

## ПЕДАГОГИЧЕСКИЕ НАУКИ

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### PHENOMENOLOGICAL FEATURES OF THE DIGITALIZATION OF EDUCATION AS ONE OF THE DETERMINING FACTORS IN THE INNOVATIVE DEVELOPMENT OF SOCIETY IN THE REPUBLIC OF BELARUS<sup>1</sup>

**Objektive:** *identification of phenomenological characteristics of the process of digitalization of the educational sphere, which is presented as one of the factors that determine the innovative development of modern society in the Republic of Belarus, the formation and development of the economy of knowledge and human capital.*

**Materials and methods.** *When writing the article, a source study base was used, within the framework of which scientific publications on research issues were presented for study, as well as the provisions of the Concept of digital transformation of processes in the education system of the Republic of Belarus for 2019-2025. The study uses methods: content analysis of sources, a comparative-comparative method.*

**Results.** *In the course of the study, phenomenological features of the digitalization of education were identified, which, under conditions of technologization, allow us to consider the digital transformation of this sphere as one of the determining factors in the high-tech development of modern society.*

**Conclusion.** *The purpose of the study has been achieved. The main characteristics of the digitalization of education have been identified, allowing in their dialectical unity to determine the studied phenomenon as a complex and multifaceted socio-cultural phenomenon, which is the subject of research by the author of this article in relation to the problem of ensuring continuity at the systemic levels of the educational sphere.*

**Keywords:** *digitalization of society, education system, digital transformation of education, information and communication space, technologization of education.*

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### ФЕНОМЕНОЛОГИЧЕСКИЕ ЧЕРТЫ ЦИФРОВИЗАЦИИ ОБРАЗОВАНИЯ КАК ОДНОГО ИЗ ДЕТЕРМИНИРУЮЩИХ ФАКТОРОВ ИННОВАЦИОННОГО РАЗВИТИЯ СОЦИУМА В РЕСПУБЛИКЕ БЕЛАРУСЬ

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**Цель** – выявление феноменологических характеристик процесса цифровизации образовательной сферы, представляемого в качестве одного из факторов, которые определяют инновационное развитие современного общества в Республике Беларусь, становление и развитие экономики знаний и человеческого капитала.

**Материалы и методы.** При написании статьи использована источниковедческая база, в рамках которой для изучения представлены научные публикации по проблематике исследования, а также положения Концепции цифровой трансформации процессов в системе образования Республики Беларусь на 2019–2025 гг. В исследовании использованы методы: контент-анализ источников, сравнительно-сопоставительный метод.

**Результаты.** В ходе исследования выявлены феноменологические черты цифровизации образования, которые в условиях технологизации позволяют рассматривать цифровую трансформацию данной сферы в качестве одного из детерминирующих факторов высокотехнологического развития современного социума.

**Заключение.** Цель исследования достигнута. Выявлены основные характеристики цифровизации образования, позволяющие в их диалектическом единстве определять изучаемое явление как сложный и многоаспектный социально-культурный феномен, являющийся предметом исследования автора данной статьи применительно к проблематике обеспечения преемственности на системных уровнях образовательной сферы.

**Ключевые слова:** цифровизация социума, система образования, цифровая трансформация образования, информационно-коммуникационное пространство, технологизация образования.

#### What this paper adds

A modern look at the problems of issues related to the processes of digitalization of the educational sphere, defined in its originality as one of the significant trends in the development of education within the framework of the paradigm slogan "Education through life," is presented. From the standpoint of understanding socio-historical, philosophical, cultural and pedagogical meanings, the characteristics of digitalization of education were revealed, allowing to assess the phenomenological essence of this subject of research. Prospects for studying the declared problems are outlined, taking into account the maturing challenges and threats of a global nature.

#### Научная новизна статьи

Представлен современный взгляд на проблематику вопросов, связанных с процессами цифровизации образовательной сферы, определяемых в своем своеобразии в качестве одной из значимых тенденций развития образования в рамках парадигмального лозунга «Образование через всю жизнь». С позиций понимания социально-исторических, философско-культурологических и педагогических смыслов выявлены характеристики цифровизации образования, позволяющие оценивать феноменологическую сущность данного предмета исследования. Обозначены перспективы изучения заявленной проблематики с учетом вызревающих вызовов и угроз глобального характера.

**Introduction.** The processes of digital transformation of the field of education, which largely determines the qualitative component of the dynamic development of modern society in the context of exacerbation of challenges and threats of a global nature, are the subject of wide scientific consideration by researchers in the Republic of Belarus and in the post-soviet space [1–20]. Theoretical and methodological studies by A.M. Aleksankov [1], I.P. Gladilina and I.G. Erma-kova [5], I.L. Shevlyakova-Borzenko [18–20] and generalizations of a practical-oriented nature

based on the analysis of international experience make it possible to determine the main trends in the development of education in digitalization. Important qualitative changes in the implementation of the provisions of the Concept of Digital Transformation of Processes in the Education System of the Republic of Belarus for 2019-2025 [21] are considered in the publications of V.A. Bogush and E.N. Shneiderov [2], I.N. Emelyanovich [6], N.V. Ermalinskaya and T.G. Filchuk [7], P.A. Lis [12], V.A. Prytkov [13]. These authors summarize the experience of the

practical activities of higher education institutions in the integration of innovative technologies, the educational process. The problematic field of issues related to the deterministic influence of digitalization both on the educational process in institutions of higher education and on the field of education as a whole is investigated in the works of M.M. Kovalev [9], P.D. Rabinovich [14], L.G. Titarenko [15], A.Yu. Uvarov [16], M.A. Choshanov [17]. Theoretical generalizations of these authors are correlated with conclusions in the studies of E.A. Butina [3], A.V. Vorokhobov [4], O.L. Zhuk [8], A.M. Kondakov [10], M.I. Korzina [11]. The authors highlight the determinants that determine institutional changes in the development of higher education institutions, as well as the prospects for the evolution of modern universities to models 3.0 (research and entrepreneurial university) and 4.0 (social and entrepreneurial digital university), taking into account the prospects for the digital transformation of the educational sphere in the face of challenges and threats of the fourth industrial revolution.

The studies noted by us allow us to determine the extensive problematic field of scientific search and prospects for studying the processes of digitalization of education based on the existing traditions of a systematic approach and interdisciplinary in the scientific reflection carried out (historical, social and philosophical, social and psychological and pedagogical analysis), as well as a clear understanding of the phenomenological characteristics of digitalization in the educational field. Their identification will allow not only to undergo a more thorough scientific analysis of the milestone changes in education carried out at the end of the first quarter of the century (including in the Republic of Belarus), but also to assess the prospects for its development in the face of increasing risks and threats of a global nature.

In due concretization, in order to determine the phenomenological characteristics of the digitalization of education, we identified the following as key tasks: the concretization of the conceptual and terminological apparatus of research; determination of the main theoretical and methodological approaches in understanding the essence of the phenomenon of digitalization in education; implementation of detailed characteristics of phenomenological features of digitalization of the educational sphere; actualization of

the problem of applying the technical, technological and didactic potential of innovative technologies (including artificial intelligence) in ensuring the continuity of continuous education and institutional changes caused by the processes of digitalization and the formation of the knowledge economy.

**Main part.** The variety of definitions existing in research on the digitalization of education allows us to consider the phenomenon we are studying as a stage of the information revolution in the educational sphere, which, within the framework of a linear understanding of the process of socio-historical and technological development, follows the stage of informatization. The stage of acquisition of educational institutions with computer equipment, creation and development of technical infrastructure, high-speed broadcasting and information preservation systems, saturation of the educational services market with educational software products was replaced by a qualitatively new stage in the stage development of the educational sphere. Its essential content, as well as the result of dynamic changes, are: increasing the efficiency of the educational system; improving the quality of life and accelerating the pace of development of the individual and society in the context of the formation of the knowledge economy; the evolution of the information and communication space, accompanied by integration into the formation of innovative information and communication technologies based on the use of high-tech technical solutions. By these we mean developments in the field of robotics, means of artificial and hybrid intelligence, augmented and virtual reality. In accordance with competent and active approaches, it is advisable to determine the digitalization of education as a global trend in the development of the educational sphere, which is characterized by an important emphasis in the organization of educational activities, which focuses on the formation and consolidation in personal and social experience of professional competencies and the basic foundations of the information culture of subjects of pedagogical interaction in the context of the widespread use of information and communication technologies and the transfer of part of educational and cognitive activity to the virtual space of the information and communication environment.

It is advisable to note that the common for the scientific approaches we highlight in under-

standing the phenomenon of digitalization of education is the definition of its process essence and focus on both personality and society. In such an interpretation of the digitalization of the educational sphere, as a complex object of research that has its own phenomenological features, its essential triunity manifests itself. It acts as a process, condition and achieved effectiveness of revolutionary changes in education related to the use of modern information and communication technologies aimed at improving the efficiency of the educational process, the quality of educational services and personal development of subjects in the framework of ensuring continuity at all systemic levels.

The modernization changes carried out within the framework of digitalization in the educational sphere are interconnected with the process of developing and implementing effective training models aimed at integrating innovative technologies into the educational process and, therefore, its technologization. We understand the technological development of education as a qualitative development of the educational system in the context of a significant increase in the role of technologies to effectively ensure the organization and implementation of educational activities, and to solve pedagogical problems. The dynamics of such development, being a qualitative manifestation of the digitalization of the educational sphere, is associated with a number of factors that determine the pace and originality of processes implemented at the systemic levels of education (for example, taking into account the continuity at the levels of general secondary and higher education). It is advisable to include the following factors:

- the status of education as one of the foundations of the knowledge economy;
- significant socio-cultural changes related to the integration of innovative technologies into the daily life of a person and society;
- formation of a social order in the conditions of presentation by the labor market of qualitatively new requirements for the competencies of a future specialist - a participant in high-tech production of the era of the fourth industrial revolution;
- development of practical-oriented theoretical and methodological approaches in substantiation of innovative educational models ensuring interaction of science, education, production

and business in conditions of knowledge economy formation;

- improvement of the legal framework for the implementation of measures that are the content of the digital transformation of the educational sphere;
- development of pedagogical practice and experience in ensuring continuity of educational levels (in the Republic of Belarus and in the post-Soviet space).

Taking into account the theoretical and methodological approaches noted by us in the interpretation of the digitalization of education, as well as the determinants of the processes of technologization of the educational sphere, allows us to consider the essential phenomenological features of the phenomenon we study as system-forming. From the point of view of pedagogical science, it is advisable to include the following:

- ambiguity of interpretation due to complexity and multidimensional manifestations, as well as interdisciplinary study;
- focus on the personal development of a person based on the formed and developed worldview foundations of noosphere thinking, the adoption of higher values, the comprehensive disclosure of the spiritual and moral potential of each person and the whole society as a whole;
- determining influence on social and personal being of both society and person in their relationship with educational sphere;
- provides the knowledge system of the economy in generating the knowledge component and human capital necessary for its growth and development;
- implemented through effective use of results - innovative technologies and high-tech technical solutions;
- involves the person in the processes of digitalization and attracts to the use of their results through the updating of the relevant meta-pramette and professional subject competencies (for example, information competencies based on the knowledge and activity components enshrined in the social experience of the person);
- contributes to the formation and development of a high-quality level formation of the information culture of the subjects of pedagogical interaction, which are provided with opportunities for the implementation of their competencies in the conditions of the information and

communication space and the information and educational environment of the educational institution;

– provides the conditions and tools for the formation of integral technological environments, ecosystems, platforms, technical and technological and didactic potential, as well as the functionality of which creates a friendly environment necessary for the user (technological, instrumental, methodological, documentary, partner, etc.) to solve a whole class of problems;

– reflects the extremely important contradiction between the manifested progressive results and the maturing challenges presented to society and threats of a global nature.

In relation to this characteristic, it is advisable to note the contradiction manifested in the conditions of digitalization of education in the asynchronism of the advanced qualitative development of the technologically advanced information and communication space and the lagging adaptability of the personality in its level formation of functional literacy as the basic component of information culture.

Due to its technical, technological and didactic potential, as well as functionally implemented phenomenological characteristics, digitalization is able to ensure an increase in the quality of educational services provided to users. The use of artificial intelligence platform tools in education provides an opportunity to optimize information resources and perform certain tasks with high speed within the framework of organized educational and cognitive activities (for example, on search, classification and forecasting in the context of working with large amounts of data, analyzing and correcting the generated text on a given topic and on declared issues). At the same time, technologization carried out within the framework of digitalization of education carries significant technogenic risks (for example, the appearance of generated information products with false information and the problem of monitoring its truth by the teacher; deviant educational behavior using high-tech technical solutions). Institutional transformations of modern universities to models 3.0 and 4.0 noted by researchers [3; 4; 8; 10; 11] are an illustration of a qualitative change in the information and educational environment in the higher education system, but the issue of ensuring the continuity of general secondary and higher education in a digitalization environment remains problematic.

The issue of adaptation of subjects of educational activities and pedagogical interaction to dynamic socio-cultural changes seems problematic. Obviously, the revolutionary changes in the information and communication space, on the one hand, are the result of the penetration of innovative technologies into the existence of the individual and society. On the other hand, they condition changes in personality status in the digital environment, from the initiator, actor and subject of changes to conditional object within the framework of the rapid development of artificial intelligence. At the same time, it is advisable to note that the non-powerful technical, technological and didactic potential of digitalization means is the determinant of the negative consequences of technologization, including in the educational sphere. The problem is the ill-conceived decisions made, proposed without taking into account the phenomenological characteristics of digitalization of education. At the point of bifurcation of its development, society and education should be based on a balanced and deep scientific analysis in determining further development. The very consideration of the contradictions we have outlined seems extremely promising in the aspect of continuing research devoted to the study of digitalization processes in the educational sphere. Relevant are not only the socio-philosophical, but also the psychological and pedagogical analysis of the emerging contradictions in the development of modern education in the context of its digitalization, and therefore - the continuation of the scientific discussion in this problematic field of science.

**Conclusion.** Summing up the analysis, we note that within the framework of scientific reflection, the digitalization of education is a complex socio-cultural and pedagogical object of research, which has its own phenomenological features. In its essential triunity, it acts as a process, condition and achieved effectiveness of revolutionary changes in education related to the use of modern information and communication technologies aimed at improving the efficiency of the educational process, the quality of educational services and personal development of subjects in the framework of ensuring continuity at all systemic levels. Thus, this is a phenomenon that has in its content the procedural, determining and qualitative characteristics of a complex techno-and sociocultural phenomenon. The definition and accounting of these characteristics



allows a multidisciplinary analysis of dynamic changes that reflect qualitative changes in the field of education in the context of the formation and development of the knowledge economy.

The phenomenological characteristics of digitalization of the educational sphere highlighted by us, manifested in the main trends in its development in the Republic of Belarus and in the post-Soviet space, are in close dialectical relationship with each other. Their understanding within the framework of the scientific reflection allows not only to assess the very logic of procedural, activity and qualitative development, as well as the evolution of the phenomenon under study, its internal and external causal relationships, but also to more clearly indicate development prospects in the aspect of scientific forecasting, taking into account the existing exacerbation of challenges and threats of a global nature. In our opinion, the relevance of not only socio-philosophical, but also psychological and pedagogical analysis of the emerging contradictions in the development of modern education in the context of its digitalization, and, therefore, the continuation of scientific discussion in this problematic field, is obvious.

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