



MODERN METHODS OF FORMING ECO-LITERACY AMONG STUDENTS IN THE PROCESS OF MODERNIZATION OF ECOLOGICAL EDUCATION

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ABOUT ARTICLE

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Abstract: This article discusses the theoretical-methodological foundations for forming eco-literacy in students during the modernization of ecological education. It examines the pedagogical-psychological characteristics of modernizing ecological education, which foster eco-creativity, eco-responsibility, and competencies in eco-literacy that influence the relationship between nature and humans. Additionally, it analyzes contemporary methods for developing eco-literacy in students through the modernization of ecological education.

INTRODUCTION

Legislation on environmental protection is evolving and improving in Central Asian countries, with ongoing efforts to join international conventions, treaties, and agreements that guarantee citizens' rights to a favorable environment, promote sustainable development of the gene pool, and encourage the rational use of natural resources. Uzbekistan's ecological security strategy highlights the need for a humanistic and democratic approach, taking into account the traditional ecological lifestyles of the world's populations, along with their national security interests and sovereignty.

METHODS

Issues of ecological education, upbringing, and culture, as well as interdisciplinary integration, have been studied by Thomas E. Lovejoy (2017), Eugene Pleasants Odum (2018), F. Stuart Chaplin (2020), N. M. Mamedov (1981), S. N. Glazachev (2016), M. A. Zaborina (2022), A. V. Khutorskiy (1998), A. R. Meliboyev (2017), X. B. Norbotayev (2019), M. Nishonboyeva (2009), N. O. Nishonova (2012), O. T. Abdiyeva (2013), M. M. Aliqulova (2016), B. Qultorayev (2019), P. O. Berdanova (2017), V. Sattorov (2015), T. T. Saparov (2019), M. B. Rahimqulov (2013), N. M. Egamberdiyeva (2008), M. Rahmatullayeva (2013), and X. Rahmatova (2018), among others, focusing on competency-based approaches in educational processes

by J. O. Tolipova (2014), G. S. Ergasheva (2019), A. K. Rakhimov (2020), N. Muslimov (2021), and B. Khodjayev (2023).

RESULTS AND DISCUSSION

The advancement of ecological education and upbringing began earlier in other countries than in Uzbekistan. In Northern European and American countries, environmental protection strategies have shifted towards monitoring environmental conditions at all levels. These nations have integrated environmental protection issues into all sectors of their domestic and foreign policies, with the international community increasingly emphasizing that human activities align with sustainable development principles. A noteworthy aspect of this approach is the granting of extensive rights to the public to freely access and disseminate various types of ecological information.

In line with international standards, ecological education encompasses learning about, through, and for the environment. These three components provide a holistic solution to the fragmented issues of ecological education and upbringing. For example, in Western Europe, children engage in environmental education and upbringing from the age of three through interactions with wild and domestic animals on special farms, learning to care for them as part of their education.

In the region and countries ranked in the top 20 "eco-friendly" states, educational efforts focus on forming "environmentally cultured individuals" beginning in preschool institutions. The main goal is to introduce young children to ecological culture through ecological education and upbringing, establishing foundational elements of ecological culture. In general, Western European societies make efforts to create all necessary conditions for children to interact with and care for wild and domestic animals from an early age.

The table below (Figure 1) presents the content of ecological education and upbringing in "eco-friendly" states, starting from the lower levels of education.

In Austria, ecological education and upbringing have been incorporated into school curricula by organizing special school projects ("School Garden," "Environmental History," "Ecology in School," "Ecological Workshop," "Creativity for Nature"), holding environmental protection campaigns ("Ozone," "Alpine Activities"), developing various ecological didactic materials and special teaching aids, organizing seminars for eco-teachers, and offering retraining courses for all specialists involved in ecological education for students. Additionally, journals and newspapers on ecological education issues are published, and special ecological education programs such as "Environment, School, and Community" are prepared. A national database on ecological education issues has also been established to coordinate activities, providing guidance to teachers and specialists for students' participation in various environmental education and extracurricular ecological projects.

Figure 1. Content of Ecological Education and Upbringing in "Eco-Friendly" States

Country	Content of Ecological Education and Upbringing
Finland	Systematically starts from age 5 and is conducted in specially organized local "Nature Centers."
Sweden	A national information system has been created in cooperation with the Environmental Protection Society and the National Agency for Education.

Denmark	Integrated into all pedagogical professional education systems and mandatory in training preschool educators.
Austria	Regular seminars are organized for preschool educators, with ongoing retraining and professional development courses.
Norway	Preschool teachers are required to have specialized ecological training.
Japan	Preparation for individuals with a high ecological culture is reflected in preschool education programs in the environmental sector.

Ecological Education and Upbringing in Various Countries

Denmark: The issues of ecological education and upbringing are incorporated into all pedagogical professional education systems in Denmark. Mandatory ecological education is included in teacher training, manifesting through interdisciplinary independent education and accessibility of relevant teaching materials. Denmark is also a regular participant in long-term cooperation projects with Scandinavian countries, such as the Northern Symposium and international and national educational projects like "Education in the Environmental Field in Scandinavia," "Baltic Sea," "North Sea," "Clean Rivers," "Acid Rain," and "Green Flag," as well as environmental mapping and study of coastal areas.

Germany: Ecological education in Germany aims to reshape young people's perceptions of the environment, enhance their knowledge, increase their readiness to protect nature, and instill environmentally responsible behavior in the next generation. The focus is on exploring the relationships between humans, society, and the natural environment, with an emphasis on the role of human factors in ecological issues, including the impact of destructive pollution on ecosystems.

Ireland: In Ireland, ecological education and upbringing address the following: explaining the complexity of human interactions with the natural environment, encouraging interest in economic, social, political, and ecological relationships in urban and rural areas, and imparting knowledge, attitudes, values, and skills for making responsible ecological decisions. Education in Ireland also focuses on fostering practical knowledge and skills needed for environmental protection and enhancement, creating new ecological behavior models for individual and group activities, and fostering responsible attitudes towards nature.

Sweden: Sweden established ecological education and upbringing as a priority in 1970 during preparations for the "Year of Environment in Europe." Environmental protection themes were integrated into the new nine-year compulsory education system, and a National Program on environmental issues was developed. Sweden has since published new textbooks and guidelines for teachers and students, making ecological education a key area of cooperation among Scandinavian Peninsula countries.

Japan: Japan aims to develop individuals with high ecological awareness through environmental education programs that are embedded at all levels of national professional training. Japanese ecological education reflects the country's unique cultural psychology, which emphasizes collective consciousness. Traditional Japanese practices, such as ikebana (flower arranging), illustrate a deep-rooted reverence for nature, which has shaped Japan's approach to ecological education by integrating corporate-pedagogical and motivational elements in harmony with adaptive and reflexive characteristics.

United States: Ecological education and upbringing in the United States are characterized by diverse forms, directions, and methodological approaches. Environmental ethics are deeply integrated into all educational content, promoting cautious and responsible attitudes towards the environment. This

process actively involves the public, especially through the participation of non-governmental organizations, fostering broad public engagement in ecological education.

CONCLUSION

In summary, international experience shows that ecological education is not only focused on specialization but also aimed at cultivating individuals with high ecological awareness. Ecological education and upbringing in foreign countries are conducted according to the national mentality and regional characteristics. All fields and specializations of professional education are systematized and oriented towards environmental awareness. Consequently, ecological education and upbringing are adapted to each country's local conditions, with corresponding normative frameworks established accordingly.

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