

CONCEPT OF ECOLOGICAL LITERACY IN THE CONTEXT OF THE U. S. HIGHER EDUCATION

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Summary

The article highlights the characteristics of the ecological literacy and the strategies for its formation in the context of the U. S. higher education institutions. It focuses on studying the essence of the concepts “literacy” and “ecological literacy”. The author also analyzes the role of universities in the United States in integrating the principles of environmental education into their educational process. The research design is descriptive and analytical, based on a deductive-narrative approach and a set of complementary theoretical methods, which are as follows: critical analysis and generalization of philosophical, psychological and pedagogical sources on the problem under study; monographic method – for interpreting the results obtained in a coherent logical perspective. It is noted that the formation of students’ ecological literacy is a priority area of the U. S. higher educational institutions today, involving: knowledge (mastery of basic scientific concepts about nature, environmental problems); awareness (formation of a conscious position on the environment); attitude (understanding of nature as a unique value and source of human life); skills (ability to practically master the environment and protect it); activity (participation in environmental protection activities); skills (participation in solving environmental problems); ecological thinking style and responsible attitude towards nature.

Key words: literacy, ecological literacy, the educational process, environmental education, U. S. higher education institutions.

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1. Introduction

In the conditions of the current global ecological crisis, it is necessary for every citizen to be a conscious and energetic participant in the process of preserving, increasing and rationally using natural resources. The active and often irresponsible impact of modern people on the Earth’s ecosystem has led to environmental degradation and ecological risks. A person’s constructive attitude towards the environment depends largely on the strength of the foundation of acquired environmental knowledge and the ecological literacy formed on its basis, which is currently one of the fundamental aspects during the creation and further effective functioning of any country in the world.

The response to environmental risks should be the recognized need to ecologize the consciousness and lifestyle of the population, that is, the assimilation of certain ecological ideas and attitudes towards nature, as well as the introduction into everyday practice of technologies that do not cause irreparable harm to the natural environment, changing people’s lifestyle to a more ecological one, and spreading a careful attitude towards natural resources. Proper solution to environmental problems requires a purposeful process of forming students’ ecological citizenship by involving them in environmental initiatives, as well as comprehensive and value-oriented environmental education. It is environmental education that should become

a cross-cutting priority of all higher education curricula, and not individual disciplines of an environmental orientation. At the same time, it is necessary to involve student youth in as many environmentally oriented activities as possible. All this will allow students to understand how different social, economic and ecological systems interact, to realize the views and values that influence the sustainability of society and more sustainable ways of life. In this regard, the pedagogical experience of the USA, where environmental education has become a priority area in the scientific and educational activities of higher education institutions, may be useful. A key feature of the U. S. higher education is the tendency for systematic integration of environmental education into the educational process.

The purpose of the article is to highlight the characteristics of the ecological literacy and the strategies for its formation in the context of the U. S. higher education institutions. The realization of this aim requires solving the following tasks: 1) studying the essence of the concepts “literacy” and “ecological literacy”; 2) analyzing the role of universities in the United States in integrating the principles of environmental education into their educational process.

Methods. The research design of this study is descriptive and analytical, based on a deductive-narrative approach and a set of complementary theoretical methods, which are as follows: critical analysis and generalization of philosophical, psychological and pedagogical sources on the problem under study; monographic method – for interpreting the results obtained in a coherent logical perspective.

2. The concepts “literacy” and “ecological literacy”

The level of educational achievements of today’s students and their implementation in life directly depends on the degree of knowledge possession, on the ability to apply them, that is, on the development of literacy as personal qualities (*Fedorenko, 2017: 70*). Therefore, we consider it appropriate to turn to the concept “literacy”, which is increasingly used by modern teachers. The content of the concept of literacy is determined by the cultural and historical aspect, changing in accordance with the requirements of culture at a particular stage of its development. At the same time, literacy is always considered in the context of personal growth. In the last century, literacy was associated with the level of education of a person, which included the ability to read, write and count (*Fedorenko, 2014*). Instead, in modern conditions, the concept of literacy is exploited to denote: the ability to understand and use different types of information in everyday, professional and public spheres of life (*UNESCO Institute for Education, 1997: 12*); a set of basic cognitive skills (*UNESCO, 2005: 147*).

It should be noted that the introduction of the concept “literacy” into the vocabulary of the U. S. higher education by American scholars (*Jewitt, Kress, Ogborn & Tsatsarelis, 2001*) is associated with the growth of the volume of information in various formats and sources, the complexity of forms and channels of communication. Information includes: tacit knowledge; a package of human experience; sources or resources that provide certain facts and have different formats; people (family, friends, teachers, etc.); organizations, for example, social ones (*Case, 2002*).

In the U. S. pedagogical theory, literacy is considered in the following discrete areas (*UNESCO, 2005: 149*):

- 1) literacy as an autonomous set of cognitive skills;
- 2) literacy as acquired practical experience;
- 3) literacy as a outcome of learning due to the educational process;

4) literacy as the use of acquired knowledge in the text context.

In modern conditions, literacy is considered as a personal sociocultural ability, the development of which provides each student with rules for solving problems, relating to different spheres of life and surviving in various social conditions, and also numerous opportunities for enhancing their critical thinking and reflection of the world (Fedorenko, 2019: 12). According to the Merriam-Webster dictionary (<https://www.merriam-webster.com/>), literacy means: the state or quality of knowledge about a certain subject or area, such as cultural or biblical literacy. In the U. S. academic circles, intensive processes of differentiation and integration are taking place in the field of attribution of various types of literacy, which embodies the most important objective parameters of society, people, their spiritual, moral and ethical guidelines, as well as ways of knowing the world around them. This should ensure “the construction of a productive socio-cultural future” (Fedorenko, 2017: 71).

According to the conventional meaning of this phenomenon, back in the mid-20th century, only two types of literacy were distinguished – functional and critical, which involve the development of reading and writing skills, the ability to work with new technologies, the formation of communication skills and social adaptation skills necessary for successful life in the modern world. It should be noted that today the general concept of literacy is quite polymorphic and dynamic: it is constantly being refined in accordance with the challenges of the present and expanding its typological classification (cultural literacy, information literacy, media literacy, intercultural literacy, ecological literacy, transliteracy, etc.) (Fedorenko, 2017: 70).

The above definitions of literacy lead many people to identify ecological literacy with “knowledge” and an ecologically literate person – with the understanding of environmental issues. While knowledge and understanding are important components of ecological literacy, they are not the complete picture. Research has shown that there is often a gap between what people know and what they do (Finger, 1994). The core elements of the ecological literacy are as follows: knowledge (mastery of basic scientific concepts about nature, environmental problems); awareness (formation of a conscious position on the environment); attitude (understanding of nature as a unique value and source of human life); skills (ability to practically master the environment and protect it); activity (participation in environmental protection activities); skills (participation in solving environmental problems); ecological thinking style and responsible attitude towards nature. In reality, other factors – how people feel, their experiences of the environment, social norms, priorities, their skills, their self-identity, and other factors – come into play when people decide whether to do something. The terms such as “ecological literacy” and “environmental/ecological education” are constantly being refined and revised by experts in the field.

Thus, ecological literacy is usually defined as having: awareness and concern for the environment and environmental problems, and the knowledge, skills, and motivation to solve these problems and prevent new ones (McBride, Brewer, Berkowitz & Borrie, 2013: 4). An ecologically literate person is viewed as an individual who, independently and with others, makes informed decisions about the environment; is willing to act on these decisions to improve the well-being of others, the global community, and the environment; and is actively involved in public life to address current environmental problems (North American Association for Environmental Education, 2011).

3. The higher-education curriculum reform is needed

Universities in the United States seek to increase students' ecological literacy through a variety of strategies. One such strategy is to increase the number of courses and degrees related to the environment, while another is to include environmental topics in non-environmental courses (e.g., English or sociology) (Brint, Turk-Bicakci, Proctor & Murphy, 2009). The latter involves including such courses in the general undergraduate curriculum at U. S. higher education institutions, as well as integrating selected environmental topics into all general education courses (Hill & Wang, 2018).

It should be emphasized that since the 1970s, there has been a growing recognition that higher education institutions play a key role in addressing environmental issues. In addition to modeling how various industrial enterprises can effectively reduce their harmful impact on the environment, higher education institutions have the opportunity to transfer to the next generation values, knowledge and educational practices that can help solve growing environmental problems. The recognition of their educational role is also evidenced by the growing number of international conferences, forums, etc. Focused on environmental education, starting with (Vallée, 2024). In particular, during one of such scientific meetings in Belgrade in 1975 the Belgrad Charter: A Framework for Environmental Education was adopted, which defined the following goals for higher education institutions improvement:

- to educate citizens of the world who are concerned about the environment and are aware of all the risks and problems associated with it;
- to develop in citizens of the world the skills and qualities necessary for the improvement of human life and the protection of the environment (Vidart, 1978).

Subsequently, in 1990, the presidents and rectors of 20 universities from 13 countries signed the Talloires Declaration, according to which their higher education institutions undertook to accumulate knowledge in the field of environmental management, sustainable economic development, population and related fields, and to ensure that all university graduates are environmentally literate and environmentally responsible citizens (ULSF, 1990). It is worth noting that over the past 30 years, the list of higher education institutions that have joined the Talloires Declaration has expanded to 520 educational institutions in 57 countries, including 172 in the United States alone (ULSF, 2021). In addition to joining similar declarations in the field of environmental education, many higher education institutions in the United States have taken concrete practical steps, including expanding the list of environmental disciplines in the general education system of undergraduate students and participating in environmental research (Brint, Turk-Bicakci, Proctor & Murphy, 2009; Collett & Karakashian, 1996).

However, these educational initiatives are not widespread: 45% of American higher education institutions still do not offer environmental education in their general education curricula, but environmental topics are addressed in a number of educational components (Johnson, Ilhan & Frickel, 2020; McIntosh, Gaalswyk, Keniry & Eagan, 2008; Wolfe, 2001). Another problem is that when such courses are offered to students, they are more likely to be taken by students who are already interested in environmental issues, as opposed to those who are not yet interested and who need it most. As a result, the vast majority of students do not gain a clear understanding of how ecosystems function, how human systems affect them, and how collective beliefs and behaviors contribute to solving environmental problems (Hess & Maki, 2019). In turn, the resulting ecological illiteracy reduces the likelihood that these graduates will change their environmental behavior, i.e., become environmentally aware citizens, or appropriately support policies aimed at effectively addressing and preventing environmental problems (Vallée, 2024).

4. Conclusions

The aforementioned allows us to conclude that today the idea of ecological literacy of students as their personal responsibility for fulfilling their obligations to protect the environment in combination with the social significance of civic qualities is one of the fundamental ones in a modern society of sustainable development. The scholars consider ecological literacy as the ability to intelligently and rationally utilize natural resources within the framework of sustainable development, awareness of the role of the environment for human life. At the same time, ecological literacy acts as a factor of human adaptation to changing environmental conditions, which is based on historical interaction with the natural world, ensuring harmonious coexistence with the environment. Developed ecological literacy admit exploring environmental problems, participating actively in solving these problems and taking measures to improve the environment. As a result, young people have a deeper understanding of environmental problems and have the skills to make informed and responsible decisions.

The path to the formation of ecological literacy lies through effective environmental education, carried out in the process of learning, self-education, as well as on one's own life experience. The formation of students' ecological literacy is a priority area of the U. S. higher educational institutions today, involving: knowledge (mastery of basic scientific concepts about nature, environmental problems); awareness (formation of a conscious position on the environment); attitude (understanding of nature as a unique value and source of human life); skills (ability to practically master the environment and protect it); activity (participation in environmental protection activities); skills (participation in solving environmental problems); ecological thinking style and responsible attitude towards nature. And modern universities can exploit their infrastructure, research and educational process to support the environment, thus playing a decisive role in the sustainable development of society.

The scope of further research of this issue lies in the study of the complex of organizational and pedagogical conditions for the formation of students' ecological literacy in higher education in the USA.

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