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Original article

Social, Psychological and Pedagogical Problems of Digital Education in Subject's Development

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Abstract

Introduction. Research problem. Consideration of the problems of digital education (that is, education organized through digital technologies, including artificial intelligence technologies) is necessarily connected with the analysis of not only pedagogical, but also social, psychological processes and effects of digital education, its influence on the formation and development of students and teachers as subjects. Most of these types of transformations should and can be considered within the framework of social and psychological transformations of human relationships and the values and ideas that govern these relationships. The purpose of the study is to analyze the socio-psychological problems of the development of subjects of digital education. The methodological basis of the study is a systematic approach to understanding the problems of modern digital education and its subjects.

Materials and Methods. Theoretical analysis of the problems of the development of digital education and its subjects using the example of issues related to the use of artificial intelligence systems (smart technologies) in education.

Results. The main social problems of digitalization of education: 1) the absence of digital culture as a mass culture of the use of digital technologies; 2) mythologized and politicized use of digital technologies; 3) opacity and ethical violations of the development, application and improvement of digital technologies; 4) lack/small number of competent personnel and systems for their quality training and retraining as a result of a simplified view of the essence of digitalization of education. The main pedagogical problems: 1) unpreparedness, underdevelopment of technological systems for the digitalization of education, the primitiveness of the digitalization technologies used as their inconsistency with the whole and objectives of education as an institution of cultural transmission; 2) unpreparedness of students and teachers to use, develop and improve digital technologies; 3) the destructive consequences of the use of modern digital technologies for education; 4) and for the formation and development of the subjectivity of its participants. Psychological problems of digitalization of education at the modern stage: 1) desubjectivization of educational processes as a result of attempts to "replace" teachers and students with digital devices, 2) imitation and profanation of education, leading to its desacralization and destruction as a system of relations between people and their activities; 3) the increase in socio-psychological inequality and conflicts among subjects of government, mediated by digital technologies; 4) problems of social and psychological security and violence in education.

Discussion and Conclusion. These problems closely interact, and the central primary sources are, undoubtedly, the problems of society, the collapsing social relations of people, their primitivization, mythologization, and commodification.

Keywords: artificial intelligence systems, digital learning, digital learning tools, digital culture, smart education, agency

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Оригинальная статья

Социальные, психологические и педагогические проблемы развития субъектов цифрового образования

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Аннотация

Введение. Актуальность исследования. Современная цифровизация образования на фоне несформированной цифровой культуры и понимания опасностей и проблем цифровизации ведет к десубъективизации образовательных отношений, их развалу, о чем пишут многие современные исследователи, в том числе в контексте результатов цифровизации в период так называемой «пандемии» 2020-2022 годов. Новизна исследования связана с попыткой системного анализа социальных, педагогических и психологических проблем современного цифрового образования. Цель исследования – анализ социально-психологических проблем развития субъектов цифрового образования.

Материалы и методы. Методологическая основа исследования – системный подход к пониманию проблем современного цифрового образования и его субъектов. Методы исследования – теоретический анализ проблем развития цифрового образования и его субъектов на примере вопросов, связанных с использованием смарт-технологий и иных цифровых средств в образовании.

Результаты исследования. Основные социальные проблемы цифровизации образования: 1) отсутствие цифровой культуры как массовой культуры использования цифровых технологий; 2) мифологизированное и политизированное использование цифровых технологий; 3) не-

прозрачность и этические нарушения разработки, применения и совершенствования цифровых технологий; 4) отсутствие/малая численность компетентных кадров и систем их качественной подготовки и переподготовки вследствие упрощенного представления о сущности цифровизации образования. Основные педагогические проблемы: 1) неподготовленность, неразвитость технологических систем к цифровизации образования, примитивность используемых технологий цифровизации, их несоответствие целому и целям образования как института культурной трансмиссии; 2) неготовность студентов и преподавателей использовать, развивать и совершенствовать цифровые технологии; 3) деструктивные последствия использования современных цифровых технологий в образовании; 4) и для формирования и развития субъектности его участников. Психологические проблемы цифровизации образования на современном этапе: 1) десубъективизация образовательных процессов в результате попыток «заменить» учителей и учащихся цифровыми устройствами, 2) имитация и профанация образования, ведущая к его десакрализации и разрушению как системы отношений между людьми и их деятельностью; 3) рост социально-психологического неравенства и конфликтов между субъектами власти, опосредованных цифровыми технологиями; 4) проблемы социальной и психологической безопасности и насилия в образовании.
Обсуждение и заключение. Эти проблемы тесно взаимодействуют, а центральными первоисточниками, несомненно, являются проблемы общества, развал социальных отношений людей, их примитивизация, мифологизация и коммодификация.

Ключевые слова: системы искусственного интеллекта, цифровое обучение, цифровое образование, цифровые средства обучения, цифровая культура, смарт-образование, субъектность

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Introduction

Research problem. Consideration of the problems of digital education (that is, education organized through digital technologies, including artificial intelligence technologies) is necessarily connected with the analysis of not only pedagogical, but also social, psychological processes and effects of digital education, its influence on the formation and development of students and teachers as subjects . Most of these types of transformations should and can be considered within the framework of social and psychological transformations of human relationships and the values and ideas that govern these relationships.

Relevance. Modern digitalization of education against the backdrop of an unformed digital culture and understanding of the dangers and problems of digitalization leads to the desubjectivization of educational relations, their collapse, as many modern researchers write about, including in the context of the results of digitalization during the so-called "pandemic" of 2020-2022.

The novelty of the research is associated with an attempt to systematically analyze the social, pedagogical and psychological problems of modern digital education, with an attempt to integratively comprehend the 1) social, 2) pedagogical and 3) psychological problems of digital education.

Understanding the problems of the development of modern digital education in the context of the use of artificial intelligence systems is an attempt to analyze the prospects, consequences and projects of modern education. The leading aspects or levels of analysis of the problems of introducing artificial intelligence into training and education are: 1) general cultural transformations, including transformations in the practices of educational, labor, family and other human relations; 2) transformations of modern education, arising and intensifying as a result of its digitalization and other changes associated with changes in culture; 3) changes in individual processes and results of training and education, as well as specific subjects of education as a result of the use of artificial intelligence systems[1] [1-6].

Consideration of the problems of digital education (that is, education organized through digital technologies, including artificial intelligence technologies) is necessarily connected with the analysis of all three selected aspects. It should also be associated with understanding the socio-psychological processes and effects of digital education, its impact on the formation and development of students and teachers as subjects. Most of these types of transformations should and can be considered within the framework of socio-psychological changes in an individual's relationship with himself and other people and the values and ideas that regulate these relationships[2] [2-4], [7].

The problem of the subjectivity of smart education reveals a complex of unresolved issues of development, application and improvement of artificial intelligence and other digital technologies in education in other areas of human activity [2-4].

The study proceeds from the assumption that modern smart education is associated with a system of destructive phenomena, the main cause and consequence of which is the lack of a formed digital culture, the orientation of education not on it and the development of subjects of education and their relations, but on goals that are irrelevant to education as an institution of cultural transmission. These goals, being embedded in smart education already at the stage of designing digital technologies and devices, deform the relations and development of subjects. The education of the future will be able to productively and effectively use smart and other digital technologies, subject to the formation and development of a digital culture and rethinking the goals and values, processes and contents of education in the direction of their greater environmental friendliness[3] [4], [8-11].

The purpose of the study is to analyze the social, psychological and educational problems of the development of subjects of education mediated by digital technologies ("digital education"). The objectives of the study are to analyze the 1) social, 2) pedagogical and 3) psychological problems of modern digital education and their correlations.

Methodology

The methodological basis of the study is a systematic approach to understanding the problems of modern digital education and its subjects.

Research method is theoretical analysis of the problems of the development of digital education and its subjects using the example of issues related to the use of artificial intelligence systems (smart technologies) in education. On the example of issues related to the use of artificial intelligence systems ("smart technologies") in education, psychological deformations of the macrosocial and microsocial levels are considered: violations and other transformations of the formation, implementation and development of subjectivity and subjective relations of participants in the educational process, resulting in a different degree application of digital (smart) technologies appropriate and appropriate to the objectives of education.

Results

Digitalization and subjectivity of modern education

Digital education and upbringing, or, more precisely, education using digital technologies, is a way of organizing the educational environment, based on the active use of digital technologies. Digitalization is the process and result of the introduction of modern digital technologies in various areas of life and production.

Digital technologies or digital solutions (digital technology) are technologies for collecting, storing, processing, searching, transmitting and presenting data in electronic form: artificial intelligence (AI) and machine learning; distributed registry technologies (blockchain) and cryptocurrencies; technologies for collecting,

[1] Arpenteva M.R. [The problem of subjectivity in the 21st century: pseudo-subjectivity and the crisis of the subject as traditional and modern problems of human life]. In: Mehrishvili L.L. (ed.). Culture and anticulture. Collection of articles of the X International Scientific and Methodological Conference. Vol. 2. Tyumen: Tyumen Industrial University; 2023. p. 27-36. (In Russ., abstract in Eng.) EDN: QZHMOS; Amin A., Thrift N. Cities: reimagining the urban. Cambridge: Polity Press; 2002. 192 p.; Espinoza Ch. Millennial Integration. Yellow Springs, OH: Antioch University; 2012. 151 p.

[2] McCrindle M. The ABC of XYZ. Sydney: UNSW Press, 2009. p. 202p204; Flanagan M., Booth A. (ed.) Reload: rethinking women + cyberculture. New York: The MIT Press; 2002. 595 p.

[3] Scott C. L. The Futures of Learning. In: ERF Working Papers Series. Paris: UNESCO Education Research and Foresight; 2015. Vol. 1-3. No. 13-15. p. 1-21.

processing, analyzing large amounts of data (big data); augmented and virtual reality, additive and subtractive technologies (AR/VR); chatbots and virtual assistants (botsand virtual assistants); smart city systems; neural networks (artificial neural networks), etc. Currently, only some digital technologies are used in education, including remote (the so-called "open") and "closed", and the use of these technologies is associated with significant costs and complexities accompanying any innovations, including those that the industry calls the "curse of H. Gartner": the earlier and the larger the mistake was made, and the later it was discovered, the higher the cost of correcting it [3], [9].

So, one of the "curses" of modern digitalization has already become digital addiction as a type of technological addiction and many other physiological, psychological, moral and social deformations (M.R. Arpentyeva, J.-V. Boon, A.E. Voiskunskiy, A. O. Gershman, V. Dunkley, J. Kalbitzer, E.E. Karpova, N. Kardaras, M. Spitzer, P. Wybrow). The list of developmental disorders, in addition to digital addiction, affects personal, interpersonal and educational and professional aspects of human functioning and development. Many of them, as in the case of other addictions, are directly related to violations of subjectivity: both as causes and as consequences. This gives rise to the need for an isolated / analytical, comparative and integrative understanding of the processes and contents, the causes and consequences of each of the transformations that arise in the relations of educational subjects as a result of the use of smart and other digital technologies. Usually, personal and individual aspects of the digitalization of education are the focus of psychophysiological and personal-psychological research, educational and professional aspects are the focus of psychological and pedagogical research, and socio-psychological research naturally focuses on the problems of the existence of human interaction, mediated or otherwise related to the use of digital technologies. The subjective measurement of human activity in digital education from a socio-psychological point of view reflects the processes and results of its formation as a subject of education, included in intersubjective interaction with other subjects of various types and levels (through and about digital technologies, devices, etc.): from individuals and their groups to organizations and society.

From the socio-psychological point of view, subjectivity is the ability to get involved in relationships with other (significant) people, to contribute to their development and the development of social situations, becomes an agent of change in their lives and the life of the "outside" world as a whole. The subject as a carrier of educational and professional activity is directly involved with the help of this activity in the transformation / comprehension of the reality surrounding him. To become a subject of educational and professional activity means to master this activity, that is, to become capable and ready for its implementation and creative transformation, to form one's attitude towards it and, through this attitude, to other people and social situations. Subjectivity is inextricably linked with the degree of identification of a person with the world of culture, which forms those "internal conditions through which external causes, influences, etc., always act"[4]. Subjectivity also acts as intersubjectivity, coexistence of people in the world, the ability and desire to build meaningful (referential) relationships with other people.

Self-determination / self-regulation is a condition on the way of coordinating one's and partners' abilities and readiness to solve specific educational, professional and other tasks. It means the orientation of partners to the subjective experience, respect for freedom and recognition of the responsibility of each and all for the life choices they make individually or jointly, the processes and results of cooperation and other forms of activity.

At the same time, subjectivity can also be considered as a way of being a person, the leading property of human subjectivity, aimed at transforming oneself, others, social situations and the world as a whole [12]. Subjectivity (as "agency") - the ability of an individual to be autonomous, independent of other people, their opinions, norms, including distance themselves from the influence of the external environment, as well as to offer this environment their opinions, norms, influence them.

The development of subjectivity is related to the extent to which the conditions surrounding a person, including the conditions of education, and to what extent his internal "conditions" (development motives, values and goals, experience, etc.) contribute to the awareness of oneself as a member of the community, as a carrier of socially significant perceptions and norms: the choice of a teaching and learning strategy, in particular, active or reproductive, "deep" or "superficial", is associated with the level of formation of the idea of oneself as a subject (actor) and a member of the community.

Subjectivity also implies the ability and readiness to distinguish oneself as an actor and co-actor from the process and results of educational and pedagogical activity, the ability and readiness to recognize oneself and another as a subject, a person. In the context of digital education, it is the ability to understand that educational relations develop between people, although, sometimes, with the help of certain technologies, the ability to understand what is being said and done by whom and for what purposes.

Thus, subjectness is a criterion for a person to master culture, to become its subject. Therefore, "digital education" can support subjectivity and develop intersubjective relations when and where it is based on a general and special, "digital" culture. Not a single tool, technology, especially those that claim the status of "organ projections", can develop and develop a person and humanity outside culture as a system of prescriptions and prohibitions, values and goals, including values and goals, prohibitions and prescriptions for the use of technology. Examples of violations in this area are numerous: starting with fears that digital technologies at the "point Ω" - "technological singularity" or "intellectual explosion" (I. Goode) will reach the level of a person (which is expected by 2030), will come out of control and then begin to control a person (which is expected by 2045-2050), and ending with the "over-trust" that some organizations and people already have in the expert competencies of smart devices, actively practicing attempts to use smart technologies in making management decisions communities. St. Hawking and I. Musk noted in connection with this even the possibility of the elimination of man as a species. Sociologists and psychologists note another process - dehumanization or transhumanization of people's relations, loss of individual subjectivity and intersubjectivity by an individual, loss of a person's need and opportunity to become a professional, including as a result of his non-competitiveness in

[4] Sreeraman S. What is Defect Life Cycle or Bug Life Cycle in Software Testing? International Software Testing Qualifications Board, 2012 [Electronic resource]. Available at: https://www.getsoftwareservice.com/defect-life-cycle/ (accessed 17.01.2024).

relation to robots and other smart devices. This process leads to the destruction of man as a subject, as a social being [4], [9].

Subjectivity research in the context of digital education

In research on subjectivity and its development in the context of digital education, several levels can be distinguished:

1) General cultural level. Digitalization is one of the leading trends in social relations and culture in general. Freedom of use, convenience, practicality and interest in digital technologies among a large part of the population, especially students and students, purposeful steps on the part of business and the state, determine the ubiquity of their distribution and qualitative changes in relations in organizations and communities that use digital technologies. Currently, there is already an overabundance of digital devices, starting with smartphones and PCs, in people's lives, the negative consequences of this overabundance, including alienation between people and an increase in passivity (loss of subjectivity) of people, are becoming more and more obvious. Modern researchers note numerous problems that are the result of technological transformations associated with the formation, development and collapse of the "consumer society" in postmodern[5] [13, 14]. This is a society of total simulations and imitations, including simulations of technology and education, man and culture, development and life as such. Simulation has reached the stage at which social relations, and culture, and a person, and his subjectivity are imitated: sociality is becoming more and more "light", connections between people are established and maintained on the basis of ideas about their functionality. According to classical psychoanalysis, these are fictitious ties formed on the basis of fictitious life goals: the absence of human attachment, and responsibility, obligations and rights, dignity and respect, the reduction of social ties to biological and economic ones, a limited "corridor" of tolerance and desacralization. The fragmentation of society, division into ("new") tribes, forms an unstructuredly controlled human anthill[6]. Consumption becomes obligatory and meaningful, and the search for meaning[7] is replaced by imitations, a "one-dimensional" understanding of oneself and the world, the same "one-dimensional", simplified behavior and values mean the loss of the desire and ability to reflect as "critical thinking", and, most importantly, to subjectivity and opposition[8] [15]. Thus, many pupils and students, starting from the earliest stages of education, experience a loss of interest in education, a sense of its value and meaning: the active introduction of the mythologem about "extra knowledge" allegedly imposed by schools and universities and the absence of real restrictions on the use in schools and universities digital devices, support an avalanche of school simulations that demonstrate the reluctance of a significant number of schoolchildren and students to learn and, most dangerously, to develop as people, subjects[9] [3], [9].

2) Digital tools / technologies, like any other technologies, can be used to consolidate these relationships as a new norm and / or to help society get out of this state, including through the organization of intersubjective management: reflected models of evergetics by W. Wittich, "direct" or "deep" democracy by A. Mindel, "second democracy" by A. Adler, etc. Acting as actors, people, including with the help of poly-agent and other artificial intelligence technologies, can restore, realize the state and quality of subjectivity / intersubjectivity. Modern cybernetics of the third and fourth levels comprehends precisely these processes: poly-subject (poly-agent) procedures for managing communities. Another option for restoring subjectivity, resubjectivization, may be "total refusal" as a real opposition to all-pervading control, desubjectivization. However, as experiments at the school of V. Wittich showed, even students are hardly included in the intersubjective educational process [4].

3) The level of organization of education. Education is one of the areas in which digitalization processes are most intensive and, at the same time, contradictory. Education declares the time and place of replacing human interaction with its "digital counterparts": those that imitate communication and replace it with "contact verification" and "data verification"[10].

The future of learning correlates with a radical transformation of pedagogical models, the content and methods of engagement and education, with the transformation of the processes and results of learning (kind of learning) and teaching (kind of teaching)[11]. At the same time, the issues of becoming a person, partner and professional in the context of these changes are considered declaratively. Many programs only provoke the loss of education's value (desacralization of education and culture), scholasticism among students and pseudo-professionalism / deprofessionalization among teachers, leading to states of "social infantilism", and the loss of subjective manifestations. The overall emasculation of the lists of subject competencies strongly recommended (as standards) for the formation and development of subject competencies also contributes to this process, while situational knowledge and competencies in these declarations of "meta-subject", "continuous education", etc. are placed above "permanent" knowledge and skills [16]. The consequence of this is, according to our preliminary surveys in Russia, Kazakhstan, Germany, that already among the parents we interviewed, and not only children and those who care about the "optimization" of education, one can meet with the opinion that education is unnecessary, that it is useless and destructive, and should be minimized (for example, to the first four grades of elementary school): in the age of smart technologies, up to 20% (out of 360

[5] Slobodchikov V.I., Isaev E.I. *Osnovy psikhologicheskoi antropologii. Psikhologiya cheloveka. Vvedenie v psikhologiyu sub"ektivnosti* [Fundamentals of psychological anthropology. Human psychology. Introduction to the psychology of subjectivity]. Study guide for universities. Moscow: Izd-vo "Shkola-Press"; 1995. 384 p. (In Russ.)

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[7] Frankl V.E., Kushner H. S., Winslade W.J. Man's Search for Meaning. Beacon Press; 2006. 188 p.

[8] Sokolova O.V. *Tipologija diskursov aktivnogo vozdejstvija: pojeticheskij avangard, reklama i PR* [Active Effect Discourses: Poetic Avant-Garde, Advertising and PR]. 2nd ed. Moscow: Gnozis; 2014. 304 p. (In Russ.) EDN: XXLSSL

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[10] Ibid.

[11] Ibid.

respondents) of parents and up to 45% (out of 420 respondents) of children, adolescents and young people, especially in Russia, are psychologically and socially ready to give up themselves and deprive other people of a quality education. At the same time, up to 80% (169 out of 210 respondents) of Russian university students believe that education prevents them from realizing and actualizing themselves: the concepts of (self)realization and self-actualization are deformed and emasculated to the point of success in achieving a state of economic security, career growth and bodily pleasures / comfort . Education is not only desacralized, but also loses its meaning and content. Against this background, subject teachers seem unnecessary, and competencies is massively available: it remains to be seen, competencies can be "embedded" in any person through certain biological and digital technologies (such as "chip"), when teachers will be replaced by "artificial intelligence" or its technological counterparts.

Desubjectivization as a result of digital education and its main problems

Several dangers can be identified here. The first is that the human intellect will be reduced to the intellect of a "machine". The second, more urgent, danger is the destruction of the human intellect and consciousness as such: its rudimentaryization and withering away. This process has already been documented by studies of the consequences of "digital addiction": dementia similar to senile ones appears in many gamers and "ordinary" schoolchildren and students who spend a lot of time on computers and gadgets[12]. The prerequisite and consequence of the latter can be the rudimentaryization of education: the reduction of its "minimum standard" to a system of narrow, specific competencies to varying degrees, allowing a person for a certain time in a particular society (space) to perform the functions of servicing: 1) analog, digital and other devices ("competitive specialists"), 2) other people ("robot-resistant specialists"). Such education reinforces and enhances the destruction of its subjectivity [1-3], [6]. An intermediate option is the idea of serving the needs and desires of a person with a variety of digital and other devices controlled by artificial intelligence systems that can replace his own intellectual efforts: here the question of learning as the appropriation of knowledge and skills is removed. This process is actively progressing due to the substitution of concepts, therefore, although we use the term "digital education", we believe it is important to clarify what we mean by it is the education and upbringing of children, adolescents, youths and adults using digital technologies [3, 4].

In the context of digital education, there is also an increasing dialogue about "global" education. Initially, the problem of global education was similar to the problem of additional education in Russia/ USSR. But then there was an expansion of this concept, approximately as it happened in the modern school of Russia, although on a smaller scale in relation to education in parish schools: it began to be equated with secondary education. Without discussing the specifics of higher spiritual education, the training of specialists in the field of religious studies and the clergy, we note that such a shift gave rise to several effects, including the effect of impoverishment and simplification of school and university programs that are so meaningfully and formally simplified in our country. It gave rise to massive cases of profanation of teaching activity and its replacement by "independent" one. Similar problems can be seen in the framework of "global" education [1], [9], [17, 18].

3) The level of education technology. The problem of digital technologies in education and, in particular, the problem of artificial intelligence (artificial intelligence) or the problem of opportunities, limitations, methods and technologies / methods, processes and results, conditions and consequences of its application for learning purposes (starting with the organization of training, its implementation and ending with the assessment of learning outcomes, starting with the selection of learning content and ending with the participation of artificial intelligence in the choice and correction of the form of educational interaction between a teacher and a student) are one of the most complex and interesting problems of modern education. It can be expected that in the coming years, artificial intelligence will continue to be introduced in such a way as to, if possible, slow down and block the development of the student. Much attention is now being paid to "cloud technologies" and "big data" technologies, their fusion with the processes of monitoring and managing communities, including within the framework of the so-called "digital concentration camps" system, tested in the education and labor systems of Japan, China, other countries, resorting to rating systems for assessing various aspects of educational and labor activity.

In recent decades, this issue has been little studied, the modern "spiral of silence" associated with this problem is associated with another semantic substitution: total control is being promoted under the name of "smart technologies" using the "care discourse" traditional for the consumer society [3].

The discourse of "care" is also clear in the descriptions of digital education [1], [9], [17, 18]:

- There is a lack of reference to the time and space of learning: students have constant access to educational materials, they study when they have the opportunity, and not only when a webinar / video call is announced, etc. Due to this, "adequate timing" is potentially possible, which involves taking into account the wishes of students to the educational organization and the organization of a specific learning situation, taking into account the laws of cognitive and other activity, etc. Here the possibility of an individual pace of mastering the material is set: each student chooses his own mode of mastering the material. The only problem is that many students and trainees do not find the opportunity and desire to get acquainted with the educational material, to study it, outside the supervision of parents, mentors, and teachers. For the most part, the pupils and students we interviewed showed clear signs of scholasticism: up to 75% of schoolchildren and up to 85% of students, even those who complained about the lack of quality education and the inattention of teachers, did not seek to study the materials recommended to them without active motivation and control from outside.
- Pragmatic or practical orientation of digital learning: it widely uses case studies, practical tasks. Knowledge and skills are necessarily and repeatedly practiced in practice. In addition, in the course of practical exercises, the student receives non-delayed, lively and

[12] Panarin S., et al. *Ot veka bronzovogo do veka cifrovogo: fenomen migracii vo vremeni* [Migration Throughout Times: From the Bronze Age to the Century of the Digital]. Barnaul: Altai State University; 2018. 436 p. (In Russ.) EDN: FYLODD

constructive, addressed personally to him, specific feedback. In the absence of such a connection or its depersonalization, delay, digital learning is ineffective and unproductive. In addition, the richness of feedback when performing practical tasks in a "digital format" implies a de facto impoverishment of those in the forced self-acquaintance with the theoretical foundations of professional knowledge and skills. If the student does not set the task of theoretical understanding (basis) of these competencies, then there is a high probability that they will not be studied at all. Even if the schoolchildren and students we interviewed accepted the "recommendations" of teachers, they usually sought to "catch their general essence", as a result, not turning to either text or digital resources. The passive-consumer attitude was also manifested in their own "surfer" activity on the Internet and other digital resources: gliding over the surface of the knowledge and skills offered by them, they implemented what is "surface learning" in its most simplified form. Statements of ignorance did not lead to a search for knowledge: having fixed a gap, the students moved on, not even trying to fill in what clearly marked their practical inability to act.

- The need for high motivation, personal interest is often noted: in training involving the use of digital devices, there is no place for casual listeners. All students (ideally) are people who are interested in obtaining a worthy, practically effective result, otherwise learning is impossible (or acts as a profanity, a simulation). Massive online courses (MOOCs) and many other types of "digital learning" are therefore controversial in terms of effectiveness. The motivation of those who create programs and systems like MOOCs is often purely economic, as well as the motivation of those who are now participating in them: the schoolchildren and students we interviewed (about 65% of the sample as a whole, up to 85% in Russia) expressed their readiness to participate in MOOCs, etc. only when and where it was necessary for the sake of submitting a report or offset. Since in Russia neither secondary nor higher education, according to international studies, is effective social lifts, the motivation to participate in them is extremely low. According to some Russian experts, for example, V.V. Spasennikov and M.R. Arpentieva, MOOCs and other modes of digital learning have a particularly negative impact on the motivation of education[13].

- Technical convenience of the learning smart system. The use of learning smart systems is a promising and very ergonomic means of learning, but it is made by people, developers of methods or training programs. The creation of such a system requires considerable effort in the analysis and adherence to the principles of ergodesign. It also involves multi-format learning, in which the student has the right to choose one of several formats / modes of presenting information. This point is also related to the high cost of digital education: high-quality digital education is a very difficult product to develop, so its use for the purposes of "savings" and "optimization" most often means that education in such a situation is not the goal at all. This is especially true for smart technologies. Smart technologies in education or, as it is not accurately called, "smart education" is one of the last steps in the digitalization of modern education. Turning to them means the readiness and ability of producers and buyers of "digital educational services" to make significant expenses. If the task is to save money, then training using digital technologies and devices is not economically profitable. As the practice of teaching children, adolescents, and youth in 2020-2021 in Russia, Kazakhstan, and, to a lesser extent, in Germany, has clearly shown, despite the oversaturation of the daily life of modern people with digital technologies, access to them by different people, in different countries and regions, is different in different periods: not all pupils and students, as well as not all teachers and teachers have access to the most modern, high-tech solutions, which increases the digital divide due to the fact that modern education includes interaction to varying degrees prone to communication, mediated these technologies, generations of digital tourists and digital natives (X, Y, Z) [7]. In addition, not all children, adolescents, young people and adults respond psychologically adequately to education mediated by digital devices, and especially its problems, paradoxes and failures. In addition to the technical imperfections of digital devices and limited access to them by a number of factors, including status-economic ones, the main problem is the preparation of methodological materials for digital education: the "urgent" method of preparing such materials in the face of "pandemics" and other crisis situations does not contribute to their quality, although it implements the general goals of "education for the elite." Educational inequality is one of the modern scourges of education in Russia and many countries of the former USSR.

The list of problems of such training can be continued. One of the problems is the destruction or blockade of the development of "emotional intelligence" of a person: those who abuse contact with digital devices and programs intensively degrade in terms of the ability to (co) experience, in some cases, alienation and (sometimes terminal) aggression of students and students with symptoms of digital addiction escalates into acts of violence[14]. Therefore, in education that uses digital technologies, a culture of their application is needed. The culture of digital education also includes a culture of interaction and use of digital intelligence and other digital technologies in education. In the meantime, even teachers, as well as the students themselves (who do not have special training in the field of digital technologies, programming, etc.) note that their knowledge and skills in the field of interaction with digital technologies are most often limited to everyday household operations. Collaborating with a robot in the process of education seems quite attractive to the respondents, but many people obviously lack the readiness and ability for productive and effective interaction: not only the value, but also the actual knowledge aspects of competence (culture) have not been formed, allowing you to feel like a subject, and not object (which was noted by 95% of teachers and 70% of students). Unfortunately, outside of a reflective discussion that helps to assess the real state of these skills, knowledge and attitudes, students most often consider themselves to be "sufficiently" competent in digital technologies.

The main social problems of digitalization of education: 1) the

[13] Arpenteva M.R. [The problem of subjectivity in the 21st century: pseudo-subjectivity and the crisis of the subject as traditional and modern problems of human life]. In: Mehrishvili L.L. (ed.). Culture and anticulture. Collection of articles of the X International Scientific and Methodological Conference. Vol. 2. Tyumen: Tyumen Industrial University; 2023. p. 27-36. (In Russ., abstract in Eng.) EDN: QZHMOS

[14] Shapovalova A. *Gejmery-ubijcy. Kak igromany raspravljajutsja s ljud'mi v reale* [Killer Gamers: How Gamers Kill People in Real Life]. *Life. Ru.* 19.05.2018. [Electronic resource]. Available at: https://life.ru/p/1118223 (accessed 17.01.2024). (In Russ.)

absence of digital culture as a mass culture of the use of digital technologies; 2) mythologized and politicized use of digital technologies; 3) opacity and ethical violations of the development, application and improvement of digital technologies; 4) lack/small number of competent personnel and systems for their quality training and retraining as a result of a simplified view of the essence of digitalization of education.

The main pedagogical problems: 1) unpreparedness, underdevelopment of technological systems for the digitalization of education, the primitiveness of the digitalization technologies used as their inconsistency with the whole and objectives of education as an institution of cultural transmission; 2) unpreparedness of students and teachers to use, develop and improve digital technologies; 3) the destructive consequences of the use of modern digital technologies for education; 4) and for the formation and development of the subjectivity of its participants.

Psychological problems of digitalization of education at the modern stage: 1) desubjectivization of educational processes as a result of attempts to "replace" teachers and students with digital devices, 2) imitation and profanation of education, leading to its desacralization and destruction as a system of relations between people and their activities; 3) the increase in socio-psychological inequality and conflicts among subjects of government, mediated by digital technologies; 4) problems of social and psychological security and violence in education.

These problems closely interact, and the central primary sources are, undoubtedly, the problems of society, the collapsing social relations of people, their primitivization, mythologization, and commodification.

Education as intersubjective interaction and the future of digitalization

Much in the success of smart education is determined by the passion and interest of specific teachers and developers of artificial intelligence systems, their goals and values. Thus, the teachers we interviewed generally do not consider educational digital and smart technologies necessary (about 70% of the sample). In Russia, up to 95% of teachers, even those who have some interest in digital education (about 40%), nevertheless note that the introduction of these technologies is shifted to the shoulders of teachers and lecturers, who are most often not interested in them: where technology and the device is used to "replace" the teacher, the teacher will never be interested in using it, improving it, etc. A teacher can be interested in smart technologies only where and when they are used to improve his dialogue with the student. Therefore, traditional pedagogy and "dying" (according to the statements of P. Luksha, Dm. Peskov, T. Eagleton, M. Strong, etc.) education are trying to preserve their supposedly outdated, according to these and some other severely criticized models and programs / foresights [3, 4], the idea of education. This is the idea of education as the interaction of subjects, in some way and sometimes mediated by analog, digital and other technologies, but not reducible to them. Therefore, in the future, we can expect a progressive personalization of education, an increase in attention to a particular student, including through the qualitative and quantitative development of the pedagogical support provided to him. The "death" of traditional schools and universities is associated with attempts to maintain social stratification and the established status quo (separation of the elite, the "elite" and the rest), without challenging it even in the name of justice, the well-being of the individual and the community, in the name of traditional values or their creative rethinking . But as institutions of culture, traditional secondary and higher schools work not only and not so much for the sake of the status quo, but for the development of the individual and the community. Culture will be fully reproduced and developed within the framework of the education system only on condition that the person who is its bearer and successor, from the teacher to the student, will be guaranteed his dignity, the opportunity to reflect human values, including those that are embedded in the work of smart devices.

In general, smart technologies in education make serious demands on the culture and competence of teachers and students, their use is most justified at the highest levels of education. In the case of simulations and in the absence of a culture of their use, artificial intelligence technologies are capable of deforming a person's relationship with himself and the world, leading to desubjectivization. This happens, as can be seen from numerous modern studies, through the desacralization or destruction of values, including the values of education and culture, and, as a result, the loss of subjectivity by a person [2, 3], [17]. As a result of the desubjectivization of education, such violations as scholasticism and psychological burnout among students, simulations and deformations of professional activity (pseudoprofessionalism) among teachers, psychopathization and sociopathization of subjects of education, as well as bullying, ressentiment and other manifestations of deformed relationships and their consequences in the form matetogeny and pediogeny (somatic, psychological and spiritual disease states resulting from deformations of educational relations). Discussions on this issue are becoming more active, including as a result of the escalation and normalization of educational violence and other deformations of relations in education: the phenomenon of "columbine" in 2018-2021 repeatedly attracted the mass attention of Russians, in 2002-2009 in Germany, however, the tragedies of this type in Russia and almost all over the world, especially in the United States, have been described at least since 1999 and even earlier [19]. In Kazakhstan, where a security system similar to China is being introduced in education, the situation is relatively favorable so far, but as the experience of the United States shows, the more tightly organized and militarized, including with the use of smart technologies, the security of schools and universities, the more violence in country is happening. Despite this, even now there are fan clubs, Columbine communities. In the threshold model of cases of "columbine" (massacres, for example, school shooting), the first events of violence are considered as the starting points of "a slow, constantly evolving rebellion, in which the action of each new participant makes sense as a reaction to the actions of predecessors and is combined with them"[15]. This combination is a clear indication of the presence of structured management of this process to a different extent. Violence in schools and universities is the result of alienation and social exclusion of people, their desubjectivization as a result of harassment, intimida-

[15] Gladwell M. How School Shootings Spread // The New Yorker: magazine. 2015. Condé Nast, 2015-10-12 [Electronic resource]. Available at: https://newyorker.tumblr.com/post/131119177511/how-school-shootings-spread-an-increasingly (accessed 17.01.2024).

tion and humiliation. This is an attempt by "gatherers of injustices" (M. Alvin's term) to restore their inner confidence, to respond to grievances that arise in an atmosphere devoid of real human mutual understanding, subjectivity, including in such a way as to "have fun" and achieve thrills (spree or thrill killing) and commit suicide and murder of other people to stop violence and other "injustices" [19]. Digital technologies can be successfully used to strengthen this protest, provoke and stabilize it, which is confirmed by scientists and other analysts[16]. The possibilities of using information technologies in memetic engineering (manipulation of meanings) and "conscientious" (that is, aimed at defeating and destroying certain forms and structures of consciousness, as well as some modes of its functioning) weapons, in modern information wars with their "hybrid" threats (hybrid threats), have been repeatedly discussed by researchers of these and other phenomena of mass violence [4], [20, 21]. All of them, one way or another, discuss issues related to the processes of desubjectivization of a person and society.

As a result, modern smart education is associated with a number of negative aspects associated with the low level of formation of the digital culture of education as an institution for the transfer of cultural experience. Modern smart technologies, including in education, most often contain goals that deform the relationship of people as subjects, including minimizing their own efforts, and hence the will and competence in the search and processing of information about themselves and the world. The opacity of the processes and results of the work of many digital and, especially, smart technologies, especially in the context of their interaction with students and students, leads to the mythologization and desubjectivization of education. In addition to it, even the multi-agency nature of modern technological developments, which makes it possible to organize the space and time of a "machine" dialogue similar to the dialogue of people, does not solve the problems associated with the fact that inference algorithms, including within the framework of traditional and modern "(cloud") and other procedures are not the only correct and the only possible ones. Neither are also often "ecological" in relation to the consciousness and being of a person. The ideology of smart education, inherited from the ideology of smart systems as a whole, orients schoolchildren and students not so much towards their own development, creative search, dialogue and consensus search, but rather towards consumption, comfort and the search for some "super solutions", the discussion about which is seems to be meaningless: a smart device is given the status of an "infallible expert", and sometimes the function of making decisions about the educational process, etc. But behind the decisions and conclusions of devices there are always people, subjects, broadcasting their ideology and model of the world with the help of these devices [4], [22, 23].

Therefore, a truly effective (productive and effective) smart education requires the formation and development of subjectivity as a digital culture of developers, organizers and users of smart technologies, understanding the place of smart technologies in education at different levels and types, as well as increasing transparency / understandability and other characteristics of processes and the results of their work. Education should encourage the development of a person as a whole: the formation of an individual as a person, partner and professional and improvement in these areas [2, 3], [22, 23]. It is already obvious that modern smart education is within its power, outside of other forms of education and upbringing, there is not much here, a realistic assessment of the possibilities of smart education and the digitalization of education in general is an urgent need for modern theory and practice of pedagogy [4], [24-26].

Conclusion

Main provisions of the study. Modern smart education is associated with a system of destructive phenomena, the main cause and consequence of which is the lack of a formed digital culture, the orientation of education not towards the development of subjects of education and their relations, but towards goals that are irrelevant to education as an institution for the transfer of cultural experience. These goals, being embedded in smart education already at the stage of designing digital technologies and devices, deform the relations and development of subjects. The education of the future will be able to productively and effectively use smart and other digital technologies, provided that a digital culture is formed and developed and the goals and values, processes and contents of education are rethought in the direction of their greater environmental friendliness.

So far, the requirement of environmental friendliness is not met. "Digital education" of our time is often considered as a kind of independent sphere of education, its "innovative type". But it is correct to talk about digital technologies and means not so much of education as of learning. Education can be implemented in the context of digital technologies and means, mainly in relation to the tasks of establishing and improving a general and individual digital culture - a culture of using digital tools and learning technologies in classroom and non-classroom activities, in independent or joint learning activities. As for artificial intelligence systems, the illusion of the possibility of using these systems for broader purposes, including the goals of education and development of a person as a subject of educational and professional activity, can be created and maintained here. However, artificial intelligence is not a subject of education; it broadcasts the goals, values and behaviors that are offered to it by customers and developers. In the future, the use of digital technologies in education can become an important way to improve the quality of education and upbringing: if there are well-developed, developing teaching and upbringing methods, if there is appropriate methodological support, as well as other components of the culture of using digital technologies. But it can also become a way of reducing the quality of education and blocking the development of a person as a subject: in the state and with the goals for which it is offered today.

The main social problems of digitalization of education: 1) the absence of digital culture as a mass culture of the use of digital technologies; 2) mythologized and politicized use of digital technologies; 3) opacity and ethical violations of the development, application and improvement of digital technologies; 4) lack/small number of competent personnel and systems for their quality training and retraining as a result of a simplified view of the essence of digitalization of education.

[16] Bezmaternyh A.N. *Psihologicheskoe protivostojanie memeticheskoj inzhenerii ispol'zuemoj v destruktivnyh celjah* [Psychological Confrontation with Memetic Engineering Used for Destructive Purposes]. In: National Security and Youth Policy: Cybersocialization and Value Transformation in a VUCA World. Chelyabinsk: South Ural State humanitarian and pedagogical university; 2021. p. 414-418. (In Russ.) EDN: VMPLAU

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Prospects. The prospects of the study are related to the analysis of social, educational and psychological conditions and situations of the effectiveness of training and education using various digital technologies. At present, it can be stated that the central points of productive and effective education, actively using digital technologies and allowing to develop the subjectivity of its participants, are:

1) the formation and development of digital culture - a system of prohibitions and prescriptions for the use of various digital technologies and devices in education and other areas of life, familiarizing all subjects of education with this culture, including students, teachers, heads of educational institutions;

2) the focus of education on the formation and development of a person as a subject: the development of his abilities and desire for creativity and self-actualization, as well as self-realization in society, the development of responsibility and independence (freedom), the development of readiness and ability to be included and build meaningful, real relationships with others people, to cooperate with them and help them, the desire to develop as a professional, contributing to the development of the community.

3) A separate point is the rethinking of the role of teachers, the "return" of the teacher to educational interaction: even within the framework of smart learning, the role of the teacher cannot be reduced to facilitation, dispatching and other additional functions, to which she often tries to reduce when it comes to digital education. Education is the interaction of people that can be mediated by technology, but cannot be replaced by it.

4) The concept of the subjectivity of smart education and education in general is closely related to the idea of the importance of protecting the dignity of a person (teacher, student) in educational relations. Such protection helps to remove many issues related to negative experiences by students and other subjects of injustice, isolation, incompetence, etc., to harmonize relations in education.

Since artificial intelligence itself is not a subject of education, insofar as it broadcasts the goals, values and behaviors that are offered to it by customers and developers. These goals can serve both the development of subjectivity and the desubjectivization of participants and stakeholders in education. Therefore, the analysis of existing technologies, programs, etc. is very important. as a reflection of the values and goals of certain developers and customers, the correlation of these goals with the goals of education in general and the goals of specific students.

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