Realization of the Right to Education in the Context of Information and Digital Reality and the Artificial Intelligence Development in the Arctic Region of Russia

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Abstract: The article is devoted to the study of the problems of the artificial intelligence technologies use in the realization of the right to education in the Arctic region of Russia in the information and digital reality conditions. The Arctic exploration is recognized as one of the priorities of the State policy of Russia. Its goal is to accelerate the country economic growth, improve the quality of life and develop science. These processes are inextricably linked to the process improvement and the education quality for children in the Arctic, the key aspect of which is the indigenous peoples educational traditions and modern information, and other technologies combination. The purpose of the study is to analyze the prospects and risks of testing artificial intelligence systems in the education field in a special Arctic region. To assess the digital inequality presence, the traditions influence and other living and learning conditions of the Northern indigenous peoples on the technologies development in the education field. To achieve this goal, various general scientific and private scientific methods are used in the work, the study is carried out in accordance with the systematic approach principles, dialectical interdependence, behaviorism and political hermeneutics. The research theoretical and methodological basis is the synthesis of the general theory of security and modern theories of the social phenomena analysis.

1 INTRODUCTION

The Russian State large-scale plans for the introduction and use of digital technologies and artificial intelligence systems in all spheres of society objectively actualize the need for understanding, scientific justification and adequate legal regulation of these processes, including in regions with special climatic conditions and indigenous peoples traditions.

Artificial intelligence technologies and systems are being purposefully introduced into all society and the State activity spheres, and their influence is becoming more and more noticeable in the human rights implementation, including the basic social rights guaranteed by the Constitution of the Russian Federation.

In the information society context and the artificial intelligence technologies introduction, not only the realization of basic human rights is transformed, but also their established content is changing, new powers are emerging or existing "digital" specifics are being supplemented.

This study focuses on the constitutional right to education implementation analysis in the information and digital reality conditions and the artificial intelligence technologies development in one of the harsh Russian regions – the Arctic.

The Arctic exploration is recognized as one of the priorities of the State policy of Russia. Its goal is to accelerate the country economic growth, improve the quality of life and develop science. These processes are inextricably linked to the process improvement and the education quality for children in the Arctic, the key aspect of which is the indigenous peoples educational traditions and modern information, and other technologies combination.

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The Arctic peoples have a long tradition of school education, which was perceived differently in different periods of the Soviet State. The first schools in the Far North appeared in the 1920s. Enthusiastic teachers came to the reindeer herders, hunters, fishermen camps and taught children to read and write, simultaneously convincing their parents that they should be sent to a stationary school. Parents had the right to choose the form of schooling for their children. This continued until the mid-1950s, when the USSR introduced the compulsory seven-year education, which led to the creation of boarding schools in the Arctic regions, where a child was required to study throughout the school year. Such radical imposed educational measures have proved ineffective and, moreover, detrimental for children education and the small indigenous peoples traditional crafts skills maintenance.

It is necessary to recognize that globalization and the information society development are inevitable, and it is important in these conditions to ensure a balance of public interests in the modern educational technologies introduction and the indigenous peoples traditions and culture preservation.

2 RESEARCH METHODOLOGY

The research methodological basis is the dialectical-materialistic method, as well as the most important general methodological principles and social reality cognition methods. The paper analyzes the problems of implementing the right to education in the information and digital reality context and the artificial intelligence development in modern Russia. The artificial intelligence concept is analyzed in order to form the research conceptual and methodological basis.

The use of systematic and structural-functional methods allowed us to consider the trends and prospects for the constitutional right to education implementation in the Arctic region of Russia in the context of information and digital reality and the use of artificial intelligence in the educational process.

The work is carried out in accordance with the systematic approach principles, dialectical interdependence, behaviorism and political hermeneutics. The research theoretical and methodological basis is the synthesis of the general theory of security and modern theories of the social phenomena analysis.

To solve the problem set in the study, a set of complementary scientific methods was used, such as: system and socio-cultural analysis; structural and functional method; documents and sources analysis; interdisciplinary analysis.

The method definition and the research grounds systematic formation allowed us to build the structure and logic of the work in such a way that the obtained theoretical results have a deductive character.

3 RESEARCH RESULTS

Currently, there is no special legislative regulation in the Russian Federation that takes into account the artificial intelligence technologies usage specifics in the education field.

In this situation, a conceptual dilemma arises. Is it appropriate to advance legislative regulation on the mandatory use of artificial intelligence technologies in the educational process, or should the gradual use of modern information technologies be flexible, depending on the economic, resource, national and other features and capabilities of the educational organization and other educational process subjects?

It is worth noting that in the Concept of the Development of relations regulation in the artificial intelligence and robotics technologies field until 2024, the first task is to create the new public relations legal regulation foundations that are formed in connection with the use of artificial intelligence and robotics systems, which are mainly of a stimulating nature. Based on this, it can be concluded that the Russian State is focused on the creation of legal regulators of a "soft imperative" nature, which create conditions and motivate the legal relations subjects to use artificial intelligence technologies.

At the same time, when defining the priority industry directions of regulation of the artificial intelligence usage in the Concept, the education sphere is unreasonably ignored. The Concept adopted until 2024 does not actually imply the development of educational legislation taking into account artificial intelligence technologies in this area in the next few years. It is in the education field that it is planned to apply a flexible step-by-step artificial intelligence introduction version at the discretion of the educational organization itself, using a risk-based approach based on the potential harm size assessment and the need to take measures to minimize the corresponding risks.

The normative legal act specifying the constitutional right to education implementation is the Federal Law No. 273-FZ dated December 29, 2012 "On Education in the Russian Federation". A textual and substantive analysis of this law has shown that to date it does not use the terms "artificial

intelligence technologies", "artificial intelligence systems" and other phrases formed with the "artificial intelligence" phrase. The article establishes the concepts and the procedure for implementing educational programs using e-learning and distance learning technologies.

Thus, the State policy in the education field allows the use of such innovative forms of educational activities as e-learning and distance learning technologies. At the same time, e-learning is understood as the organization of educational activities with the use of information contained in databases and used in the educational programs implementation, various information and telecommunications networks that ensure the information transmission over communication lines, students and teachers interaction.

Distance learning technologies are understood as educational technologies implemented mainly with the use of information and telecommunications networks in the indirect (at a distance) students and teaching staff interaction. Simultaneously with the use of e-learning and distance learning technologies, the educational organization undertakes to create an electronic information and educational environment that provides certain conditions for high-quality and barrier-free development of the educational program.

The first practices of implementing e-learning in the Russian Federation are already available. For example, in Moscow, MES (the Moscow Electronic School) is actively used. Most educational organizations, under the constraints caused by the pandemic in 2020, were forced to implement e-learning and distance learning at an accelerated pace. However, it is important to understand that this is not yet AI, but the first attempt to automate the educational process. First, it is necessary to provide each student with a personal digital device, and only after that "it is possible to obtain a digital educational footprint and a basic technological foundation for building individual educational trajectories using artificial intelligence".

Over the past few decades, the Russian Federation has made attempts to adapt the Russian educational system to the conditions of nomadic life of the Far North inhabitants. This topic has become particularly relevant in connection with the adoption of the Strategy for the Development of the Arctic Zone of the Russian Federation and Ensuring National Security for the Period up to 2035, approved by Presidential Decree No. 645 dated October 26, 2020. At the meeting of the Expert Council of the Project Office for the Development of the Arctic on the topic "Problems of School Education in the Arctic

zone of the Russian Federation", which took place in June 2020, among other issues discussed there were issues of attracting teachers to the Arctic zone, the problems and prospects of distance learning for schoolchildren, the specifics of education for the indigenous peoples of the North and the pandemic consequences for education. We believe that in the conditions of the Arctic zone, where there are still serious technical difficulties with Internet access, and with the personal digital device availability for each child, the prospects for universal education under the AES project (an Arctic electronic school) by analogy with the MES, are not in the near future.

It is noteworthy that neither e-learning nor distance learning technologies involve artificial intelligence systems in a broad sense. We believe that electronic technologies, distance education technologies and artificial intelligence technologies are similar, but not identical concepts. The definition of the first two is contained, as indicated, in the federal law "On Education in the Russian Federation", and the legal concept of artificial intelligence was first formulated in our State in a by-law-Decree of the President of the Russian Federation dated October 10, 2019 No. 490 "On the Development of Artificial Intelligence in the Russian Federation", later it moved to Federal Law No. 123-FZ.

In accordance with these acts, the artificial intelligence is understood as a set of technological solutions that allows to simulate the person cognitive functions and get results that are comparable, at least, to the human intellectual activity results. At the same time, it is separately noted that the simulation includes self-learning and the search for solutions without a pre-set algorithm. It is important to note that the definition fully covers the currently available types of artificial intelligence in a broad sense, i.e. the artificial intelligence that works on the basis of pre-defined tasks (existing knowledge), and artificial intelligence that works autonomously, i.e. a technology that can potentially completely replace a person in performing tasks (Vasiliev, A. A., Shpopper, D. & Mataeva, M. H. 2018).

The definition reflects the artificial intelligence fundamental characteristics, which are revealed from its definition:

- this is a complex of technologies, not a single technology;

- the artificial intelligence can self-study and search for solutions without pre-defined algorithms. This is its fundamental difference from other technologies;

- the artificial intelligence can get results that are comparable, at least, to the human intellectual activity results. The definition implies that artificial intelligence can potentially get better results than those obtained by humans.

With the adoption of the National Strategy for the Artificial Intelligence Development for the Period up to 2030 in 2019, Russia has become one of the countries with strategic planning documents in the artificial intelligence field.

The National Strategy for the Artificial Intelligence Development for the Period up to 2030 states that the use of artificial intelligence technologies in the social sphere contributes to the creation of conditions for improving the population living standard, among them there is improving the services quality in the education field. At the same time, the National Strategy specifies what is meant by improving the services quality in the educational environment. Namely, the educational process adaptation to the students and the labor market needs, the learning performance indicators systematic analysis to optimize the children professional orientation and early identification with outstanding abilities, knowledge quality assessment automation and analysis of information about learning outcomes. These processes will be implemented by artificial intelligence systems in the future.

Conditionally, the legal conditions for stimulating the artificial intelligence technologies introduction in the education field can include experimental and innovative activities, the definition and content of which is fixed in Article 20 of the Federal Law on education. Of course, the purpose of these activities is focused on the education system modernization and development. As stated in the collective Commentary to the Federal Law "On Education in the Russian Federation", "the innovation activity is defined as an activity (including scientific, technological, organizational, financial and commercial) aimed at innovative projects implementing, as well as creating innovative infrastructure and ensuring its activities".

In the State Program for the Education Development until 2025, approved by Government Resolution No. 1642 dated December 26, 2017, the innovative and experimental components are expressed somewhat differently than in the previous similar program. Within the State program framework, a departmental target program "Support for Innovations in the Education System Development and Monitoring, Ensuring the Effectiveness of Competitive Mechanisms for the Program Activities Implementation in the Education Field" is provided. Its goals are to provide the annual

support for at least 20 strategic initiatives and innovative developments aimed at developing regional and municipal systems for the education system development and monitoring.

A new project of the Government of the Russian Federation on the digital educational environment formation may become a serious development in the implementation of the constitutional right to education in the Arctic in modern conditions. Its main goal is to provide free access on the "one window" principle for all categories of citizens, including those studying under higher education educational programs and additional professional education educational programs, to online courses implemented by various organizations engaged in educational activities and educational platforms.

It is noteworthy not only that the Government of the Russian Federation is promoting the formation of a single publicly accessible digital educational environment, but also the introduction of such terms as educational platforms, online courses, passport and online course expertise, personal educational trajectory, portal, and others, reflecting the transformation of the right to education in the information and digital reality, into the Russian normative field.

However, these are only the first steps in the legal regulation of the artificial intelligence technologies usage in the right to education realization.

One of the educational relations subjects is the student. In relation to it, the artificial intelligence is designed to ensure the educational services availability and quality, the competencies for a specific educational program systematic and complete development. The use of artificial intelligence can really solve the problem of supporting an individual educational trajectory at a new qualitative level, which should be dynamically rebuilt as students acquiring competencies. The role of a living teacher should be transformed from a knowledge transmitter to the studied subject philosophy carrier. Unfortunately, at present, the individual learning path is understood narrowly and "technically primitive". With regard to the higher education peculiarities in the Arctic, the nomadic university positive experience should be noted. This is a project of the International Arctic Council, in the implementation of which, in addition to Russia, four other countries participate (Sweden, Scotland, Norway and Finland). In 2020, within the project framework, almost 30 Yakut reindeer herders began to study a shortened bachelor's program remotely at the Norwegian University of Nord. Graduates will be able to apply their knowledge in the fields of

entrepreneurship, modern technologies and traditional food for the Northern peoples in practice, in their usual field. It should be agreed that this initiative and the similar ones will help the northern peoples learn without breaking the traditional way of life, and to develop their economy without destroying it. And if the system of young reindeer herders remote learning can be established, it will give many new opportunities.

At the end of January 2021, the Ministry of Education of the Russian Federation announced the introduction of artificial intelligence basics learning in Russian primary schools. The initiative deserves the approval and support, but it raises numerous questions, i.e. the need to modernize the entire educational program, starting with primary classes, personnel training and methodological developments, according to which students will be taught the artificial intelligence basics.

Thus, it can be summarized that in order to stimulate the development and use of artificial intelligence technologies in terms of realizing the right to education in the Arctic regions of Russia, it is necessary to adapt the regulation in terms of human interaction with artificial intelligence, and to develop appropriate ethical standards. At the same time, the excessive regulation in this area can significantly slow down the development pace and technological solutions implementation.

4 DISCUSSION OF RESULTS

For quite a long time, legal scholars have been discussing the assignment of the legal status of "electronic persons" to robots (Yastrebov, 2017), the recognition of a full-fledged society cyber subject (Čerka et al., 2015), the possibility of granting legal personality to virtual persons (Polich, 2018), the granting of a particular system the status of a subject of law (Gabov, 2018), the recognition of an AI system as a subject of copyright and patent rights (Morhat, 2018), and the use of AI in justice (Afanas'ev, 2020), in the social human rights implementation (Lipchanskaya and Zametina, 2020).

In the domestic legal doctrine, the attempts to systematically approach the artificial intelligence technologies regulation have not been made for a long time. Currently, there are publications devoted to the artificial intelligence regulatory problems conceptual understanding problems, where it is fairly noted that "the tactics of regulatory promotion ... are not objectionable, provided that the changes are complex, interrelated, and this is impossible without

developing at least the most general principles with the regulatory efforts dynamics understanding" (Gabov and Havanova, 2018).

T. V. Zametina, E. V. Kombarova, and E. Y. Balashova consider the artificial intelligence introduction as an objective process that affects human rights, which are the highest value recognized both at the national and international levels (Zametina et al., 2020). At the same time, the artificial intelligence introduction should be associated with the democracy constitutional values implementation, recognition and respect for the interests of the individual, society and the State.

The researchers A.V. Keshalava, M.P. Budanov, V.Yu. Rumyantsev predict a significant impact on society and the "digital economy" of mobile, cognitive and cloud technologies, the "Internet of things" and "big data" technologies (Keshelava et al., 2017).

The E. Dobrolyubova, O. Alexandrov, and A. Efimov study (Dobrolyubova et al., 2017), devoted to the digital transformation prospects, emphasizes the need to eliminate legal and organizational barriers as a factor in the digital transformation success in certain industries, including education.

Considering the young people educational migration problem and the youth outflow from the Arctic regions of Russia, V. Levkin, G. Detter, E. Gladun et al. (Ljovkin et al., 2020) revealed the high potential of digital technologies in solving the youth migration problem, which was previously considered unsolvable. In particular, the high-quality distance education availability can sufficiently increase the attractiveness of the Arctic territories for the young people's life, study and development. The authors suggest that the Arctic young people migration outflow can be sufficiently reduced if the digitalization opportunities are used.

5 CONCLUSIONS

The study allows to draw the following conclusions.

1. The artificial intelligence is an essential condition for the future educational standards development. Currently, in the education field, the artificial intelligence is manifested in two aspects: as a technology for the education sustainable development and as an object of study within the educational process.

2. The Concept of the Development of Regulation of Relations in the Field of Artificial Intelligence and Robotics Technologies until 2024 unreasonably ignores the education field, which is not listed among

the priority industry areas for regulating the use of artificial intelligence. This situation does not contribute to the education sustainable development in the conditions of information and digital reality.

3. In relation to schoolchildren living in the Arctic regions of the Russian Federation, the problem of introducing in-depth study of native literature, culture and traditional crafts is relevant. At the same time, it is impossible to create artificial barriers to the electronic and remote technologies development that make it possible to participate in online webinars, conferences, study electronic textbooks and books, listen to electronic lectures and speeches.

4. Conditionally, the legal instruments for stimulating the artificial intelligence technologies introduction in the education field in the Arctic can include experimental and innovative activities, the definition and content of which is fixed in Article 20 of the Federal Law on Education. Of course, the goal of these activities is focused on the education system modernization and sustainable development.

ACKNOWLEDGEMENTS

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