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ECOLOGICAL

UPBRINGING AND ITS MAIN DIRECTIONS

LA EDUCACIÓN ECOLÓGICA Y SUS ORIENTACIONES PRINCIPALES

Eyyub Karimov Sevdim
E-mail: eyyub.kerimov@aztu.edu.az
ORCID: https://orcid.org/0000-0002-3664-4444
Azerbaijan Technical University.

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ABSTRACT

Achieving harmony in human-nature relations is one of the most important tasks in the conditions of ecological catastrophes, climate changes and ecological crises, which are the realities of the modern era. In this direction, environmental education is one of the main tasks that states should continuously carry out, regardless of space and time, opportunity and impossibility, and political regime. Environmental problems caused by globalization and technological development dictate the need for people to be more sensitive to nature and its protection. In this context, environmental education can make an important contribution to the formation of future generations as more responsible individuals who treat nature with respect and reverence. In this article, the importance of environmental education, ways and means of its formation have been investigated. It is highlighted the need to implement an educational approach that not only combines theoretical knowledge with practical skills, but also involves multiple social actors. The importance of adapting environmental education to specific cultural contexts is emphasized, as well as identifying critical challenges in implementation. The implications of this study suggest that, in order to build a sustainable future, it is essential to prioritize environmental education as a transversal component at all educational levels. Ultimately, we believe that robust environmental education can empower individuals and communities to proactively address environmental challenges and contribute significantly to global sustainability.

Keywords: Ecological education, Climate changes, Human-nature, Ecological consciousness.

RESUMEN

El logro de la armonía en las relaciones entre el hombre y la naturaleza es una de las tareas más importantes en las condiciones de catástrofes ecológicas, cambios climáticos y crisis ecológicas, que son las realidades de la era moderna. En esta dirección, la educación ambiental es una de las principales tareas que los Estados deben llevar a cabo continuamente, independientemente del espacio y el tiempo, la oportunidad y la imposibilidad, y el régimen político. Los problemas ambientales causados por la globalización y el desarrollo tecnológico dictan la necesidad de que las personas sean más sensibles a la naturaleza y su protección. En este contexto, la educación ambiental puede hacer una importante contribución a la formación de futuras generaciones como individuos más responsables que traten a la naturaleza con respeto y reverencia. En este artículo, se ha investigado la importancia de la educación ambiental, las formas y los medios de su formación. Se destaca la necesidad de implementar un enfoque educativo que no solo combine el conocimiento teórico con las habilidades prácticas, sino que también involucre a múltiples actores sociales. Se enfatiza la importancia de adaptar la educación ambiental a contextos culturales específicos, así como identificar desafíos críticos en la implementación. Las implicaciones de este estudio sugieren que, para construir un futuro sostenible, es esencial priorizar la educación ambiental como un componente transversal en todos los niveles educativos. En última instancia, se entiende que una educación ambiental sólida puede empoderar a las personas y a las comunidades para abordar de manera proactiva los desafíos ambientales y contribuir significativamente a la sostenibilidad global.

Palabras clave: Educación ecológica, Cambios climáticos, Hombre-naturaleza, Conciencia ecológica.

INTRODUCTION

In recent decades, the accelerated human growth, industrialization, and globalization have profoundly changed the way we interact with our environment. Issues such as increased air and water pollution, deforestation, loss of biodiversity and climate change pose serious threats to our future (Malhi et al., 2020; Shivanna, 2022). We believe that in order to find adequate solutions to many of these problems is neccessary a targeted action at the state level, as well as by each individual at their own level. In this context, environmental/ecological education is recognized as a key tool for raising awareness and promoting sustainable practices (Ma et al., 2023). Ecological education shapes people's attitude towards nature and increases their sensitivity to environmental problems. The main goal of ecological education is to make people understand the value of mother nature, whose children they are, to direct them to use natural resources efficiently and to encourage them to become active participants in solving environmental problems. This will help to form ecological awareness and prevent human activity from causing serious harm to nature. Ecological education is a process that teaches people about the structure of the environment, our interactions with it, and the importance of protecting nature. This education aims to create ecological awareness and a sense of responsibility in young people, to instill respect and love for nature, and to provide them with the necessary knowledge and skills to implement the principles of sustainable development (Sharma et al., 2023).

In this regard it is important to understand that to effectively address sustainability issues it is neccessary to use the environmental goods and services in a responsible way, but also the integration of ethical, social, and cultural values into our relationship with nature. That way, an effective ecological education bridges the gap between science and everyday practice, enabling individuals, communities, and governments to develop appropriate strategies to respond to environmental challenges. This approach is relevant since several authors highlight that current environmental problems are characterized by their complexity and multidimensionality (Habash, 2024; López Bastida et al., 2024; Payne, 2010). For example, climate change affects both biodiversity and human health, and phenomena such as desertification, deforestation and/or water and air pollution require coordinated responses. Becasue of that environmental education should not only focus on the transmission of theoretical knowledge, but also on the formation of responsible citizens, actively participating in decision-making and the implementation of effective environmental policies (Hernández Guzmán & Hernández García de Velazco, 2024). On the other hand, if globalization and the interconnectedness of modern societies have led to a greater diffusion of information, easier access to scientific data and international experiences in environmental management, this abundance of information can generate confusion and a lack of commitment if not correctly interpreted and contextualized. Thus, environmental education therefore plays a key role in the construction of a discourse that articulates knowledge, feelings and actions (Vasconcelos & Calheiros, 2022).

For example, it is undeniable that the introduction of new technologies has transformed the way in which education is approached. Digital tools, social networks, simulators and interactive applications have opened up new avenues for learning and the dissemination of knowledge. But while these innovations allow us to reach broader and more diverse audiences, making it possible for environmental education to transcend the traditional limits of the classroom, technology alone does not guarantee the transformation of reality (Cho & Park, 2023; Lowan-Trudeau, 2023). Therefore, we highlight the relevance of the social dimension in ecological education. This may be reflected, among other things, in the way in which cultural diversity is addressed and in the recognition that each community has its own ways of relating to its environment. Local traditions, beliefs and practices can become valuable resources for the conservation and sustainable management of natural resources. Environmental education in this sense must respect and promote traditional knowledge and integrate it into a framework that maintains a dialogue with modern science (Poelina et al., 2023). The recognition of cultural diversity also includes a reflection on environmental justice. The most vulnerable communities, often those least responsible for the ecological crisis, are those that suffer the greatest consequences of environmental degradation. Environmental education can thus become a tool to empower these groups, offer them the necessary tools to exercise their rights and actively participate in the creation of public policies that promote equity and sustainability (DeWitt, 2024; Riley & Delgado, 2024).

Despite its importance, the implementation of environmental education programs faces multiple challenges. These include a lack of financial resources, a lack of teacher training, and resistance to change in traditional educational systems. In addition, in many contexts there is a disconnection between academic knowledge and local realities, which makes it difficult to apply the content learned in practice. Another relevant challenge is the need to integrate environmental education in all areas of

knowledge and at all educational levels. This requires a rethinking of curricula and ongoing training that allows teachers to address the complexity of the environment in a comprehensive manner. In this sense, it is crucial to promote public policies that support the inclusion of environmental education as a cross-cutting component in educational systems.

Considering what has been discussed above, the main objective of this paper is to briefly highlight the importance of environmental education as an indispensable tool to foster ecological awareness and promote sustainable practices in a context of contemporary ecological crises and climate change. For this purpose, fundamentally qualitative research methods were used, such as a bibliographic review to support the theoretical argument, qualitative analysis to highlight different approaches and models of environmental education, as well as mentioning initiatives to illustrate successful approaches in environmental education that can serve as models to follow. These methods allow to present a comprehensive framework on the subject addressed, evaluating both current theories and effective practices in the field of environmental education.

DEVELOPMENT

The importance of ecological education is manifested in many ways. First of all, thanks to this education, the active participation of young people in the protection and restoration of nature can be ensured. As ecologically responsible behavior spreads in society, it becomes possible to prevent the violation of environmental harmony and use natural resources efficiently. Environmental protection is also vital for the health and well-being of future generations. Living in a polluted environment poses a serious threat to human health and can be the cause of various diseases. Through ecological education, it is possible to foster in young people a desire to live in a clean and healthy environment and encourage them to act accordingly.

Currently, several international organizations are engaged in environmental issues. Among them are the Council of Europe, the OSCE, and the Organization of American States (OAS). However, the UN has not assumed primary responsibility for this issue on a global scale. It is sometimes called the "world forum for organizing international environmental action" (Timoshenko, 1981, p. 12). The advantage of the UN is that it can operate on a global scale, coordinating political, socio-economic, and scientific and technical directions in its activities. Moreover, the UN, as a superior body to governments, has the ability to practically implement the decisions it makes. This organization can also involve other international governmental and non-governmental organizations, national scientific institutions, and prominent experts in this field in solving global environmental problems. Indeed, the UN, as an organization with universal functions, is able to play a significant role in environmental protection (Perelet, 1989, p. 105).

In our opinion, to achieve success in environmental education, it is necessary to carry out targeted work in the following areas:

- **Environmental education in the family:** Children should acquire their first ecological knowledge and habits in the family. Parents should set an example of respect and responsibility for nature and take measures to protect it through their own behavior. Simple actions such as reducing the use of plastic containers at home, using water and electricity economically, and not littering in nature can play a major role in forming ecological awareness in children.
- **Environmental education at school:** In the process of teaching subjects related to ecology in schools, various ecological measures and projects should be implemented to solve environmental challenges. Ecological education should be widely included in modern textbooks. Ecological topics should be taught in more detail in natural sciences, geography, biology, and chemistry lessons.

Field trips should be organized so students can observe the natural environment. These experiences will not only increase their ecological knowledge but also foster their love for nature. Activities such as ecological clubs and environmental clean-up campaigns stimulate the development of ecological responsibility and appreciation for nature in young people. The implementation of programs like "Green School" and "Ecological School" are effective means of ecological education. Schools should create ecological laboratories where students can learn through practical experiments. In this area, positive experiences from both Eastern and Western approaches should be utilized purposefully (Karimov, 2023). Students should be encouraged to participate in various environmental projects, through which they can learn more about environmental problems and develop solutions.

Environmental education should become an integral part of the educational process. This type of education teaches children about nature's complexities and the importance of ecological balance. Various methods exist for implementing environmental education in schools. The pedagogical cooperation based on mutual understanding, mutual assistance and interaction approach offers extensive possibilities for increasing the efficiency of work in this direction. Then important elements to take into account are:

- **Environmental education in public organizations:** Environmental organizations and NGOs should play an active role in environmental protection and education. Their events, seminars, conferences, and campaigns help ensure public awareness of environmental problems and encourage contributions to solutions.
- **The role of the mass media:** Mass media plays an important role in environmental education. Through television, radio, the Internet, and the press, environmental protection should be promoted, information about environmental problems should be disseminated, and environmentally responsible behavior should be encouraged.
- **The influence of positive examples in environmental education:** The impact of positive examples in environmental education is significant. Individuals who actively advocate for environmental protection, organizations implementing environmental projects, and people demonstrating environmentally responsible behavior contribute to spreading environmental awareness and strengthening determination in solving environmental problems.
- Ecological education and upbringing, as special types of ecological activity related to the spiritual sphere, are the main sources of ecological consciousness formation.

Taking into account the ecological aspect in any type of social activity requires a conscious assessment of goals and underlying needs. Therefore, ecological consciousness should regulate and control the exchange between society and nature in a specific way, and should continuously evaluate people's activities considering future ecological perspectives, which is necessary for societal development. Consequently, a social ecological consciousness emerges as a moral institution within the system of ecological activity, regulating human and societal activities in the natural environment. Thus, the relationship between ecological consciousness and activity is twofold: it acts as an ideal component of activity while simultaneously being formed and realized through specific forms of ecological activity.

The past 40-50 years can be considered the foundation for the emergence of ecological consciousness within the structure of public consciousness. Ecological consciousness has several key characteristics. Primarily, it reflects the nature-society interaction and ecological existence as a single, fully systematic organized process. Additionally, it incorporates the ecological aspect through normative evaluative conclusions closely tied to ecological knowledge. These elements together create ecological consciousness.

The structure of ecological awareness can be divided into two general levels: the professional level and the mass level of awareness. The field of ecological knowledge is significantly broader than scientific ecological knowledge since it also encompasses practical skills and empirical research. The historical formation of ecological knowledge has proceeded mainly spontaneously. However, due to the extreme transformation of nature during scientific and technological progress, ecology as a science, as well as social ecology in its expanded precise sense, began to take shape. Consequently, ecological consciousness has penetrated scientific knowledge, which is then reflected in mass consciousness. However, not all knowledge reflecting ecological activity is accurate or has been confirmed by experience. This knowledge also includes assumptions, scientific forecasts, and programs for future activity. This feature of specialized knowledge—the ability to foresee changes in the relationships between nature and society, or more specifically, its scientific-prognostic function—plays a crucial role in solving ecological problems.

The main function of ecological consciousness is to optimize the relationships within the nature-society system. Additionally, ecological consciousness serves exciting, educational, prognostic, controlling, perceptive, and regulatory functions. The exciting function is associated with "ecophobic" theories in mass consciousness. Despite the one-sided approach to the use of nature, this exciting function serves as a unique "excitement drum" to awaken mass consciousness. It highlights the need to solve ecological problems. The educational function of ecological consciousness expresses the complex interaction between humanity and class, individual and society. In this system of relations, the superiority of human values and unifying factors is undeniable. If ecological consciousness were fully formed on a global scale as a unifying factor, it would help eliminate several negative traits that manifest in people.

The supervisory function aims to restore the disturbed order of nature and rebuild what has been destroyed, and is closely connected to areas such as compensatory ecological activity. Society's defined activity in the natural environment is carried out through the supervisory function based on specific ecological laws and principles. The prognostic function of ecological consciousness includes foreseeing and preventing various processes in the nature-society system. Its main purpose is not only to understand the degree of permissible impact on the natural environment but also to develop a framework that allows for optimal management of the nature-society system. The regulatory function of ecological consciousness can play

a leading role only when the cognitive function is fulfilled. The cognitive function of consciousness can be realized both at the theoretical-scientific level of nature-society relations and at the level of ordinary consciousness. From the perspective of substantial relations, ecological consciousness exists in the form of knowledge. The concept that knowledge is a way of consciousness existing is well-established. The process of realizing the cognitive function of consciousness is closely linked to clarifying its object of reflection. That way, understanding the object of reflection in ecological consciousness requires analyzing nature's place in the structure of social existence and its reflection in social consciousness.

CONCLUSIONS

Environmental education is an essential tool for building societies committed to sustainability, transcending the mere transmission of data to become a catalyst for ethical and practical action in the face of crises such as climate change and biodiversity loss. Its effectiveness lies in a holistic and interdisciplinary approach that interconnects scientific, ethical and cultural dimensions, allowing students not only to understand environmental complexity, but also to get involved in innovative solutions. However, for adequate environmental education it is important to highlight the synergy between social actors: schools, families, NGOs and the media must operate as collaborative networks to build a culture of ecological responsibility. For this reason, media campaigns and community projects, for example, amplify awareness and transform individual consciousness into collective mobilization. Likewise, emphasis must be placed on the cultural adaptation of educational programs, so that the dialogue between ancestral knowledge and scientific knowledge enriches conservation strategies, guaranteeing relevance and respect for local identities.

On the other hand, although technology is currently emerging as a strategic ally, it is important that its use be framed within critical pedagogies that avoid digital reductionism. Interactive platforms and social networks can democratize access to information, but they need to be complemented with spaces for reflection and in-person participation. Furthermore, despite the advances in environmental education, structural obstacles persist, such as a lack of funding, outdated teacher training, and the rigidity of educational systems anchored in traditional paradigms. To overcome these, it is proposed to integrate environmental education as a cross-cutting axis in public policies, ensuring resources, continuous teacher training, and flexible curricula that prioritize pedagogical innovation. In this way, environmental education will not only inform, but will empower citizens as agents of change, capable of translating knowledge into sustainable practices. Thus, the success of environmental education will depend on the ability to combine scales—from the local to the global—, take advantage of technological tools with ethical criteria, and strengthen alliances that democratize environmental decision-making.

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