

MANAGEMENT OF EFFECTIVE ECO-EDUCATION: PROBLEMS AND PROSPECTS

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Abstract: Over the past decades, the concept of “eco-education” has gained extreme popularity in the scientific, educational, pedagogical, informational, educational, public, political spheres, being filled with the most diverse content. Naturally, approaches to the formation of eco-education also fluctuate in a very wide range. Among them, as a starting point, we can conditionally single out the following “eco-education is considered as a component of the general educational process. Accordingly, the development of the basic (holistic) concept of eco-education and models of its practical implementation takes place in the context of reforming the entire field of education and on the basis of a new philosophy of science. The article substantiates the need to create an independent branch of education - eco-education - on the basis of a specially developed methodological platform that will clearly formulate the goal and objectives of environmental education, develop its conceptual and categorical apparatus, methodological and didactic tools, identify target groups, etc. Based on the consideration of modern management of eco-education in the EU countries, it is argued that global ethics, which prescribes the value bases of human existence in the socio-bio-sphere, subject to systemic inclusion in the educational process, is able to form value eco-behavioral stereotypes outside the system of specialized environmental education

Keywords: Eco-education, Environmental education, Sustainable development.

1 Introduction

At present, European institutions are faced with the challenge of remaining viable and efficient in the light of the “sixth and seventh wave” of EU enlargement. At the same time, with the undoubted success of integration, there are still many problems of managing an integrated economy and harmonizing the interests of the national EU member states. One of the most important and urgent problems of the European Union is the problems of environmental protection and ecological safety, therefore, the current trends in European development make us think about such complex theoretical issues as the quality of life of Europeans. At the level of national and international institutions, there was an awareness of the need for a centralized and structured environmental policy, the purpose of which is to reduce the scale of environmental pollution in the countries of the European continent through the introduction of stringent standards for all types of emissions and discharges.

The end of the twentieth and the beginning of the twenty-first century were marked by increased attention to the problems of the prospects for the development of mankind. On the basis of numerous comprehensive studies by various authors, the Club of Rome, and other international scientific organizations studying global development, it became obvious that the world has approached a milestone that requires a radical change in the value orientation of each person and humanity as a whole, compliance with the priorities of natural prerequisites in natural history development.

The most important event in the international life of the last decade of the last century was the conference on environmental problems and development, convened by the UN in 1992 in Rio de Janeiro. At this forum, a package of documents was adopted that defines the rights and obligations of individual countries in the field of production, environmental pollution, and the use of natural resources. This conference was the logical conclusion of a great deal of work carried out over the years by UNESCO and various UN commissions for the protection of the environment. The concept of sustainable development adopted at this conference, in essence, opens a new era in understanding the relationship between society and nature. Sustainable development is a self-sustaining, self-organizing process of the

balanced development of human society in harmony with the natural environment [10, 61, 66].

As human society develops, more and more interdependence and interdependence of the processes that occur in the “nature-man-society” system are revealed. The current environmental situation has brought to the fore the problems of interaction between society and nature, sharply raising the question of the role of environmental education in optimizing this interaction. Environmental education indirectly, but very actively influences the optimization of the interaction between nature and society.

Recognition of the importance and necessity of environmental education in our time has not automatically led to an adequate understanding of its philosophical, methodological, theoretical foundations. The main attention turned out to be focused mainly on such issues as environmental pollution, resource depletion, etc. These vital issues for society are often considered at the level of common sense, without using the appropriate scientific methodology [1-5]. But such an inefficient approach is hardly acceptable today. This circumstance predetermines the relevance and necessity of a special study of the role of environmental education in the formation of the ecological culture of society and in optimizing its interaction with nature.

Environmental education is a long-term process of educating the population of a rational attitude towards nature and resources. Eco-education smoothly turns into an ecological lifestyle, which is why it is so important and slow in time. But it all starts small, with the daily formation of knowledge, skills and good habits.

In the EU countries, the system of environmental education is built in such a way as to ensure wide contacts of the child with the environment and form knowledge about the unity of man, society and nature on the direct relationship of local, regional and global environmental problems with human activities. For example, in Germany, children, starting from kindergarten, are taught to take care of the environment in which they live: sort garbage, use less plastic and polyethylene, take care of plants and animals.

Unfortunately, at the EU level today there is no single generally accepted basis for the content of environmental education. There is no unambiguous, generally accepted definition and main goal of environmental education. Interpretations of the goal of environmental education vary from “training an environmentally literate person, the formation of a system of scientific knowledge, views and beliefs that ensure the formation of a responsible attitude towards the environment in all types of activities, “the formation of environmental consciousness” to environmental culture [6].

The study of the features of the relationship between environmental education and environmental culture and their role in optimizing the interaction between nature and society shows that it is very relevant in modern conditions [7, 8]. Comprehension of this issue is necessary in order to understand that environmental education will certainly help society get out of the environmental crisis.

2 Materials and Methods

The implementation of the research objectives involves the solution of a number of tasks, the main of which are the following:

1. Critical analysis of different points of view on environmental education. Determining one's own position in the conceptual understanding of the content of environmental education.
2. Study of the possibility of fundamentalization of environmental education in the effective formation of environmental consciousness.

3. Understanding the ways and means of forming the ecological culture of society as the goal of environmental education.
4. Identification of the features of the impact of environmental education on the optimization of the interaction between nature and society.

The study used the dialectical principles of cognition: consistency, structure, integrity, activity, etc. Achieving the goal and objectives of the study determined the need to use the methods of analysis and synthesis, induction and deduction, analogy, comparison, explanation, etc.

The study is based on the theory of unity, interaction and subordination of nature and society as distinct and interpenetrating formations, the data of modern natural science and social science, certain areas of ecology: general, biological, geographical, social, anthropological, as well as general theoretical provisions of cultural studies and pedagogy that contribute to philosophical understanding environmental problems and ways to solve them.

The materials contained in the article can be used in further research in the field of environmental policy, as well as general theoretical and practical problems of development, as well as problems related to the field of environmental education and political and administrative management [12, 13]. The main provisions and conclusions of the study can be used to ensure the sustainable development of the European Union. The theoretical significance of the study is determined by the fact that its materials and results can be used in further study and development of the problems of environmental education, determining its place and role in the formation of environmental culture, in optimizing the interaction between nature and society as distinct and interpenetrating formations.

3 Results and Discussion

Understanding the complex problems of environmental education in recent years has received coverage in socio-philosophical, pedagogical and other works [35-40]. Unfortunately, it is necessary to state the fact that in the presence of a large number of works on these problems, the role of environmental education in optimizing the interaction between nature and society as a holistic, relatively independent and developing process is not sufficiently defined.

In order to form an environmentally active personality in the process of environmental education, it is necessary: to acquire scientific knowledge; learn moral value orientations in relation to nature; to develop practical skills and abilities to preserve favorable conditions of the natural environment [23, 34, 47, 64].

The basis of all ecological disciplines is one or another idea of the ecological system and ecological approach. The ecological approach is an eco-oriented approach to the study of special spheres of reality – special ecosystems in which the “central” object and the “eco-environment” are qualitatively heterogeneous [15-18, 20]. Ecological interactions that are associated with an ecological approach and which are special (inter-level) eco-oriented interactions are the object of study of environmental sciences.

It is very important that environmental education has a single, common methodological basis, on the basis of which the study of all sections of ecology, including social, which should form the basis of socioecological education, would be carried out [9]. Social ecology is the science of the interaction of nature and society, with the aim of optimizing this interaction. General socioecology is an important basis for the formation of the ecological culture of society.

The cognitive component of environmental education, first of all, should include a general theory of ecology, which is based on an ecological approach, biological, geographical, social and anthropological ecology [22, 24-27]. Singling out global ecology as one of the sections of ecology is hardly advisable, since the

term “global” rather reflects the quantitative characteristics, the scale of the problems than their integrative nature, and is used in conjunction with the terms “regional”, “local”. In terms of its volume, the content of the cognitive component of environmental education coincides with the sphere of environmental knowledge, while this knowledge must be conceptually organized in a certain way for more effective assimilation in the educational process.

A scientific judgment about the world should not avoid valuable worldview conclusions. The results of the study of ecology are meaningless outside their cultural context [29, 30]. Their role is comprehended from the standpoint of a human perspective within the framework of a system of values determined by the need for co-evolution of society, man, and nature. Hence, the synthesis of intellectual and spiritual experience within the framework of education is very relevant.

The fundamentalization of environmental education allows generalizing knowledge in the form of certain conceptual constructions. This will provide a holistic, rather than fragmentary coverage of environmental problems [32, 33]. An ecological approach should become a methodological need and a necessity in order to obtain ecological knowledge, and the general theory of ecology should take its rightful place in the cycle of ecological disciplines.

In Scotland, environmental education is built on the interaction of the school as a single team and the local community. This allows students to understand the close relationships between the environment, society, the economy, and issues of social inequality [41-46]. All teachers and school leaders are involved in the educational process, environmental responsibility is supported by the school culture and the physical environment (building, surrounding area, rules of conduct). Every day part of the classes takes place in direct contact with nature (outdoor learning) [11, 48].

The result of environmental education is achieved through the synergy of the efforts of the family, society, scientific and educational institutions, the media, cultural institutions, business and, most importantly, the state. It is this open model, when everyone cares about environmental education, that is adopted in Sweden. For comparison, in the homeland of Greta Thunberg, the rate of environmental concern is 85% [31]. Back in the 1970s, topics related to nature conservation were included in the compulsory school curricula. Then came the Swedish National Environment Project. One of its functions is the preparation of new teaching aids and recommendations for teachers and students.

In the 1990s, Sweden began to seriously attend to the problem of waste recycling. Today, the first generation of Swedes has already grown up in the country, who “have never seen a single garbage can in the kitchen” [66]. In Swedish kindergartens and schools, children sort their own garbage, learn how to make compost, and go on excursions to sorting stations.

Commercial companies are also involved in this process. Swedish auto giant Volvo has released a children's book on plastic pollution in the oceans [49-52]. This is the story of a boy who goes on a journey to find out where the ocean has disappeared. It motivates readers to make a promise to change the environment for the better, keeping young Swedes on the green agenda.

A feature of the Swedish model is that environmental education is continuous. It begins in the family, is supplemented in kindergarten, school and university, and continues through all professional activities [54-59]. The idea of prioritizing environmental knowledge is reflected in the Swedish Environmental Code - adopted in the late 1990s, it replaced more than 15 laws dealing with various environmental issues. Demonstration of a sufficient level of environmental knowledge is a priority principle of the Code – before starting economic activity in any region of the country, it is required to demonstrate awareness of environmental conditions and the impact on it [60].

In environmental education and enlightenment in Germany, the emphasis is on the fact that the child forms his opinion about the problem based on personal experience. In Germany, there is no single concept of environmental education, approaches and forms are diverse [62, 63]. In each of the 16 federal states, there is a provision on the legislative level for the continuity of environmental education and upbringing from the earliest preschool age. It applies to schoolchildren, students, and is also applicable to other categories of the population.

In Germany, back in the 1980s, the Ecology and Education program was adopted, which became part of the educational process of all schools. For example, the concepts of teaching and educating schoolchildren in the field of environment and nature (Natur- und Umweltpädagogik) are based on the transfer of knowledge about nature and environmental relationships based on practical experience [9, 19].

Under the guidance of teachers, students independently explore, observe natural objects and phenomena in the urban environment. The focus is on the relationship between man and nature, the consequences of environmental impact (both negative and positive) [65]. This is how the norms and rules of environmentally responsible behavior in relation to nature and our own future are formed. Much attention is paid to how to properly collect and sort household waste before it is sent for recycling.

In France, environmental education has been carried out since the 1970s. Back in 1993, the Ministry of the Environment and the French Ministry of National Education signed a cooperation agreement. The document clarified that the sustainable development of the country is inextricably linked with the health of an individual citizen. That is why it is important to tell the public about this connection. In 2004, the authorities created an environmental charter. A year later, in 2005, it was included in the Constitution of the Republic [28]. The need for environmental education in all educational institutions is now enshrined in the fundamental law of France.

Education begins as early as elementary school, where children are introduced to different types of materials. In secondary school, students study environmental issues through mathematics, physics and chemistry. In high school, questions of a scientific approach to human life are dealt with through "thinking about the relationship between people and the environment" [53]:

- In the lessons of the French language and in the humanities – a look at nature through authors and artists of different eras;
- On history – focus on climate change;
- On natural science subjects – reflections on life cycles in nature, environmental problems.

In high school, they pay attention to climate and environmental issues. The introduction to this program emphasizes that students understand the main challenges that humanity will face in the 21st century: the environment, sustainable development, resource and risk management [9].

In the historical geography program, students are introduced to "climate change under the influence of megacities" [13]. Here education considers individual and collective responsibility for environmental problems.

A very systematic and thoughtful environmental education is organized in Slovakia. "The Ministry of the Environment supports non-formal educational activities in accordance with the Sectoral Concept of Environmental Education up to 2025 (available in Slovak language). The overarching goal is to create an integrated system of environmental education and awareness raising within the environmental sector, focusing on diverse target groups by using innovative tools and respecting the principles of sustainable development.

Educational activities are provided throughout the whole country by the organizations instituted by the Ministry of Environment:

- Slovak Environment Agency, including its Center of Environmental Education "Dropie"
- State Nature Conservancy of the Slovak Republic
- National Zoological Garden Bojnice
- Slovak Museum of Nature Protection and Speleology
- Slovak Mining Museum
- Slovak Water Management Enterprise and others.

Organizations Instituted by the Ministry of Environment prepare a number of events, which are focused on raising awareness in the area of environmental protection and its components, as well as the field of practical environmental education with using interactive elements. Professional conferences, seminars for different target groups as well as methodological days and accredited continuous education for teachers are also organized. Last but not least, organizations Instituted by the Ministry of Environment are engaged in editorial, publication and promotional activities" [53].

In Slovakia, environmental education is organized and managed in the context of ethics and ethics education. This ethical context includes the following key (fundamental) elements:

1. Noospheric development puts a human in the center of attention, who should have the right to a healthy and fruitful life in harmony with nature, both now and in the future. The transition to noospheric development requires the creation of a new world order aimed at ensuring coordinated actions of the entire world community to prevent an ecological catastrophe, the need for cooperation on a planetary scale, including the development of procedures and mechanisms that can ensure the preservation and development of human civilization as a whole. At the same time, the problem of the survival of mankind should become a priority among other national problems.
2. On this path of development, it will be necessary to form a new worldview of people and replace the priority of consumption with the priority of improving the overall quality of life. The creation of a new system of values in society will contribute to the formation of rational structures of production and consumption, the achievement of a higher living standard of the population by changing the way of life and reducing the consumption of natural resources.
3. Sustainable development is a way of life of the world community, in which the main task is to ensure normal conditions for the entire population of the planet without infringing on the interests of future generations. The concept of sustainable development was born among ecologists, and according to the ecological approach, it is such a development that does not take the system beyond the limits of the economic capacity of the biosphere. It does not cause in the biosphere the processes of destruction, degradation, the result of which may be the emergence of conditions that are fundamentally unacceptable for humans.
4. The concept of sustainable (protected) development (sustainable development) is seen as an alternative to unbridled economic growth. The concept of sustainable development and environmental education is reduced to the definition and search for the prerequisites and conditions for survival and the indefinite existence of the development of mankind on the basis of a new system of values, the creation of a culture adequate to the nature of the world and the essence of man. One of the necessary conditions for the transition of modern civilization to a sustainable development model is the dominance of ecological culture in society.
5. Recognition of the complexity of the laws of interaction between society and the environment. The current trend in the field of synergetics is an attempt to extrapolate the synergetic paradigm to social processes and understand the

need to study nature in all its diversity of relationships with humanity. The task of understanding the environment and educating a moral attitude to nature on the basis of the information received is one of the central ones in global ethics. The assimilation of the principles of global environmental ethics through the mechanisms of education is the main thing in the survival strategy based on the principles of sustainable development.

The adaptation of these universal requirements to the specific conditions of human activity and economic entities is an important condition for the effectiveness of ethical mechanisms for regulating everyday actions.

It seems that environmental education in secondary schools should be based on these provisions of global environmental ethics. In part, this is already being implemented by European pedagogical science. Thus, the proposed grounds for educating an ecological worldview are: the primacy of the whole in relation to the particular and the inability to derive the whole from the part; ecosystem organization of life and synergetic nature of ecosystems; the significance of the individual efforts of each person for macrosocial processes and, as a result, the high responsibility of the individual for actions and actions, to a large extent correspond to the principles of global environmental ethics and the understanding of personal responsibility in it [64].

The key to environmental education based on global ethics is the explanation of the ideas of the ecosphere and co-evolution, which act as a global model of the future civilization. At the same time, the development of the biosphere into the noosphere excludes any forceful solution of problems in the form of wars or aggressions, and implementation is possible only on the condition that all of humanity will intelligently manage this process. Thus, in the light of the ideas of global ethics, the following provisions can become environmental "cross-cutting" in the content of a number of educational programs:

1. An ecological imperative that defines the boundaries of what is permitted, i.e. system of norms (prohibitions and prescriptions), which follows from the value orientations that are fundamentally different from the dominant consumer ones.
2. Integration of economic, ethical, and environmental knowledge, contributing to the formation of a holistic understanding of the interaction between nature and society, a correct understanding of environmental relations that ensure the environmental safety of life and production.
3. An interdisciplinary approach in building an axiological basis for the economic and everyday behavior of a person and business entities.

The axiological basis of global ethics in education is the value of future generations, which is determined by many researchers, including A. D. Ursul, according to two main features - anthropocentric and biospherocentric: "this is why it seems appropriate to consider sustainable development as a strategy for survival and ongoing development civilization as a whole and a separate country in terms of preserving the natural environment and, above all, the biosphere. It is quite clear that we are talking about the formation in the future of a socio-natural co-evolutionary system capable of resolving a lot of contradictions that are manifested in our time" [21].

4 Conclusion

Environmental targets are characterized by a high degree of uncertainty and many associated factors, they often contain a contradiction between economic rationality and sustainable development and have delayed results. But their main difficulty is related to the need for practical action at the individual and collective level. Therefore, environmentally responsible behavior is closely related to motivation and specific actions ("action competency").

Environmental competencies are based on knowledge. Their spectrum unfolds in the plane of relations "man – nature": how these relations were built in the past, in the present and will be built in the future. This is knowledge from the field of natural, social and human sciences.

Environmental education should take a holistic approach that considers the environmental, social, cultural and other aspects of specific problems. Therefore, it is characterized by interdisciplinarity [14]. The result of environmental education is achieved through the synergy of the efforts of the family, society, scientific and educational institutions, the media, cultural institutions, business and, most importantly, the state. In the absence of a systematic approach to environmental education at the state level (as is observed in Ukraine), public projects play the main role.

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