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DIGITAL TRANSFORMATION OF EDUCATION AND HUMANIZATION OF RELATIONSHIPS IN THE EDUCATIONAL ENVIRONMENT: SOME ASPECTS OF RELATIONSHIP AND MUTUAL INFLUENCE

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Abstract: The modern educational space is permeated with elements of digitalization. Innovation has always been a challenge for the education system, a traditionally conservative cluster of socio-cultural activity. The peculiarity of the digital transformation of modern education is the totality of this process, covering educational and methodological, organizational, and scientific components. Under such conditions, the formation of contradictions in education between scientific and technological and humanities-science dimensions is obvious. Therefore, the purpose of the article is to identify current educational strategies with a clear prediction of trends in the relationship between digitalization and humanization. Two models for the further development of the educational space are proposed - confrontation and interaction at the level: of human-technology. In this context, it is methodologically acceptable to use two scientific-philosophical methodologies: dialectics and synergetic. Consequently, modern education is at a kind of bifurcation point since the coexistence of innovative technologies with traditional humanistic principles is no longer possible in the existing worldview paradigm. It is only a matter of time before a new system of the reciprocal influence of digital technologies on humanistic principles emerges.

Keywords: digitalization of education, human dimensionality, educational innovation, humanism, educational space.

Introduction

Digitalization and humanization are now trends that are defining in the educational sphere. These processes are simultaneously complementary, forming a balance that ensures the sustainable

progress of education as a whole. At the same time, most of the components of these trends are in opposition to each other. Under such conditions, there is a formation of counterbalances, which form the stability and progressiveness of the educational space.

For a long time, the conservatism of education has been dialectically opposed to revolutionary cardinal transformations in this sphere. Humanistic principles have become a kind of stabilizer, which provided the educational space with efficiency while not allowing cardinal transformations to penetrate the educational environment. The history of human civilization has many examples of revolutionary transformations in one of the clusters of socio-cultural space, in particular, scientific and technological revolutions. In such circumstances, the lightning transfer of these principles to the educational system potentially threatened its existence. It should be realized that educational strategies develop according to a specific nature that differs from other spheres. Education is characterized by: traditionality, didacticism, inertia, and consistency. These constants allow us to build a process that ensures the results of the educational process.

The effectiveness of the educational environment is designed to provide long-term strategies and short-term tactical components. Considering the problems of digitalization of education, it should be noted the transition of information and communication technologies from the tactical to the strategic cohort. For a long time, information resources, communication means, and technological innovations served as auxiliary elements providing the learning process or organizational moments of educational structures. Recently, however, digitalization has gradually taken over the niche as an educational strategy. The COVID-19 pandemic was a kind of catalyst that revealed a profound shift in the educational space towards digitalization. The distance learning format, the use of online platforms of both organizational and educational nature, and virtual communication between the subjects of the educational process at different levels - all these factors formed the basis for the new positioning of digitalization in education.

Currently, two key principles at the level of human technology in the educational environment have been actualized: mutual influence is a process that has become inevitable in the educational space and involves the clash of human dimensionality and technologization; interrelation - individual elements indicative of a potential and, in some cases, practically oriented combination of humanistic and technological principles in the educational system.

The issues of the mutual influence of information and communication technologies on human beings in all spheres of social activity are dealt with by scientists and scholars from various fields. There are obvious tendencies to increase the share of technology in the life of modern man in all possible manifestations. The educational sphere is not an exception in this process. More and more often, we observe information oversaturation and technological pressure, which are becoming habitual phenomena. If, in everyday practical life, such manifestations are of different nature and do not form a critical dependence on the latest technologies, then education is quite sensitive in terms of human-measurable risks.

Methods

The problem of digital transformation of education is clearly structured in the rationalistic and empirical methodological arsenals of modern science. The digitalization of education is investigated by the methodological basis inherent in the scientific and technological paradigm. The humanistic-scientific methodology provides the interpretation of the humanistic orientation of the educational system. At the same time, scientific-philosophical methods, in particular dialectical and synergetic ones, are relevant for investigating the relationship between digitalization and humanization.

Literature Review

The question of the mutual influence of digital transformations and humanistic principles in the educational environment began to be raised when information and communication technologies were first introduced in the educational process. In recent years, the number of scientific studies studying the problems of digitalization of education has increased significantly in proportion to the massive integration of ICT into the education system.

The problem of the interaction between humanization and digitalization officially emerged after the publication of the Vienna Manifesto on Digital Humanism (2019). In fact, this declarative document marked the beginning of a new era of interaction between technocentric and human-centric dimensions. The dialectical paradigm was replaced by a synergetic model of the relationship at the level: of human technology. In education, these elements are reflected in the works of Werthner, Prem, Lee and Ghezzi (2022), Messner (2020), and Rašan (2021).

The realities of the implementation of digital technologies in the educational process in modern sociocultural conditions were covered by Sharma (2022), Milan (2020), and Araq (2021).

The social aspects of the interaction between humanization and digitalization in the educational environment are found in Gleason (2021), Herbrechter (2018), Malott (2019), H. Teräs, M. Teräs and J. Suoranta (2022), Xiao (2019).

Concretized the use of digital transformation in the educational space and identified the potential risks of this process Pei and Nie (2018); Harteis (2018); Fisher and Baird (2020), Golz, Graumann and Whybra (2019).

Results

Since the Vienna Manifesto on Digital Humanism (2019), human civilization has legally affirmed the potential of information technology and recognized the role of digitalization in all spheres of social activity. It is noted that digital humanism is characterized by a rather complex and ambiguous relationship between humans and machines. In their research, scholars highlight the social threats that are actualized in the digital age: breach of confidentiality, ethical concerns about artificial intelligence; automation and loss of jobs; current monopolization of the information environment by the INTERNET network.

According to the ideologists of digital humanism, constructive thinking should be an effective tool in the fight against these threats. It is seen in two manifestations: humanistic thinking and digitalized thinking. The main goal of digital humanism is not just to analyze but to have a practical impact on the interaction between technology and human beings. The priority of digitalization should be the introduction of technology in accordance with human needs and values (Werthner et al., 2022).

Currently, education, along with other spheres of social activity, is in actual preparation for the Industrial Revolution 4.0, which will be based on the use of cyber-physical systems for industrial production and social objects (Harteis, 2018). Education, being in a close relationship with science, in a certain way, appears at the forefront of these processes.

Humanness in education is determined by the influence of individual elements on all subjects of this environment. Digital transformation has a direct impact on applicants for education, mentors, and representatives of the administrative-organizational level of educational institutions. Consequently, the new contradiction between the processes of humanization and digitalization becomes an obvious problem that needs to be solved. Some researchers define the new realities of the educational process in the context of technological revolutions as a personal tragedy for teachers (Teräs et al., 2022).

First of all, it is necessary to investigate the nature of the impact of digitalization processes on students, teachers, and administrators of the educational system. At the same time, it is necessary to clearly understand the difference between the use of information and communication technologies in everyday life and the application of the achievements of digitalization directly in the educational space. Recent research raises quite a large layer of problems related to the digital transformation of education. According to the available narrative research (Rašan, 2021), the teaching staff is the most vulnerable link in the processes of digitalization. This is due to my traditional mission of the mentor in the educational process and a certain devaluation of it.

The process of engaging digital technology in a practically oriented plane has demonstrated effectiveness and has gained considerable popularity among faculty. Digitalization really optimizes the work in many ways, making it easier for the teacher. At the same time, in a strategic sense, information and communication technologies are gradually becoming a competitor rather than an assistant to the traditional teaching model. The administration of an educational institution, thanks to new technologies, can use them as an alternative to teaching. The student can use

both the experience of the teacher and the functionality of technology to acquire the necessary knowledge and skills with equal success.

This condition states the formation of a competitive environment in the educational system. This would seem to be a positive thing since this environment demonstrates efficiency in economics, business, or political life. Here, however, humanistic principles act as a stabilizing element.

When considering education as a sociocultural phenomenon, it should be noted that the goal of the educational process is not the traditional acquisition of knowledge and appropriate qualifications. It is through humanistic ideals that education allows one to integrate into social institutions. Therefore, humanism is a fundamental feature of the educational environment, and issues of educational work are assigned a certain part of the educational process along with the educational and scientific clusters.

Thus, humanization from an abstract, not quite understandable aspect acts as a concrete-acting factor ensuring compliance with moral, ethical, legal, and sociocultural components of human dimensionality.

The peculiarity of the digital transformation of education is the point that all the latest technologies should be synchronized with the educational and methodological arsenal or, at the very least, become an ordinary element of this arsenal. In this context, there is an obvious inconsistency since information and communication technologies are essentially programmed to play a dominant role, effectively squeezing out all other sources of information or generators of ideas. Of course, an educational system aimed at fostering critical thinking, one's own position, and other humanistic principles cannot allow ICTs to dominate. Because, in this way, because of the improvement in the format of the educational process, the target component of education as a whole is lost.

Although we identified educational strategies in the introductory part of our exploration as a more appropriate environment for the interplay of humanization and digitalization, it would not be right to bypass the issues of practice-oriented educational environments in which information and communication technologies collide with humanistic principles. The concept of "critical humanizing pedagogy" (Gleason, 2021) has emerged in contemporary scholarly opinion. It is about interaction in the educational space in all its manifestations. The traditional dimension of interaction is communication between mentor and student, which acts as a humanistic constant. With the introduction of the latest technologies, an innovative information and communication aspect is added to the traditional model. In practical terms, communication is a basic component of the organization of the learning process. And in practice, it is provided in the course of interpersonal communication at the teacher-student level. The traditional model implies the introduction to the communicative function of the elements of "live communication", which in addition to the working educational moments, is characterized by the emotional factor, moral aspects, etc. Communication with the help of technology actually levels these elements, leaving the basis of the result of communication - the provision and receipt of educational services. Under such conditions, the human dimension loses its overarching status, as the educational system concentrates solely on achieving its immediate objectives, ignoring the human factor.

Returning to the practice-oriented application of digital resources, we note that their effectiveness is repeatedly confirmed (Fisher & Baird, 2020). Among the innovative learning technologies that demonstrate the highest rates among students, we note the following: augmented reality (AR), virtual reality (VR), mixed reality (MR); artificial intelligence (AI).

The proportion of the use of the latest technology in the learning process is projected to grow. This will create new risks arising from the lack of direct live communication at the teacher-student level. This format potentially threatens the penetration of anti-human ideas and the inability of administrative and curricular filtering of harmful content. Consequently, two clusters of educational activities necessary for the full functioning of the educational space are actualized (see Fig. 1).

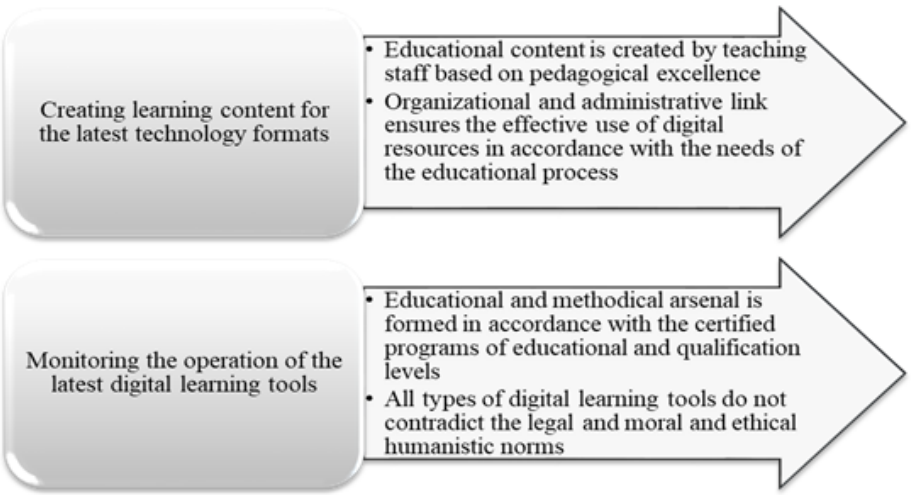

Figure 1. Humanizing the Concepts of Emerging Technologies in Education

Technologization of education leads not only to the use of teaching and learning materials but directly replaces the figure of the teacher in the literal sense. We are talking about the use of artificial intelligence and robotic resources.

> Educational robots are the product of the development of advanced technologies in education, the research of which is promising and epochal. According to their forms and main functions, educational robots can be divided into intelligent robotic assistants, virtual simulation robots, multifunctional robots, and conventional educational robots. Educational robots have the characteristics of flexibility, digitization, repeatability, humanization, and natural interactivity. The application of educational robots is concentrated mainly in the areas of STEM education, language learning, special education, etc. (Pei & Nie, 2018).

Note that the use of artificial intelligence and robots in the educational environment is one of the most controversial issues. This state of affairs leads to a conflict not only on the theoretical and methodological plane but also aggravates the problem of the direct physical replacement of the teacher. However, the key threat, in this case, is not the problem of identifying the subject but the potential dangers that are actualized due to the removal of the person from direct participation in the educational process. The point of controlling the interaction of education applicants with robotic systems is important to avoid potential situations of anti-humanistic nature.

Calls to respond to the transition from conventional to distance learning are growing louder (Araq, 2021). The reason for this is the refocusing on the potential of digitalization and, with it, the crisis of a humanistic nature. It is not a question of considering the balance of positive and negative elements of the digital transformation of education. This is due to the peculiarities of the modern sociocultural space in a period of pandemic realities when digital resources have totally replaced human resources in the educational environment. Consequently, the relevant question concerns the problem of containing the comprehensive pressure of digitalization on the educational process.

The notion of "posthumanist education", which is part of the modern worldview, is being actively discussed (Herbrechter, 2018). The classical interpretation of anthropocentrism assumes an old civilizational model in which digital innovations are created by humans and serve humans. In the post-anthropocentric worldview, the subject-object relation shifts toward technology, depriving humans of exclusivity, exclusivity, and a dominant position in general. Education in this dimension leaves critical and analytical thinking relevant, making it impossible to shift irresponsibly from humanistic principles to anti-humanistic ones.

Discussion

Some contemporary scholars ask the specific question: Is digitalization the dehumanization of

education? Regardless of all the useful, necessary, and irreplaceable technical innovations; regardless of historical, current, and future social upheavals - the basic ideas of the humanization of education remain a constant interdisciplinary tool to confront new challenges, especially individualized and socially responsible, inclusive and integrative elements of learning (Golz, Graumann, & Whybra, 2019).

Let us note the concept of interdisciplinarity, which is quite popular in modern scientific and educational discourse. The processes of interdisciplinarity have developed due to the active introduction of information and communication technologies. Quantitative and qualitative information has made it possible to obtain the necessary knowledge regardless of scientific affiliation. Natural, technical, or humanities sciences became available for comprehensive study and research. Consequently, digitalization has become an essential argument in the formation of modern scientific interdisciplinary discourse, the main feature of which is the possibility to consider any issue simultaneously from the perspectives of humanities, natural sciences, or technology.

The reaction of the educational community to the processes of digitalization has several vectors of practical implementation in organizational and teaching-methodological manifestations creation of a new type of learning content; creative transformation of digital potential; full use of digital resources (Malott, 2019).

All of them have both advantages and disadvantages. Among the advantages are mobility, informativeness, and communication. Disadvantages are associated primarily with the lack of full-fledged control over resources and the lack of an effective system of filters to identify and neutralize harmful or inhumane resources.

Digitalization in the practically oriented dimension has instrumental capabilities (creation of a multifunctional e-campus at the macro level - in the system of global, regional, or national education; or at the micro-level - within an educational institution); modernization (support and encouragement of effective innovations in teaching and learning).

The result of such initiatives could be the construction of a digitalized online ethos with the development of a separate political and ideological education. Such practices have recently been actively implemented in educational institutions in China and other Asian countries (Xiao, 2019).

In this context, another potential threat to the use of digitalization in an educational environment, aggravated on a national or regional dimension, emerges. Under unfavourable sociopolitical circumstances (dictatorships, restrictions on human rights and freedoms), digital resources become a tool for spreading anti-humanistic principles.

Messner (2020) argues that humanity is now at a fork in the truest sense of the word. Artificial intelligence, data goal processing, recognition and identification technologies, predictive algorithms, sensor networks, monitoring of various kinds, and bot activity are all realities that are finding their way into the educational environment as well. However, when all these digital technologies become tools in the hands of authoritarian governments, humanistic principles: human rights, democracy, privacy, freedom, and dignity are threatened. Information technology and communication infrastructure become effective tools in the architecture of manipulation of public consciousness.

At first glance - these problems are general civilizational and relate more to social transformations caused by the introduction of digital technology. However, the role of education in these processes should be noted. The uniqueness of the educational environment is that through education, there is an opportunity to prevent potential threats rather than deal with their destructive consequences. Consequently, in this context, we see the key role of the relationship between humanization and digitalization in the educational space.

The use of digital innovations in the learning process has one positive feature that can outweigh all the negative manifestations of digitalization put together. Information and communication technologies in ordinary perception are practically-consumptive in nature. A person who uses digital technology in everyday life does not think about its content, completely immersed in the format of such a model. A completely different thing is the implementation of digital resources in the educational process. During the learning process, all parties do not just use this or that digital resource but analyze and understand the principles of its functioning (not the technical characteristics, but the ways

of creating and broadcasting the available content). This is how the theoretical and methodological human-centred dimension of digitalization is formed.

Thus, digitalization, being essentially the antagonist of humanization, is one of the key theoretical-methodological and practical-usual regulators of the preservation of humanistic principles. Consequently, the relationship is formed not at the level of direct interaction between these tendencies but by combining them in a purposive context.

Educational technology (EdTech) has become relevant in the context of the current global crisis resulting from the pandemic. Digital transformation is now becoming a global phenomenon and fundamentally changing the educational system. On the theoretical and attitudinal levels, there is a shift from deterministic thinking to solution-based thinking. The transformation of higher education focuses on the creation of a humanistic paradigm built on the principles of human capital theory (Sharma, 2022).

We must realize the need to develop a way out of the crisis phenomena of today's world (the COVID-19 pandemic, which has added full-scale military aggression by a nuclear state). There is now an urgent need to recognize multiple ways of thinking in terms of social relations, diversity, and interdependence (Milan, 2020). The educational space is the most favourable arena for the realization of this multidimensional human dimension.

Conclusion

So, modern education is faced with an axiological crisis that may escalate into an existential one. We are talking about the fact that now the educational space is simply torn by value contradictions. Traditional principles of humanization and innovative processes of digitalization appear as the basis of these contradictions. The study reveals that synergetic models are a promising direction for the further coexistence of these two key trends in the development of educational space. The dialectical format assumes, as a result - the victory of one of the components of the education system, which may pose a threat to this sphere of public activity. The depreciation of humanistic aspects will lead to the moral and legal decline of education. Incomplete use of information and communication technologies in the educational space will lead to its degradation and inability to be an effective cluster in a competitive sociocultural environment.

Consequently, humanization and digitalization are further defined as two fundamental systemic trends in the development of education. The interaction between these components is unquestionable and is taken for granted by the educational community. As for the relationship - there are different points of view, which should be brought to a single denominator in the target dimension. The common goal of digitalization and the humanization of education should be human-measuring principles (see Fig. 2).

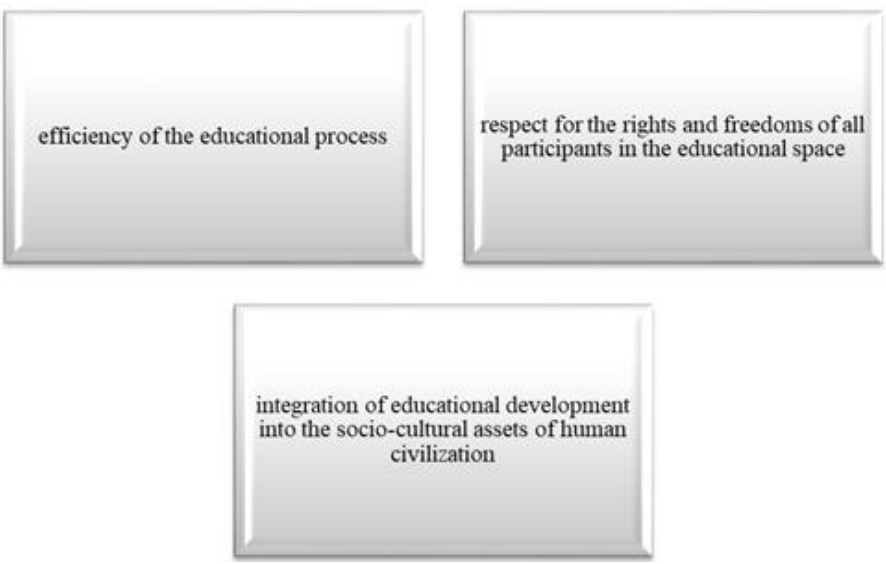

Figure 2. Humanization of education (in the context of the synergy of humanization and digitalization).

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