., & Haque, E. (2018). Assessing Digital Literacy of Undergraduate Students of the Faculty of Arts, University of Dhaka. *SRELS Journal of Information Management*, 55(3), 141–146.
- Glass, W., & Hickman, D. (2020). *Strategies for Improving and Modeling Digital Technology and Literacy Integration*. In J. Keengwe, & G. Onchwari (Eds.), *Handbook of Research on Literacy and Digital Technology Integration in Teacher Education*, (pp.228–244), IGI Global.
- Guryanova, A. V., Smotrova, I. V., Makhovikov, A. E., & Koychubaev, A. S. (2020). Socio-ethical Problems of the Digital Economy: Challenges and Risks. In Ashmarina S., Mesquita A., & Vochozka M. (Eds.), *Digital Transformation of the Economy: Challenges, Trends and New Opportunities. Advances in Intelligent Systems and Computing* (pp. 96-102), Cham. https://doi.org/10.1007/978-3-030-11367-4_9
- Ivanov, V., Kaybiyainen, A., & Miftakhutdinova, L. (2017). Inzhenernoye obrazovaniye v tsifrovom mire [Engineering Education in Digital World]. *Vyshee obrazovaniye v Rossii* [Higher Education in Russia], 12(218), 136–143.
- Ivashova, V., Goncharov, V., Erokhin, A., Kolosova, O., Migacheva, M., & Berkovsky, V. (2019). Education in a Digital Society: The Problem of Formation of Information Culture. *International Journal of Civil Engineering and Technology*, 10(3), 1341–1347.
- Käll, A., Jägholm, S., Hesser, H., Andersson, F., Mathaldi, A., Norkvist, B. T., & Andersson, G. (2020). Internet-based Cognitive Behavior Therapy for Loneliness: a Pilot Randomized Controlled Trial. *Behavior therapy*, 1(51), 54–68.

- Kolchurina, I., Klimashina, Y., Shipunova, V., Sabanova, L., Basite, K., & Kolchurina, M. (2019). Practice-Oriented Technologies in the Educational Process as the Basis for the Economic Development of Society. *Advances in Economics, Business and Management Research*, 131, 287–292. Atlantis Press. <https://doi.org/10.2991/aebmr.k.200324.053>
- Pavlyutenkova, M. (2019). Elektronnoye pravitelstvo vs tsifrovoye pravitelstvo v kontekste tsifrovoy informatsii [E-government vs Digital Government in the Context of Digital Information] *Monitoring obshchestvennogo mneniya: Ekonomicheskkiye I sotsialnyye peremeny* [Monitoring of public opinion: Economic and Social Changes Journal], 5, 120–135. <https://doi.org/10.14515/monitoring.2019.5.07>
- Pittman, M., & Reich, B. (2016). Social Media and Loneliness: Why an Instagram Picture May Be Worth More Than a Thousand Twitter Words. *Computers in Human Behavior*, 62, 155–167.
- Popov, E., & Semyachkov, K. (2018). Problemy ekonomicheskoy bezopasnosti tsifrovogo obshchestva v usloviyakh globalizatsii [Problems of Economical Security of Digital Society in the Conditions of Globalization] *Ekonomika regiona* [Economy of Region], 14(4), 1088–1101.
- Shestakova, I., & Polanski, S. (2019). Digital Civilization and Problems of Cultural Diversity: Political Actors or Infocommunication Technologies. *Advances in Social Science, Education and Humanities Research*, 273, 412–416. <https://dx.doi.org/10.2991/asis-18.2019.84>
- Spante, M., Hashemi, S., Lundin, M., & Algers, A. (2018). Digital competence and digital literacy in higher education research: Systematic review of concept use. *Cogent Education*, 5(1), 1519143.
- Sukhodolov, A., & Bychkova, A. (2018). Iskustvennyy intellekt v protivodeistvii prestupnosti, ee prognozirovaniya, preduprezhdeniya i evolutsii [Artificial Intelligence against Crime, its Forecasting, Prevention and Evolution] *Vserossiiskiy kriminologicheskyy zhurnal* [Russian Journal of Criminology], 12(6), 753–766.
- Tomyuk, O., Dyachkova, M., Kirillova, N., & Dudchik, A. (2019). Tsifrovizatsiya obrazovatelnoy sredy kak faktor lichnostnogo i professionalnogo samoopredeleniya obuchayuschikhsya [Digitalization of Educational Environment as a Factor of Personal and Professional Self-determination of Students] *Perspektivy nauki i obrazovaniya* [Perspectives of Science and Education], 6(42), 422–434. <https://doi.org/10.32744/pse.2019.6.35>
- Usacheva, O., & Chernyakov, M. (2020). Otsenka gotovnosti vuzov k perekhodu k tsifrovoy obrazovatelnoy srede [Evaluation of Universities' Readiness to Shift to Digital Educational Environment] *Vysshyee obrazovaniye v Rossii* [Higher Education in Russia], 5(29), 53–62. <https://doi.org/10.31992/0869-3617-2020-29-5-53-62>
- Zanina, L., & Miroshnichenko, A. (2019). Collaboration of high school and school in ensuring socialization of students. *The European Proceedings of Social & Behavioural Sciences. EpSBS, LXIX*, 1008–1017. <https://doi.org/10.15405/epsbs.2019.09.02.114>