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Ideas of sustainable development as a condition for the integrity of the content of environmental education

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Abstract. In the 21st century, the ideas of sustainable development has become system-forming in all spheres of society. The goals of transition to the biosphere-compatible model of socio-economic development determine the key strategies of changes in economy, education, and culture. The ideas of sustainable development are penetrating into the content of education based on the process of ecologization of educational subjects. Ecological components of education, as a potential receptor of sustainable development ideas, are present in the content of almost all educational subjects. However, the problem of their coherence among themselves has not been solved so far. The continuing fragmentation of environmental content reduces the effectiveness of mastering the ideas of sustainable development and the formation of a modern scientific picture of the world. The author proposes to consider the problem of the integrity of environmental components of general education in interrelation with the realization of cross-cutting value and worldview lines of education for sustainable development. On the example of the key concept of education for sustainable development “ecological imperative” the possibilities of including the vector of sustainable development in environmental education are considered.

Key words: environmental education, integrity, sustainable development, environmental imperative, value-worldview content.

Introduction

The 21st century is the time when the world community is rethinking the role of environmental education in the destiny of civilization (International conferences - Stockholm, 1972; Tbilisi, 1977; Rio de Janeiro, 1992; Johannesburg, 2002). The UNESCO World Conference on Education for Sustainable Development (Berlin, 2021) adopted the Roadmap for Education for Sustainable Development (2021-2025), which called on countries to more actively integrate sustainable development into all curricula. The concept of “sustainable development” has entered the UN documents and legislation of all countries of the world [1]. According to the Roadmap, the content of education should include the ideas of sustainable development, justification of the biosphere-compatible model of socio-economic development, characterization of new cultural universals. One of them is a new restrictive category that plays the role of regulator of society's relations with nature - the ecological imperative [2].

The renewal of the content of education based on the ideas of sustainable development is aimed at changing the worldview, psychology and behavior of young people, who will have to master new social roles of planet inhabitants, the satisfaction needs of whose is not to the detriment of the environment and future generations. This renewal of content requires the use of innovative teaching methods, expansion of the spheres of action of the educational organization, revision of the content of traditional environmental education [10].

UNESCO calls for integrating the ideas of sustainable development into all general education and professional training programs. And since the platform of education for sustainable development in all countries of the world is environmental education/environmental education, in order to fulfill its historical mission it should become interdisciplinary (to cover all academic subjects), cross-subject (to become natural-scientific-social-humanitarian-technological), include the values of environmental ethics, form a social-humanitarian-natural-scientific picture of the world that explains the interrelationships of nature, society and economy on the basis of understanding, awareness and consciousness of the nature, society and economy.

The article is devoted to one of the pedagogical solutions for turning environmental education into a platform of education for sustainable development.

Methodology

The methodological basis for the analysis of education for sustainable development was the cultural theory of educational content. It allows us to determine the ontological, epistemological, axiological and praxiological bases of the content of environmental education for sustainable development at the pre-subject level, before the division of the content of general education by subjects [6]. When determining the content of the environmental component of academic subjects, we distinguished between its subject and aspect (value-worldview) orientation [13]. The analysis of the value component of education for sustainable development was based on the ideas about the structure of value, in which we distinguished cognitive, emotional and activity components.

When determining approaches to the education of values that have not yet entered the mass consciousness, we were guided by the principles of “soft” upbringing of scientific school of L.I.

Novikova - N.L. Selivanova [15]. We used an anticipatory approach to determining the objectives of environmental education [17]. We proceeded from the sociocultural significance of education for sustainable development, which is based on the philosophical understanding of modern environmental education as the third ecological revolution [11]. The system approach and the theory of open self-organizing systems and N.N. Moiseev's theory of universal evolutionism were considered as a general scientific methodology of education design [12]. We took into account the features of environmental education for sustainable development - its cross-cutting, interdisciplinary, interdisciplinary, human-sized and culturally appropriate nature [7].

Results

We analyzed the content of environmental education in the state educational standards of primary, basic, secondary general education. The obtained results allowed us to make the following conclusions.

1) All educational subjects, in one way or another, study the interaction of man (society) with his environment.

2) All subjects implicitly or explicitly contain information about the exhaustibility of natural and limited socio-cultural resources of human development, society, in one way or another, form opinions about the impossibility of unlimited growth of civilization, the importance of transition to a new, nature-like economic model - the model of cyclic production.

3) All academic subjects, including natural sciences, social and humanities, mathematics and informatics, study the properties of different systems - closed, locked and open. However, open, self-organizing, self-regulating systems are studied only on the example of human organism and natural ecological system, without considering the role of disequilibrium of socio-natural ecosystems and biosphere in their stability.

4) All educational subjects, one way or another, raise and consider modern environmental problems of civilization and include the issues of environmental education. At the same time, the ideas of sustainable development appear in the subjects only nominally, being weakly connected with the subject and environmental content.

5) Curricula preserve the separation of the natural-scientific and social-humanitarian picture of the world. Ecological components of educational subjects are not coordinated both in factual and value-worldview terms.

The unresolved nature of these problems makes it difficult for students to understand the interrelations of economic, social and natural processes in the surrounding world; the essence of global problems of mankind and the logic of their complex solution. There are no clear value-worldview orientations of behavior in the environment, because anthropo- and ecocentric approaches are clearly not differentiated [5]. Despite the students' ability to identify cause-and-effect relationships in the socio-natural environment, they find it difficult to give a reasonable assessment of such relationships, going beyond the usual clichés "take care of nature", "protect the environment" [8].

The study of basic principles of behavior in the environment is replaced by a prescription approach, memorization of rules of behavior, which turn out to be useless in the conditions of variability of natural and socio-ethno-cultural factors.

Understanding of the processes of the surrounding world and their cause-and-effect relations remains at the level of knowledge, but is not accompanied by their value interpretation, comprehension of the ecological imperative, personal position because of the blurred grounds for value assessments. Moreover, the economic-centered assessment prevails [14]. Thus, despite the presence of environmental components in almost all academic subjects, their sum does not make up a single whole neither in ontological terms (what is the world of environmental interactions?), nor in axiological terms (what is valuable in it?).

Discussion

Our proposal was to overcome the fragmentation of environmental components in academic subjects by developing cross-cutting interdisciplinary value-worldview content lines as a framework for learning-inspiration-activity for sustainable development. For this purpose, at the first stage, we proposed to include in the content of all academic subjects interdisciplinary concepts that carry knowledge about the interaction between society and nature. One of such concepts, reflecting the essence of education for sustainable development, is the “ecological imperative”. The ecological imperative is the key concept of the concept of sustainable development, which explains the objectivity of the “limits of growth” of civilization and the inevitability of reaching a new, biosphere-compatible development paradigm [16].

The ecological imperative is the boundaries of permissible human activity in the environment. They are dictated by objective prohibitions (Taboos) of nature, which “do not depend on human will”. It is a restriction of consumption and use of natural resources independent of human will, non-compliance with which leads to irreversible negative consequences for the environment, and thus for human health and life. After all, the natural benefits necessary for human life (concentration of oxygen in the atmosphere, fresh water, biodiversity, temperature regime on the planet...) cannot be replaced artificially. Unlike the Kantian imperative, which is of a moral nature, the ecological imperative is based on objective circumstances. Changing the level and nature of anthropogenic pressure on the biosphere leads to a shift of the line that cannot be crossed [12].

The analysis of the content of the concept “ecological imperative” has shown the following.

First, it describes the interaction between society and nature; defines the regularities of this interaction; names the ways of harmonizing man with nature, preserving his vitality and sustainability in the changing conditions of the global world [5].

Secondly, the ecological imperative connects material and spiritual values; connects traditional cultural values of the people, based on basic archetypal cultural concepts, with the challenges of the future - the values of sustainable development; generates moral imperatives - a meaningful personal attitude to the environment [9].

Thirdly, the ecological imperative determines the principles of human activity, behavior and actions in the environment; the ability and willingness to think systematically and creatively, to participate in solving environmental problems of the local community, to be resilient under the adverse impact of a rapidly changing environment. In general, these are the means of realization of nature- and culture-appropriate way of life in the environment.

However, mechanical addition of sustainable development ideas to the texts of curricula will not change the situation. In order to create new types of behavior of individuals, their groups and society as a whole in relation to the environment, it is necessary to ensure the integrity, continuity and consistency of education and upbringing on clear value-worldview bases; incorporation of value-worldview lines of sustainable development into the content of all academic subjects. This will enable the formation of a holistic picture of the world, understanding of the interrelation of natural, social and economic processes of the environment, consistent internal position of the line, hierarchy of values, motivation of self-restriction of consumption. One of the pedagogical means of solving this problem is the inclusion of key concepts of sustainable development in the content of educational subjects, which, due to their interdisciplinarity, can lay the foundations of the meta-language of sustainable development; help develop common criteria, indicators and ways of assessing the results of modern environmental education. Thus, in order to make the "ecological imperative" a cross-cutting value and outlook line of the entire general content of education, i.e., for its "recognition" in any academic subject, it should be pedagogically adapted and presented in a language understandable to each academic subject and each student, for example, to take the form of conceptual metaphors, thought images, symbols or allegories.

Conclusion

Environmental education in its historical development has passed through several stages that significantly affected the understanding of its goals, results, and conceptual apparatus. In just a few decades, environmental education has evolved

- from the study of ecology of natural systems to human ecology and social ecology;
- from environmental protection and rational nature management to modeling of sustainable, harmonious development of socio-natural ecological systems;
- from natural-scientific bases of environmental education construction to their complex with humanitarian-natural-scientific ones;
- from an object-based content design ("What is it?") to an activity-based one ("How?"), then to a social-problem-based one ("Why?") and, finally, to a program-targeted one ("For what?");
- from studying the experience of solving environmental problems in the past and present to using it to design elements of the future;
- from the leading value of love for nature to the value of ecological quality of the environment and, finally, to the priority value of survival of mankind, balance of its economic, ecological and social interests; sustainable development of society and nature.

Today, no one doubts that environmental education is not only a section of biology. It is a complex educational field about the interaction between nature and society, which is based on natural and human sciences, experience of nature management in the past and present, and is guided by the Sustainable Development Goals. The development of didactics of such education today determines the formation of education for sustainable development.

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Тұрақты даму идеялары экологиялық білім мазмұнының тұтастығының шарты ретінде

Андатпа. XXI ғасырда тұрақты даму идеялары қоғамның барлық салаларын дамытуда жүйе құраушы болады. Әлеуметтік-экономикалық дамудың биосфераға сәйкес келетін моделіне көшу мақсаттары экономикадағы, білім берудегі, мәдениеттегі өзгерістердің негізгі стратегияларын анықтайды. Оқу пәндерін экологияландыру процесіне негізделген білім беру мазмұнына тұрақты даму идеялары енеді. Тұрақты даму идеяларының әлеуетті рецепторы ретінде білім берудің экологиялық компоненттері барлық дерлік оқу пәндерінің мазмұнында бар. Алайда, олардың бір-бірімен үйлесімділігі мәселесі осы уақытқа дейін шешілген жоқ. Автор жалпы білім берудің

экологиялық компоненттерінің тұтастығын түпкілікті құндылық-дүниетанымдық білім беру желілерін іске асырумен байланысты қарастыруды ұсынады. "Экологиялық императив" білім берудің негізгі тұжырымдамасының мысалында экологиялық білімге тұрақты даму векторын енгізу мүмкіндіктері қарастырылған.

Түйін сөздер: экологиялық білім, тұтастық, тұрақты даму, экологиялық императив, құндылық және дүниетаным мазмұны.

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Идеи устойчивого развития как условие целостности содержания экологического образования

Аннотация. В XXI веке идеи устойчивого развития становятся системообразующими в развитии всех сфер общества. Цели перехода к биосферосовместимой модели социально-экономического развития определяют ключевые стратегии изменений в экономике, образовании, культуре. Происходит проникновение идей устойчивого развития в содержание образования, опирающееся на процесс экологизации учебных предметов. Экологические составляющие образования как потенциальный рецептор идей устойчивого развития присутствуют в содержании практически всех учебных предметов. Однако проблема их согласованности между собой до настоящего времени не решена. Сохраняющаяся фрагментарность экологического содержания снижает результативность усвоения идей устойчивого развития и формирования современной научной картины мира. Автор предлагает рассматривать проблему целостности экологических составляющих общего образования во взаимосвязи с реализацией в нем сквозных ценностно-мировоззренческих линий образования для устойчивого развития. На примере ключевого понятия образования для устойчивого развития "экологический императив" рассматриваются возможности включения вектора устойчивого развития в экологическое образование.

Ключевые слова: экологическое образование, целостность, устойчивое развитие, экологический императив, ценностно-мировоззренческое содержание.

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