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**SUSTAINABLE DEVELOPMENT GOALS AND PRIORITIES FOR
EDUCATIONAL ENVIRONMENTAL SPACE TRANSFORMATION**

E.N. Dzyatkovskaya (a)*, G.K. Dlimbetova (b), A.N. Zakhlebny (c), E.V. Ivanova (d), A.A. Mamchenko (e), S.U. Abenova (f)

*Corresponding author

- (a) Institute for Strategy of Education Development of the Russian Academy of Education, 105062, ul. Makarenko 5/16, Moscow, Russia, dziatkov@mail.ru*
- (b) Doctor of Pedagogical Sciences, Professor of the Eurasian University named after L.N. Gumilyov Astana, The Republic of Kazakhstan, gainid@mail.ru
- (c) Institute for Strategy of Education Development of the Russian Academy of Education, 105062, ul. Makarenko 5/16, Moscow, Russia, anzmos@bk.ru
- (d) PhD (Philology), Associate Professor of Chelyabinsk State University, Chelyabinsk, ul. Brothers Kashirins, 129, elena-ivanova79@yandex.ru
- e) Institute for Strategy of Education Development of the Russian Academy of Education, 105062, ul. Makarenko 5/16, Moscow, Russia, anna-priv@yandex.ru
- f) Ph.D. of pedagogy and psychology of the Eurasian National University. L.N.Gumilyov, Astana, Yanushkevich St., 6, The Republic of Kazakhstan, sauleta_astana@mail.ru

Abstract

The article considers the strategic objectives of the education for sustainable development (ESD) of the two countries - Russia and Kazakhstan - in connection with the national goals of their sustainable socio-economic development and the global goal 4.7. The legal and regulatory framework for the implementation of ESD in two countries is given. The general approaches to the choice of theoretical and methodological bases for the implementation of education in the interests of sustainable development are defined. The problem of continuity of the of the content greening of general and vocational education of young people on the basis of value-ideological ideas of sustainable development is set for the national education systems of the two countries. The task of creating the tool necessary for solving this problem is formulated - a single for the population of different age groups educational environmental space that implements value-semantic vectors of the concept of sustainable development. The article formulates the general theoretical and methodological approaches to the transformation of the educational environmental space in the interests of sustainable development. The problem of increasing the availability of sustainable development ideas for the population has been posed and a solution has been presented. The role of the axiomatization of key ideas of sustainable development and their presentation in the language of didactic metaphors with archetypical national roots is substantiated. The conclusion is made about the importance of cross-cultural linguistic and cultural studies in this area.

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Keywords: The ESD, information space, strategic goals.



1. Introduction

On September 25, 2015, the UN member states adopted the 2030 Agenda for Sustainable Development (resolution A / 70 / L.1). This is a plan for large-scale transformations in all countries of the world, including 17 inseparable goals and objectives in the field of sustainable development (Maurer & Bogner, 2019; Didham, Olsen, & Sato, 2013).

The whole world is focused on sustainable development, but the trajectories of this movement, its capabilities and priorities are nationally specific (Rieckmann, Mindt, Gardiner, Leicht, & Heiss, 2017).

According to the adviser to the President of the Russian Federation, Alexander Bedritsky, there is an audit of the existing development strategies and plans at the national regional and local levels based on their comparison with the global SDGs and objectives (Doklad o chelovecheskom razviti v Rossii za 2018 god, 2018).

Successively with the global goals and indicators of sustainable development, the Russian Federation adopted the Environmental Security Strategy for the period up to 2025 and the Economic Security Strategy of the Russian Federation for the period until 2030.

Decree of the President of the Russian Federation of May 7, 2018 N 204 “On the national goals and strategic objectives of the development of the Russian Federation for the period up to 2024” reflected the national priority projects directly or indirectly coinciding with the 17 sustainable development goals of the UN until 2030.

According to these and other documents of the strategic development planning of the Russian Federation, the country is entering a new stage of the technological revolution (Science, Technology, Innovation), which requires a transition to a new model of socio-economic development. According to Vladimir Putin, delivered at the Jubilee General Assembly of the United Nations (2015), this is a global challenge. Its essence is to ensure the effective use of the scientific and technological potential, the human and natural capital of the country in the long term in order to reach the trajectory of sustainable development.

Every year, the Analytical Center under the Government of the Russian Federation for 2016-2018 prepares human development reports in which the objectives and indicators of the SDGs17 are adapted to the Russian reality (Celi ustojchivogo razvitiya OON i Rossiya: doklad Analiticheskogo centra pri Pravitel'stve RF o chelovecheskom razviti v Rossijskoj Federacii, 2016). The model of environmentally sustainable development of the country, designed to ensure the effective use of natural capital and the elimination of the impact of environmental threats to human health, is substantiated. Issues of ecology, environment, public health are considered in their relationship with the economic development of the country (Ekologicheskie priority dlya Rossii: doklad Analiticheskogo centra pri Pravitel'stve RF o chelovecheskom razviti v Rossijskoj Federacii, 2017). A comprehensive analysis of the role of innovations and the consequences of the modern stage of scientific and technological progress for the development of the country in the context of sustainable development is proposed (Chelovek i innovacii: doklad Analiticheskogo centra pri Pravitel'stve RF o chelovecheskom razviti v Rossijskoj Federacii, 2018). Reports indicate that about 7,000 enterprises in the country are obliged to apply the best available technologies that allow to achieve a balance between industrial and environmental policies. An important milestone on the road to sustainable development of the state is Russia's entry into the Inter-Agency and

Expert Group on Sustainable Development Goal Indicators (MEG-SDG), which was established by the UN Statistical Commission at the 46th session in 2015. In accordance with the Order of the President of the Russian Federation dated July 18, 2018 N 191-rp), an interdepartmental working group was formed in the Russian Federation under the Presidential Administration of the Russian Federation on issues related to climate change and sustainable development (IWG), which included Rosstat.

In Russia, an expert group was created on information and statistical support for monitoring sustainable development goals. We are talking about monitoring the achievement of global goal 4.7. According to GG 4.7, it is envisaged “by 2030 to ensure that all students acquire the knowledge and skills necessary to promote sustainable development, including through education on sustainable development and sustainable lifestyles”. By the order of the Government of the Russian Federation of September 23, 2017 No. 2033-p, the Federal Statistical Work Plan was supplemented with subsection 2.8 “Indicators of achieving the goals of sustainable development of the Russian Federation”, which included 90 indicators of achieving sustainable development goals in the Russian Federation. Under the Rosstat of the Russian Federation, work is under way to develop a system of national indicators for achieving GG 4.7, including the formation of key competencies “necessary to promote sustainable development”.

In 1999, Kazakhstan was elected to the UN Commission on Sustainable Development. In 2005, the country adopted a model of economic development within the framework of the “Green Growth” concept, which in 2008 called for a Global “green” new course.

The country's development strategy until 2030 sets the goals of improving the quality of the state of the environment and preserving natural resources for future generations. The country's key environmental problems are related to the drying up of the Aral Sea, the consequences of the Semipalatinsk nuclear test site, the presence of industrial sources of pollution (abandoned mines, mines, radioactive waste, accumulation of industrial and household waste in cities), deforestation or forest fires, water pollution. Currently, the Concept of transition of the Republic of Kazakhstan to sustainable development for 2007-2024 is being implemented, covering all spheres of the country's life.

Of particular note is the "Concept for the transition of the Republic of Kazakhstan to a "green economy" "dated May 30, 2013 No. 577. The strategic objectives of the Concept are improvement of well-being, quality of life of the population of Kazakhstan and the country's entry into the top 30 most developed countries of the world by minimizing the burden on the environment and the degradation of natural resources. Kazakhstan launched the Astana initiative “Green Bridge”, which was continued under the name of the Partnership Program “Green Bridge” and was supported by the UN General Assembly (Konceptsiya po perekhodu Respubliki Kazahstan k zelenoj ehkonomike, 2013).

In "Strategy of Kazakhstan - 2050" four main directions of development of the sphere of education are designated: improvement of pre-school education; training in modern engineering and technical specialties; supporting private businesses, non-governmental and charitable organizations to help develop education; modernization of teaching methods. Keywords of changes occurring in education: continuity, mobility, openness, quality, rejection of narrow specialization, consideration of individual characteristics, formation of spiritual, moral and professional values of future specialists, ensuring the fundamental nature of education. One of the strategic objectives of higher education is also the training of a specialist who will contribute to the improvement of the state of the environment. One of the key components of the

development of environmental education is the task of training future specialists with knowledge and special skills in the field of ecology, with a high ecological culture.

The “Plan of Measures for the Implementation of the Concept on the Transition of the Republic of Kazakhstan to a Green Economy” provides for the inclusion in the educational programs of engineering specialties of elective courses on environmental protection and sustainable development; actualization of environmental problems in the course “Ecology and Sustainable Development” in universities; activation of training seminars on "green economy" for specialists of local executive bodies; organizing scientific events on green economy issues, taking into account international best practices; training in monitoring the environmental status of the sectors of "green economy" in the framework of various specialties and commercialization of effective environmental projects; environmentally oriented training, retraining and advanced training of specialists of the "green economy" within the needs of employers under the program "Roadmap of employment of the population for 2020". It is planned to create a database of environmental problems, competitions of environmental projects in universities and colleges, in which specific environmental problems of production are solved under the guidance of teaching scientists.

Among the key principles of the “green course” of the country, the “new way of thinking and enlightenment” stands out. Within this direction, the project “Ecologization of the university education system as an innovative way of modernizing the spiritual consciousness of students” (the Eurasian University named after L.N. Gumilyov) is being carried out. An important stimulus for the development of this area was the program article of the President of Kazakhstan on the spiritual renewal of society [8]. Ecological education cannot be carried out without a spiritual awareness of the need for caring for the Earth as a whole, for nature and man, without systematically taking into account the experience of ancestors for all the times of the nation’s existence, without the spiritual and moral principles of attitude to life.

2. Problem Statement

A prerequisite for countries to enter the sustainable development trajectory is to solve the problem of the qualitative development of human capital. It is not only about training for a “green” economy, but also about creating conditions for self-identification and positive socialization of the individual in the new world. Experts talk about the synthesis of the scientific, educational and information revolution, the need for equal access of all groups of people without exception to quality educational services throughout their lives. At the same time, any innovations should not break away from what has been achieved in culture, but be carried out by updating traditions and giving them new meanings. This new civilization task cannot be solved without creating an educational environmental space based on the values of sustainable development and common for the population of different age groups.

3. Research Questions

What qualities should such a space have? What should it be in order to adapt a person to the radical changes taking place in society in the context of his transition to a humanist-noospheric world

civilization? What are its spatial-semantic, content-methodical and communicative-organizational characteristics?

In many countries of the world, including the Russian Federation and Kazakhstan, the integrating factor determining the development of education for sustainable development is traditionally environmental education (but not limited to it), the focus of our attention was on the educational environmental space.

4. Purpose of the Study

The purpose of the research was to analyze the priorities of the transformation of the educational environmental space for solving the strategic tasks of environmental education in the interests of sustainable development (on the example of Russia and Kazakhstan).

5. Research Methods

We used theoretical methods of pedagogical research: text analysis, comparative analysis, generalization.

6. Findings

Today, ESD is implemented in general education schools of the Russian Federation based on the requirements of the Federal State Educational Standard of General Education on the results of studying sustainable development issues in school subjects, as well as mastering the metasubject skills necessary to assess the risks of various socially problematic situations for environmental quality, human health and managing these risks.

The principles and objectives of ESD in general education are implemented mainly through the environmental component of school subjects, the subject “Ecology” at the level of secondary general education, the subject area “Technology”, the State program “Patriotic education of citizens of the Russian Federation for 2016-2020” and extracurricular activities. More than 60 universities of the country provide training in the field of sustainable development.

An analysis of the reasons for the discrepancy between the expected and actually obtained results of environmental education for sustainable development shows that the formation of value priorities and sustainable lifestyle skills for young people arising from problems of building of the educational environmental space surrounding a person. It discusses the need to create such a specialized information and educational space for young people who solve the problem of its advanced socialization in a rapidly changing world.

A new information environment should be filled with knowledge about the future, cultural meanings of harmonization of society and nature, consumption and production, improvement of the quality of life of people without reducing the environmental quality of the environment (Olefir, 2013).

The organization of such a space requires an appropriate legislative framework, sufficient funding, coordination of education and educational resources at all levels of education based on sustainable development ideas. It requires the creation of actually operating mechanisms of interaction between

informational, educational, cultural and social institutions, which will give systemic effects. At the same time, not only their “horizontal”, but also “vertical” connections should be realized between the global, regional and the local level of ESD. A feature of such a space should be a focus on the future, an orientation toward advanced socialization in a world that is increasingly becoming global.

The subjects of such interaction are institutions of education and education of various types, methodological services, education authorities, libraries of educational institutions, children and youth libraries, public libraries, palaces of culture, museums, parks, specially protected natural areas, public organizations, mass media (radio, television, information services, the Internet), various educational events, exhibitions, various forms of tourism and recreation.

The effectiveness of their interaction can be achieved only on the basis of openness and unity of the value-semantic orientation of all components of the information environmental education environment. The absence of such integrity, the reductionist nature of environmental information in society (a lot of interconnected, fragmented information) hampers the formation of a person’s environmental consciousness, his holistic picture of the world, understanding the value of harmonizing environmental, economic, social and other processes in society.

In Kazakhstan, key ideas for creating an information space for environmental education in the interests of sustainable development are actively developing in relation to vocational education. As Alinov (2016) notes, today the competitiveness of new technologies is evaluated not only from the standpoint of economic efficiency, but also from the point of view of their resource efficiency, energy efficiency and environmental friendliness. Kazakhstan has set itself the task of moving to resource-saving innovative technologies and turning to training specialists of a new technological order for a green economy, on the one hand, and expanding the availability of mass education, on the other. The country’s scientific potential will significantly expand due to the modernization and reorientation of university science. Following the model of Nazarbayev University, several university centers will be created, which are clusters of innovative technologies”.

Accordingly, the concept of “environmental passport of the university”, meaning the consideration of the environmental component in each specialty, in each studied discipline, is being significantly expanded; the principles of introducing environmental material into the content of all disciplines are defined (Dlimbetova, 2018). The content of environmentally oriented activities of all departments of the university is described.

To implement this development strategy, an appropriate information and educational space is needed, successively encompassing mass education and public awareness. The expected result of the creation of such a space will be the solution of the problem of harmonization of ecologization of education, the development of students’ ecological thinking and their spiritual consciousness. We believe that every teacher should feel responsible not only for the implementation of the principles of science, humanity, system, integration of contiguous fields of activity, but also for the development of the consciousness of future specialists. Therefore, the university should not be limited only to the introduction of the environmental component in the content of the disciplines, but it is necessary to adhere to a comprehensive approach, forming an ecological consciousness, a sense of patriotism, and developing the ecological competence of the individual. Only a comprehensive approach to the ecologization of

vocational education can become the driving force for the development of a “green economy” (Alinov, 2016).

We consider the involvement of future specialists in the volunteer movement at the university level to be one of the aspects of preparedness for environmental activities in the future profession.

Currently, a model of eco-volunteer with environmental responsibility is being created. Environmental responsibility is understood as the desire to learn patterns of improvement of living conditions for humanity, their explanation in social groups, compliance with environmental standards, attention to unresolved problems in the professional sphere, the search for effective ways to solve them, the development of modern environmental protection technologies; orientation to the solution of environmental problems taking into account the norms of ethics and humanism based on the Kazakh philosophy. The mechanism for the development of the environmental volunteer movement "Zhergyy" of young students was launched through the Center for Youth Policy of the Eurasian University named after L.N.Gumilev.

The informational environmental education space in Russia and Kazakhstan has just begun to take shape. They have both common and special features. In both countries, its development is stimulated by the process of digitalization and informatization and is represented by spatial-semantic, content-methodical, and communication-organizational components. Currently, only local educational environmental space of schools, libraries, museums are accessible for students.

Until recently, the formation of such a space was hampered by the insufficient development of theoretical and methodological approaches to forming a culture of sustainable development.

In order to determine the psychological and pedagogical foundations of the spatial-semantic and substantive-methodical integrity of the educational environmental space in 2017 the Institute of Educational Development Strategy of the Russian Academy of Education proposed the Concept of General Environmental Education for Sustainable Development. The concept corresponds to the international agreements and documents of the United Nations and UNESCO in the field of ESD, regulatory documents of the Russian Federation in the field of education and is aimed at achieving the GG 4.7. The concept answered the question: what “Ecological arithmetic” and “Ethics of a planetary scale” mean - the cornerstone of environmental education for sustainable development as academician Moiseev (1995) considered. In the Concept, the tasks of the educational environmental space are formulated - cultivating responsible consumption, willingness to control their ecological footprint, participating in creating a green economy.

The requirements for the personal, metasubject and subject results of environmental education were formulated successively for levels of education. The ways of “entering” the ideas of sustainable development into the content of different academic disciplines are defined. The concept contains recommendations for the use of technology of trans-subjectness, which allows not to repeat the mistakes of traditional “greening”, with the inevitable increase in the volume of subject material, and to identify the meanings and meanings of ideas of sustainable development in the content already existing in school subjects.

The concept is based on the development of a theory of cultural-subject-oriented didactics based on post-non-classical ideas of trans-subject and semantic pedagogy.

The concept fixes the transition of environmental education in the country from the stage of enlightenment and ecologization of individual school subjects to the value-semantic integrity of the “end-to-end”, trans-subject, content of environmental education and the formation of a new level of ecological culture, which is not limited to practical environmental skills, but goes on the level of worldview and values of SD.

The concept examines the new roles of young people: inhabitants of the planet, responsible consumers, inventors of nature-like technologies, social partners, carriers of environmentally sound healthy life, etc.

The concept outlines the strategic directions for the development of environmental education for sustainable development and the ways of their implementation. This became possible due to the fact that the didactics of education for sustainable development, like any science, made three major steps in its development: conceptualization, axiomatization and metaphorization of the object of knowledge (Dzyatkovskaya, 2017).

As for the conceptualization of the content of ESD implemented through formal, non-formation, informal education, the navigation guidelines for young people in a global society were given: what is the world, how to live in it and what is valuable in it?

The concept not only reflected the position of the new ethics leading away from anthropocentrism, but also the modern scientific picture of the world, built on the ideas of global evolutionism, including the language picture of the world of sustainable development.

The step of axiomatizing is typical for all modern scientific knowledge. The axiomatic method is a method of development, construction and systematization of scientific and theoretical knowledge. In pedagogy, this is a way of formalizing knowledge, deductive derivation of new knowledge, the implementation of a mental experiment, which is especially important when experimenting with real objects is impossible. Axiomatization of the content of key ideas of sustainable development led to the birth of “green axioms” as a result of the didactic adaptation of the ecological imperative, which allows students to independently derive moral imperatives from them and personalize them.

The next inevitable step, the neglect of which hampered the introduction of ESD is the definition of its language. It became obvious that to form a new culture, a new human psychology is impossible only on the basis of the language of science, ignoring everyday thinking, with its sensually-emotional, figurative, mythological basis. Any new time in history introduces new metaphors into the language, and new pedagogical tasks cannot be solved using traditional didactic metaphors. If the process of their creation goes spontaneously, this can create serious obstacles, especially in achieving personal results. All human thinking is based on metaphors. Each stage of the development of society is characterized by its own basic metaphors of interaction with nature. Such metaphors of sustainable development as “we are all in the same boat”, “green economy” have already entered our life, but dangerous, inhuman metaphors, for example, the “golden billion”, coexist with them. In the mass consciousness, relict metaphors are preserved, reflecting the psychology of a consumer society - “the owner of the earth”, inexhaustible, boundless ... natural resources, “victory over nature”, “everything can be bought”.

The problem of metaphorization is extremely laborious. The development of a new metaphorical ecological picture of the world, both verbal and visual, should be based not only on general civilization

ideas about sustainable development, but also on the national mentality, archetypes of environment-saving behavior, mythological roots in the consciousness of the people, which is an extremely difficult task. We believe that it should be solved, first of all, at the level of broad education of the masses of the population, so that ideas of sustainable development take root, and not be rejected, as an alien implant.

Conceptualization, axiomatization, metaphorization of content for SD should give rise not only to the educational, but above all to a broad educational movement - a new enlightenment.

Academician Moiseev (1995) wrote:

New social behavior should enter human flesh and blood, define a new stage of its development as a biological species living in conditions of society to the same extent as the principle of "do not kill!" Which changed the very content of the evolutionary process. We have a long, long and heavy siege to come: a simple system of directives cannot be avoided here. (p. 11)

Therefore, it was not by chance that the conceptual and terminological apparatus of ESD, built on the basis of both scientific concepts and archetypically significant cultural concepts, was in the center of attention of the concept.

The didactic metaphors of the content of the EASD were designed: "green" axioms and ecological "lenses" that make complex concepts of sustainable development accessible to students even of preschool age. In order to implement the provisions of the concept, recommendations were prepared on introducing changes to the documents of the Federal State Educational Standards, which allow to ensure the continuity and integrity of the environmental component of the information space around a person.

The main provisions of the Concept were tested and introduced into the educational practice of the interregional network pedagogical partnership "We learn to live sustainably in a global world". Its founders were the UNESCO Chair for the Study of Global Problems of Big Cities in Lomonosov Moscow State University and the UNESCO Network Chair "Environmental Education for Sustainable Development in the Global World" in Federal State Educational Institution "Institute for the Strategy of Education Development of Russian Educational Academy".

The partnership operates on the basis of voluntariness and openness, its website is actively visited by residents of the United States, Canada, European states, and Australia. Today, the network has thousands of teachers from Moscow, Moscow, Ryazan, Sverdlovsk, Chelyabinsk, Kemerovo, Tomsk, Irkutsk regions, the Khanty-Mansi Autonomous Okrug, the Republic of Udmurtia, the Trans-Baikal Territory. They are united by the desire to improve the quality of education on the basis of updating their content in the interests of the country's sustainable development. The teachers of the innovation and experimental partnership platforms show masterclasses of the Concept implementation not only for Russian teachers, but also abroad (for example, at the G20 meeting of education ministers in September 2018, Argentina; Institute of Technology Carlow in Ireland; three forums on environmental education in CIS countries). Video workshops are available at <http://partner-unitwin.net>. Teachers become authors of guidelines on the use of "green axioms" and "environmental lenses" of education for sustainable development, which are pedagogically adapted even for the smallest.

The theoretical and methodological foundations for creating the informational environmental education space in Kazakhstan were formulated in an article by the President of Kazakhstan N.A. Nazarbayeva "Looking to the Future: Modernizing Public Consciousness" (April 12, 2017). Environmentally-oriented training of future teachers in Kazakhstan, on the one hand, proceeds from the fact that modernization is impossible without changing existing habits and stereotypes of human behavior in the environment, and on the other hand, from the need to preserve the historically formed unique national traditions of habitat conservation that are based on reasonable pragmatism - accurate knowledge of their national and personal resources, ways of their economical spending, ability to plan their future. "Pragmatism is the opposite of wastefulness, arrogance, life for show. The culture of modern society is a culture of moderation, a culture of wealth, not luxury, it is a culture of rationality" (Nazarbaev, 2017, section I).

Such an installation, of course, requires revision the whole system of teacher training, when for each discipline environmental activities are determined, the content of the education system is constantly updated, new challenges in this area appear, and new ways of greening education are being searched. A guide for promoting environmental ideas in education is the "State Program for the Development of Education of the Republic of Kazakhstan for 2011–2020". In terms of greening the economy, legislation and society as a whole, the task of educating the younger generation of environmental responsibility comes to the fore, ideas of ethnopedagogy are being introduced, conditions of continuity are maintained, forms, methods and technologies of education and training are improved, environmental activities of students and schoolchildren are organized. At the same time, the level of formation of the national identity of the student's personality is one of the conditions for successful education of young people as socially active members of society, responsible for the development and preservation of the spiritual values of the national culture, having a high culture of interethnic communication, able to build a constructive dialogue with other cultures (Bisenov, 2017).

7. Conclusion

The analysis of the ways and strategic prospects for the development of informational environmental education space in our countries allowed us to identify common areas associated with

- a link between innovation and tradition;
- expanding the enrollment of students with the knowledge and skills necessary to promote sustainable development, including through training on sustainable development and sustainable lifestyles, citizenship peace and awareness of the value of cultural diversity and the contribution of culture to sustainable development;
- enhancing the fundamental nature of environmental education, playing the role of an integrating factor in relation to the content of natural science and social and humanitarian education, giving it a proactive character, mastering not only the rules, but principles of behavior, when young people will face radical changes in lifestyle and work during even one decade;
- overcoming reductionism, fragmentariness of knowledge about environment; the formation of a network of educational and training Internet sites, providing the possibility of obtaining systemic,

professional and humanitarian knowledge in the field of ESD, the development of digital, basic, further education and self-education;

- reorienting towards sustainable development goals and values of the third millennium, corresponding to a new civilizational paradigm, a new stage of the information technology revolution, new meanings of education and education and their role in people's livelihoods.

As for the developed strategic planning documents, they must ensure the continuity of the targets and indicators characterizing the components of sustainable development.

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