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## PRINCIPLES OF TEACHING ENVIRONMENTAL EDUCATION IN SENIOR SECONDARY SCHOOLS

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## ПРИНЦИПЫ ЭКОЛОГИЧЕСКОГО ОБРАЗОВАНИЯ В СТАРШИХ КЛАССАХ СРЕДНЕЙ ШКОЛЫ

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*Abstract.* This article examines the essence of modern ecology, the goals and objectives of its teaching, the development of environmental education, and its principles. It emphasizes the importance of fostering a healthy attitude toward the environment and adhering to the principles of efficient use of natural resources. The main goal of this work is to contribute to the development of an environmental education program that will shape the younger generation, which plays a vital role in environmental protection and ensuring ecological balance. The article also examines the development of a positive attitude toward the environment and adherence to the principles of rational use of natural resources. At the same time, it focuses on the urgency of finding new approaches to education in the modern era, amidst the environmental crisis. The role of environmental education in the sustainable development of society, the development of environmental awareness, and a heightened sense of responsibility is analyzed in detail. The article emphasizes the importance of instilling environmental awareness from an early age and notes the need for comprehensive and targeted approaches in the education system in this direction. At the same time, the possibilities of studying and applying environmental education models based on international experience are considered. The importance of the unity of education, awareness-raising, and practical activities to achieve effective results in the field of environmental protection is emphasized. It is also noted that environmental education should not be limited to theoretical knowledge alone but should be supported by practical activities. Engaging students in environmental projects and encouraging their participation in initiatives aimed at protecting nature has a positive impact on the development of their environmental worldview. At the same time, strengthening teacher training and the use of modern teaching methods and technologies are considered important factors in improving the quality of environmental education.

*Аннотация.* Рассматриваются сущность современной экологии, цели и задачи ее преподавания, развитие сферы экологического образования и его принципы. Особо подчеркивается важность формирования бережного отношения к окружающей среде и соблюдения правил рационального использования природных ресурсов. Главная цель работы — внести вклад в разработку программы экологического образования, способствующей воспитанию молодого поколения, играющего важную роль в охране окружающей среды и обеспечении экологического баланса. В статье также рассматриваются актуальность поиска новых подходов к образованию в современную эпоху в условиях экологического кризиса, роль экологического образования в устойчивом развитии общества, формировании экологического сознания и повышении чувства ответственности. Подчеркивается важность привития экологических знаний с раннего возраста и необходимость применения комплексных и

целенаправленных подходов в системе образования. Одновременно рассматриваются возможности изучения и применения моделей экологического образования, основанных на международном опыте. Отмечается важность единства образования, повышения осведомленности и практической деятельности для достижения эффективных результатов. Экологическое образование не должно ограничиваться теоретическими знаниями, а должно подкрепляться практикой: вовлечение учащихся в экологические проекты и поощрение их участия в природоохранных инициативах положительно влияет на формирование их мировоззрения. Укрепление профессиональной подготовки учителей и применение современных методов обучения считаются важными факторами повышения качества образования.

*Keywords:* environmental education, environmental knowledge, environmental culture, environmental education, environmental awareness, environmental problem.

*Ключевые слова:* экологическое образование, экологические знания, экологическая культура, экологическое образование, экологическая осведомленность, экологическая проблема

After gaining independence, the Republic of Azerbaijan, like other states, quickly took important steps toward creating a free, democratic education system. During this period, all areas of education began to develop, including environmental education. When discussing environmental education, it is important to consider why so much attention is being paid to it. Currently, there are 8.3 billion people living in the world who are cutting down forests, extracting minerals, producing energy, destroying soils, and creating huge landfills. Therefore, there is a need to provide the population with extensive information about the principles and content of ecological education [1].

One of the most important factors contributing to the maintenance of balance in nature is ecological education. Therefore, it is necessary to foster an ecological culture and environmental responsibility among the population. Ecological education teaches people how to use natural resources correctly. At the same time, it sets a proper direction for human interaction with the environment. To maintain the balance of living beings on our planet, special sections dedicated to the environment have been incorporated into ecological education. Why is so much attention paid to environmental education? It is ecological education that forms an ecological culture in people and makes it possible to treat the environment more responsibly. Proponents of peace around the world, realizing the importance of environmental education, are creating and financing educational and training programs on a wider scale throughout our planet. They are seeking sustainable ecological methods and, in cooperation with developed countries in Europe and America, are making environmental education a key component of their activities.

The main purpose of the article is to help develop an environmental education program that could assist the younger generation, which plays a key role in protecting the environment and ensuring a proper ecological balance, as well as supporting the activities of peace advocates around the world. Regardless of where we work, whether in primary or secondary schools, knowledge helps us in our environmental activities. Despite opposition to the inclusion of ecological education in the curriculum, we should benefit from this knowledge and further improve the scientific information included in the ecological education process [2].

It is established that ecological issues are among the most urgent problems in our country, and for their solution, it is necessary to establish connections with the global community, meaning they should be considered a key component of ecological education. Contradictory opinions about the state

of the environment, information regarding the consequences of environmental degradation, and their role in educational problem-solving are interesting topics for discussion and debate. However, it would be wrong to assume that ecological education alone will completely change people's thinking. We hope that ecological education will help the population think more rationally, start solving problems, take action, evaluate options, and draw conclusions.

Human activity represents a serious threat to the existence of life on our planet. Many actions remain far from human values. The destruction of nature, living beings, and natural resources stems mainly from ignorance, low moral principles, and greed. It is not difficult to understand the harsh attitude toward nature in the past, when people were ignorant and inexperienced. However, in our modern era, highly developed technologies and sufficient knowledge allow us to treat nature more carefully and take better care of it.

We must consider that soil, water, air, and other components of nature do not belong only to us; we have borrowed them from future generations, and we must return them clean and healthy. In this era, when science and technology have created miracles, we must be more responsible. Our abilities and obligations must complement each other. If we do not do this, we will lose our humanity. We believe that if we all love and protect the environment, the world will return that love to us [3].

Ecological education helps us understand the differences and contradictions within a population and demonstrates the possibility of directing these tensions toward solving ecological problems. Ecological education is both theoretical and practical. Through environmental education, even at school age, we learn to plant trees, use pesticides, and achieve high crop yields while minimizing environmental harm. In short, ecological education fosters ecological habits, responsibility, and culture in people.

The goals and influence of ecological education are consistent worldwide; for example, they include protecting and improving environmental quality, as well as demonstrating solutions to emerging environmental issues. Ecological education is regarded as an informative educational principle aimed at raising students' knowledge levels. Through it, people learn about the primary causes of global warming, waste management characteristics, and global environmental problems. Consequently, people strive to understand the future of our planet and how to address these ecological challenges [4].

Environmental education provides an opportunity to understand these problems, strengthens confidence and faith in people, forms personal values, and develops positive qualities, such as a more careful attitude toward nature, while stimulating individuals to solve environmental problems. The development of ecological education has accelerated significantly since the middle of the last century. This process became more active after the UN International Conference on the Human Environment, held in Stockholm in 1972. The Swedish government recommended that the UN create an international environmental education program. Consequently, UNESCO began funding and supporting the organization of symposia and conferences dedicated to these initiatives. Beginning in 1975, representatives from various countries gathered in Belgrade, the capital of the former Yugoslavia, to define the goals, objectives, and essence of environmental education. Subsequently, in 1977, representatives from 60 countries, including the United States and many European nations, discussed and endorsed the program developed in Belgrade at an international conference in Tbilisi, Georgia. Representatives of these two international forums ratified the following definition of environmental education: it is an educational process aimed at informing the world's population about the environment and solutions to its problems, as well as developing environmental attitudes, habits, beliefs, and responsibility. It fosters individual and joint activities to address environmental problems [5].

When defining the characteristics of environmental education, five main principles can be identified: awareness, knowledge, attitudes, skills, and participation. Awareness helps people perceive environmental issues, gain a deeper insight into them, and develop the ability to distinguish between various environmental factors. It also enables individuals to monitor processes and apply acquired skills in new contexts.

Knowledge allows individuals to understand the structure of nature and human interaction with it, as well as how environmental problems arise and how they can be solved.

Attitudes instill a sense of concern for environmental processes and responsibility toward nature, fostering a caring disposition.

Skills teach individuals to identify environmental problems, analyze them accurately, gain practical experience, and evaluate their own role in addressing these issues.

Participation involves applying acquired knowledge and skills to solve environmental problems. This creates a foundation for active engagement and eliminates apathy. Ultimately, implementing these principles facilitates a deeper understanding of environmental education.

One does not need to be a scientist or professional to promote environmental education. As it is not limited to a single subject, there is no need for concern. To effectively explain or grasp the environmental education system, individuals must first develop their own worldview, knowledge, habits, and culture. A variety of educational methods can be used to promote environmental protection, with the primary goal being to instill a sense of responsibility. Success requires identifying effective methods, fostering personal development, and involving people in solving environmental issues to enhance the quality of environmental education [6].

Currently, various forms of environmental education exist in global educational systems and programs. In some systems, environmental education is carefully integrated into the curriculum. In this approach, the main goal is to bring environmental awareness to the forefront, ensure its integration, and guide teachers of all disciplines in this area. When implementing the educational process, it is essential to convey that environmental knowledge encompasses more than just ecology.

In other educational systems, environmental education begins with fundamental concepts and gradually expands. In some countries, ecology is taught as a standalone annual subject. In such cases, the primary focus is on accumulating environmental knowledge while simultaneously addressing environmental issues and the rational use of natural resources [7].

#### The First Law of Environmental Education:

It is well known that since the beginning of time, conscious humans have attempted to alter nature at will and have achieved significant success. Today, artificial systems created by humans sometimes look even more beautiful than those created by nature. However, no matter how beautiful human-created ecosystems may be, they cannot be considered separate from nature; there must be a constant connection between these artificial systems and natural ecosystems.

Curricula for environmental education should be fully dedicated to key issues and include experiments on natural ecosystems. One of the goals of environmental education is to develop students' critical and creative thinking. A key factor is developing students' skills in accurately assessing the environment, natural resources, and ecosystems. This habit, cultivated as students mature, will be highly beneficial for them.

This is beneficial both economically and ethically. The better a person is able to evaluate everything correctly, the more they will understand the value of each thing. This is crucial for environmental protection. Environmental education will be very useful for students, helping them to build a wiser future and improve their lives and lifestyles. An environmentally conscious person will always strive to improve their own life and the lives of others, and will always strive to lead a healthy lifestyle. At the same time, such a character will also instill a sense of pride.

In addition, every person who has received environmental education and participates in environmental programs aimed at improving the state of the environment will feel more useful to society, and these feelings will stimulate them to be more active. Teachers involved in environmental education can educate not only students but also their parents. Students share the environmental knowledge they acquire at school with their parents, thereby educating them. At the same time, parents who learn about the environment become more active and are encouraged to engage in such activities. Environmental problems are resolved through collaborative action [8].

When we delve deeper into the principles of environmental education, it becomes clear that there is a connection between environmental development and economic stability. In this context, the following question arises: what is the connection between environmental development and economic stability? People are beginning to exploit natural resources intensively to make money. However, it has been established that natural resources must be used very carefully. It has even been established that in countries where drinking water is scarce and food is difficult to obtain, sustainable development can be achieved through the highly efficient use of natural resources. One of the most important topics in environmental education is the connection between a healthy environment and a healthy economy. Because these topics, which serve the highest goals of environmental education, were not previously taught, some countries were forced to face environmental crises. The former Soviet Union is a case in point. In the Soviet Union, the principle of fulfilling state plans at any cost caused enormous damage to the environment. Since economic interests always dominated socialist society, the economy suffered greatly as a result of these plans. Therefore, modern environmental education must be structured so that economic interests and the maintenance of a healthy environment develop in parallel.

Previously, the main ideas of environmental education were aimed at understanding the environment—that is, people's understanding of the world around them and the essence of natural processes. Teaching environmental education at this level allows students to understand natural processes. Students gain insight into the essence of phenomena through direct contact with the natural environment. This principle of environmental education is somewhat similar to the study of natural science phenomena. In many countries, environmental education in this form was present in the curriculum until the 1970s. Thus, it can be noted that understanding the nature of environmental phenomena and collecting information about them is a key component of environmental education [9].

One of the main principles of environmental education is the development of environmental responsibility in students. Those who possess this responsibility have positive goals and behaviors, and their environmental culture is highly developed. Such people are easily engaged in solving environmental problems, and they always prioritize environmentally sound thinking in their activities.

Thus, every teacher working in environmental education can contribute to the development of a healthy lifestyle in society by influencing their students throughout their lives. They can participate in solving local, national, and sometimes global environmental issues together with their students, not only through education but also through various joint activities. They can, through their own initiative, raise many environmental issues to the international level.

Many countries suffer from environmental problems. Examples include European nations such as Hungary. Environmental issues in this country include water pollution and land degradation. Consequently, specialists in the country decided to address these issues within schools, non-governmental organizations, and local communities. They incorporated environmental topics into their lessons. Long-term studies have been conducted on strategies to address these challenges, revealing that active environmental education is essential. Such curricula should offer solutions to the

specific problems identified [10]. To develop an effective environmental education program, one must consider local, regional, and global issues. These environmental challenges can be categorized and compiled into specific lists. While we may already possess information regarding these issues, we can refine our understanding through observation and expert interviews. Natural resource specialists, public figures, university scientists, researchers, and international environmental groups can provide guidance. When compiling a list of environmental problems, it is also worth noting the misuse of natural resources, which can be categorized by severity [9, 10].

Depending on a country's geographic location, natural resources, and geopolitical situation, this list can be further refined. For example, it could include countries located on ocean coasts, where problems with marine ecosystems can be highlighted. Similarly, countries located in desert regions can be included. When assessing environmental problems, it is important to analyze their causes, which may include environmental, social, and economic factors. In some cases, the causes of any given environmental problem can be quite diverse, and addressing these issues requires taking this complexity into account. It is also worth noting that many members of society can assist in this work, as everyone can offer valuable insights into the negative environmental impacts that have arisen. The solution to an environmental problem also depends on the severity of the issue and the resources available. When assessing the environmental situation and developing an educational program, it is necessary to consider who can help solve these problems. We need to be able to identify such people in advance. Obviously, those in schools are considered knowledgeable in this area, but we can also establish connections with other members of society and engage a variety of people.

Table

PROBLEMS OF EASTERN EUROPEAN TERRITORIES:  
CLASSIFICATION BY GROUPS

| <i>Sources of waste</i>                                                                                                                                                                                 | <i>Natural resources</i>                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Air Pollution: Smoke, Ozone Depletion, Acid Rain                                                                                                                                                        | Forests: Deforestation for fuel, Deforestation for timber, Deforestation for agricultural land, Deforestation for pasture |
| Water Pollution: Hazardous Waste Discharge into Water, Wastewater - Wastewater Problems, Heavy Metals, Irrigation Water (Drainage Water), Water from Landfills, Water Polluted by Neighboring Countries | Soils: Erosion problems, Radioactive contamination, Irrigation, construction                                              |
| Solid Waste: Landfills, Waste Incineration in Landfills, Plastic Equipment Waste, Hazardous Waste Storage Facilities, Rubber Incineration                                                               | Wildlife: Hunting, Habitat disturbance, Species extinction                                                                |
|                                                                                                                                                                                                         | Water: Waste, Drought                                                                                                     |
|                                                                                                                                                                                                         | Energy: Coal, oil, gas, Energy sources                                                                                    |

They can play an effective role in achieving our goals. Non-governmental organizations are an example of this. People working for these organizations can help us jointly address existing environmental issues. To achieve this, influential people in schools should actively engage in building relationships with government officials. In conclusion, it should be noted that the primary goal of ecology education is to familiarize the population with the environment, developing environmental knowledge, habits, environmental culture, and responsibility. It is also important to develop additional skills in students. Therefore, continuous environmental education and awareness-raising are essential.

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