

## On The Importance of Ecology and Ecological Education in Modern Conditions

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### ABSTRACT

The specific features of environmental science and environmental education are analyzed in terms of the formation of an environmental outlook among the population and the preservation of the natural environment as the habitat of the human race.

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### Introduction

Why, of all the natural sciences, ecology has received so much attention (especially over the past few decades). The answer to this question is probably contained in the statement of the Russian scientist N.F. Reimers, who argued that “ecology is the pinnacle of natural science (megaeology), around which other scientific disciplines are concentrated that respond to pressing problems humanity and the threat of ecological crisis” [1,2].

Secondly, ecological phenomena are closely related to the fundamental sciences and are of an integrative, complex and complex nature, which makes it possible to use the enormous scientific potential of all sciences (humanitarian, social, technical and natural) not only for a better understanding and disclosure of the essence, scale and nature of ecological problems of our time, but also to use the intellectual resource, the capabilities and abilities of a huge army of scientists and intelligentsia, specialists working in various fields of science and industry, to prevent environmental disasters, crises and disasters and preserve nature for future generations of mankind in good condition [3-5].

Thirdly, ecology is a science that bears an ideological character, and scientists of all specialties can and should contribute to the formation of an ecological worldview.

By preserving nature for future generations, we thereby preserve ourselves and our future, and what can be nobler than this desire, above this goal. The ecological worldview preaches first of all this thesis, this thought, this noble desire. Nature must and can be used, but this use of nature must be reasonable, rational, optimal, within acceptable frameworks and limits, taking into account its potential and the laws of development of nature itself, the ability of nature to self-renewal, reproduction, self-purification and self-healing,

the ability of nature to restore that, what we take from her, we take from her. It is necessary not only to take from nature, but also to return its debts to it, take care of it, provide it with reasonable and feasible help, heal the wounds inflicted by man. This is the essence of the ecological worldview, which should become the core of ecological education and upbringing of the population in all four levels of its organization (preschool, school, university and postgraduate). Therefore, we can assume that ecology and environmental science and environmental education are fraught with a huge creative, spiritual and educational potential in terms of preserving the natural environment as the habitat of the human race with its mind and the noosphere as a whole. In essence, we are talking about the sustainable and stable development of human society, which has become an objective requirement of the time. The fact is that the socio-economic development of society during the 20th century was mainly focused on rapid rates of economic growth and therefore caused enormous and irreparable damage to the natural environment. Humanity is faced with a major contradiction between the growing needs of society and the limited capabilities of the biosphere, unable to meet these exorbitant human needs and ambitions. The intensive path of development of all mankind on our planet has become really impossible, since the wealth of nature and its possibilities for self-healing turned out to be not unlimited. The planetary impact of man on the natural environment has had a devastating effect on the biosphere and man. There is a real threat to the vital interests of future generations.

Improvement of the quality of life of people should be ensured within those limits of the economic capacity of the biosphere, which do not lead to the destruction of the natural biotic mechanism of environmental regulation. It is impossible to switch to sustainable development of society if people maintain an irresponsible and dismissive attitude to the natural environment, and if we do not ensure the environmental safety of not only our country, but also

global environmental safety. At the same time, environmental safety must be considered as an important systemic element in the general system of state security, the multilevel elements of which are constitutional, defense, economic, political and information security.

Ideally, the environmental safety system should have a global (planetary) character. In principle, the documents of the conference in Rio de Janeiro (1992) are steps in this direction [6,7].

The ecological doctrine of Russia (2001) will also contribute to the problem of harmonizing the interaction of man and nature, the formation of the sphere of reason (noosphere according to V.I. Vernadsky), when the spiritual values and knowledge of a person living in harmony with the surrounding natural world will become the measure of national and individual wealth environment. In addition, the ecological doctrine of Russia will make it possible to use and increase the potential of ecologists, whose ideas would be in demand by society and the state. The ecological doctrine will become a social factor consolidating the Russian society on environmental protection and reducing the risks of global technical and man-made disasters. The ecological doctrine is designed to outline ecological guidelines for the country's economic development in the long term.

Optimization of relations in the system man - the natural environment should be based only on the knowledge of the development of the natural environment, on the one hand, and on the other, on the knowledge of the development of the human society itself. This is the main and main essence of social or political ecology as a science.

The global, universal nature of environmental education was first noted in the program "Man and the Biosphere", adopted in 1968 in Paris by the UNESCO Intergovernmental Conference on the Rational Use and Protection of Biosphere Resources. The First Intergovernmental Conference on Environmental Education, convened by UNESCO jointly with UNEP (United Nations Environment Program) in 1977 in Tbilisi, adopted a comprehensive strategy for the development of environmental education at the national level and made more than 40 specific recommendations for improving environmental (environmental) education in relation to different stages of education and different categories and groups of the population [8]. International cooperation in the field of environmental education continued in the capital of Kenya, Nairobi (1982) and in Moscow (1987).

The strategic task of UNESCO is the creation of a global network of education, and an important factor in solving environmental problems, according to the then Director-General of UNESCO F. Major, should be Global Education, which provides for putting environmental issues at the center of all curricula, starting with preschool institutions and ending with universities, teacher training and management [9]. In addition, UNESCO calls for the integration of universal and environmental education. Thus, the understanding of the universal significance of environmental education in society was formed back in the 70s - 80s of the last century [8].

The main purpose of environmental education is, first of all, the formation of environmental consciousness and environmental outlook among the population, and this most important task should be assigned to the main and main carrier of collective intelligence, that is, to the intelligentsia.

Today, humanity is clearly aware that the ethics of man's relationship to nature is as important as the ethics of social relations. Environmental education and upbringing should contribute to the formation of an active, environmentally moral life position among all citizens of the country. It is necessary to teach and educate everyone to respect nature - toddlers, schoolchildren, students, businessmen, housewives, presidents of all holdings and companies, mayors of small and large cities and governors, as it is successfully carried out in our neighboring country of Japan, where ecological thinking has become part of ethical views of the whole nation. Therefore, we, the Russians, need to take advantage of the positive practice of environmental protection in countries such as Japan and the United States. In these countries, three quarters of the population is willing to sacrifice their own interests if it helps to improve the state of the environment.

Environmental protection measures, if organized and carried out competently, with knowledge of the matter, will help, if not significantly improve, then at least keep the quality of the environment at the current level. If nothing is done in this direction, then, according to many experts, by 2030 - 2050 the ecological situation in the world will become irreversible and a complete degradation of the natural environment of our planet should be expected.

In Russia, the law "On environmental protection" was adopted in 2002, section 13 of which is devoted to environmental education, education and the formation of environmental culture. In order to improve the environmental culture of society and the professional training of specialists, this law establishes a system of universal comprehensive and continuous environmental education and training, covering the entire process of preschool, school upbringing and education, professional training of specialists in secondary and higher educational institutions, improving their qualifications using funds mass media. Moreover, this Law provides that managers of all ranks and officials, as well as ordinary citizens who have a harmful effect on the environment and human health on the territory of the Russian Federation, must have the necessary environmental training, which is taken into account when they are appointed to this position, when their certification and recertification.

It is customary to divide environmental education into the following three levels: 1) cognitive or cognitive; 2) affective or emotional; 3) conative or active. The essence of each of these levels boils down to the following [8].

- the formation of a system of knowledge about the relationship between man and nature, understanding that man is not a master, not a king of nature, but only a part and a child of nature and a product of the evolution of nature (cognitive or cognitive level);
- the formation of a system of environmental values, emotional, responsible, careful, loving attitude towards nature and man as a part of nature (affective or emotional level);
- the formation of an active approach to the protection, conservation and restoration of nature in accordance with the principle of "think globally, act locally" (conative or active level).

According to the definition of Fedorov M.P., Shilina M.B., Gomoyunova K.K et al., ecological thinking should be understood as "a system of views on the use of natural resources from the position of harmonious interaction of living organisms (including

humans) with the environment [10]”. The basis of ecological thinking, according to the same authors, should be an ecological imperative, that is, “a clear understanding of ecological problems and a conviction in the personal responsibility of everyone for the state and future of the biosphere and humanity as a part of it. An integral part of the environmental imperative is the recognition of the need for sustainable development”.

This, in our opinion, is extremely clear and concise. While fully agreeing with this definition, we, nevertheless, want to make our own contribution and offer our vision of some aspects of the problem, to outline a more or less detailed plan of measures that, as it seems to us, deserve serious attention in this matter.

The development or education of rational ecological thinking in the overwhelming majority of the country’s adult population should, in our opinion, include the following activities and pursue the following goals:

- Instill in the entire population (starting with preschool children) love and respect for nature, which is the main source of life and existence of people;
- Explain that nature is the custodian of all types of resources on Earth (raw materials, energy, recreational, spiritual and aesthetic) and therefore should be used wisely and economically;
- explain that a person is only a part of (the most reasonable, highly intelligent and highly organized) nature and therefore must live in harmony with it, in full agreement with the laws by which nature itself develops;
- Remember constantly that nature not only needs to take, but it also needs to return (pay off) debts;
- Do not forget the statements of genius people, like Galileo, who argued that “for every imaginary victory over nature, she will take revenge on people for a long time,” as evidenced by the bitter examples of drainage of swamps, deforestation, shallowing of the Aral Sea, etc.;
- To form in people an ecological culture, which should be an obligatory component of a common human culture;
- Show that a person’s life expectancy depends not only on a high level of civilization, but also on a high level of ecological cleanliness of the environment;
- The implementation of a course for the greening of education and upbringing and all types of modern production of goods and industry;
- Use the educational resource of ecology as a school subject with a unique feature, which is the absence of any kind of ideological dogmatics V. Ermolov [11].
- Keep in mind that environmental disasters are primarily due to a lack of environmental knowledge in handling nature and are not at all inevitable consequences or costs of industrialization and human civilization;
- To convince and realize that it is immoral to destroy nature, pollute it, cause damage and wounds to nature, as well as damage the health of another person;
- Finally assimilate for themselves that only highly environmentally friendly and high-tech production is both highly economical and highly aesthetic;
- Keep in mind that the assimilation capacity of nature is not unlimited;
- Love and respect for nature should be an inner conviction of a person, logical by him and scientifically grounded, and not carried out out of fear of punishment, fine or condemnation by people;

- For poets, artists, writers, composers and singers to glorify the beauty of the nature of their native land and use this material in the process of environmental education and education.

Thus, ecology, taking into account its enormous spiritual and cultural potential and educational resource, should and can become an important component of general education and upbringing of the population at all levels.

And, finally, a very important conclusion that can be drawn from this article: if on the territory of each state there are enough people (let’s call it the “critical mass” or the optimal number of employees), who think environmentally competently, and most importantly, environmentally competently managing and acting, then environmental disasters, crises, and even more environmental disasters can be prevented or avoided. For example, knowing the causes and consequences of global warming of the Earth’s climate, or pollution of the World Ocean, or destruction of the ozone screen over the Earth, or the consequences of acidification of the natural environment, environmentally literate people will never allow this and we think they will definitely accept balanced, reasonable, competent and optimally acceptable solutions. We think that reason in this case will take over the rest of the arguments, no matter how noble they may seem at first glance, because living only for the sake of enrichment or the ever-increasing satisfaction of one’s needs should not be an end in itself for a person, especially for this predatory and without looking back at tomorrow to exploit nature, leaving the dirty and poisoned Earth for future generations of mankind [12].

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