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FORMATION OF STUDENTS' ENVIRONMENTAL COMPETENCE IN THE CONTEXT OF SOCIO-CULTURAL INITIATIVE

Анотація. У статті розглядається процес формування екологічної компетентності студентів як ключового компонента їх професійної підготовки в контексті соціокультурних ініціатив. Аналізується взаємозв'язок екологічної свідомості та соціокультурної діяльності, визначаються критерії та рівні екологічної компетентності. Представлено авторську програму розвитку екологічної свідомості студентів, засновану на проблемному навчанні, міждисциплінарному підході та інтеграції екологічних знань у соціокультурний контекст. Ефективність програми вивчається за допомогою експериментального тестування, яке підтвердило її вплив на формування відповідального ставлення до навколишнього середовища, екологічного світогляду та активної участі студентів у сталому розвитку. У статті екологічна компетентність розглядається як інтегративна формація, що забезпечує здатність студентів ефективно вирішувати екологічні проблеми в соціокультурних контекстах. Визначається взаємозв'язок екологічної компетентності з знаннями, навичками, цінностями та соціальною відповідальністю, необхідними для участі в діяльності зі сталого розвитку та охорони навколишнього середовища. Визначено роль викладачів у впровадженні екологічних практик та формуванні відповідального ставлення до навколишнього середовища. Екологічний світогляд як складова професійної діяльності підкреслює важливість інтеграції екологічних принципів у професійну практику.

Експериментальна робота підтвердила ефективність програми розвитку екологічної свідомості студентів, заснованої на проблемному навчанні, імітаційному моделюванні та методі кейсів. Програма сприяє формуванню екологічного світогляду та професійної готовності майбутніх фахівців, забезпечує знання, навички та цінності для екологічної діяльності. Інтеграція екологічної освіти в усі рівні освіти формує відповідальне ставлення до навколишнього середовища, критичне мислення та громадянську активність, сприяючи сталому розвитку суспільства.

Ключові слова: екологічна компетентність, екологічна свідомість, соціокультурна ініціатива, проблемне навчання, сталий розвиток, міждисциплінарний підхід, професійна підготовка, екологічний світогляд, діяльність з охорони навколишнього середовища.

Abstract. The article considers the process of forming students' environmental competence as a key component of their professional training in the context of socio-cultural initiatives. The relationship

between environmental awareness and socio-cultural activities is analyzed, and the criteria and levels of environmental competence are determined. The author's program for developing students' environmental awareness is presented, based on problem-based learning, an interdisciplinary approach, and the integration of environmental knowledge into the socio-cultural context. The effectiveness of the program is studied through experimental testing, which confirmed its impact on the formation of a responsible attitude towards the environment, an ecological worldview, and active participation of students in sustainable development. The article considers environmental competence as an integrative formation that ensures the ability of students to effectively solve environmental problems in socio-cultural contexts. The relationship between environmental competence and the knowledge, skills, values, and social responsibility necessary for participation in sustainable development and environmental protection activities is determined. The role of teachers in the implementation of environmental practices and the formation of a responsible attitude towards the environment is outlined. An ecological worldview as a component of professional activity emphasizes the importance of integrating environmental principles into professional practice.

Experimental work confirmed the effectiveness of the program for the development of students' environmental awareness, based on problem-based learning, simulation modeling and the case method. The program contributes to the formation of an ecological worldview and professional readiness of future specialists, provides knowledge, skills and values for environmental activities. The integration of environmental education into all levels of education forms a responsible attitude towards the environment, critical thinking and civic activity, contributing to the sustainable development of society.

Keywords: ecological competence, ecological awareness, socio-cultural initiative, problem-based learning, sustainable development, interdisciplinary approach, professional training, ecological worldview, environmental protection activities.

Introduction. Dynamic changes in society and Ukraine's integration into the European community require improving citizens' information culture and forming environmental competence, taking into account age-related characteristics. Information tools available to young people have both a positive and potentially negative impact on development, in particular the emotional sphere. Progress in technology contributes to development, but can deepen the crisis of civilization due to the focus on material enrichment. Despite this, research indicates a gradual increase in students' environmental awareness, such as at the National Forestry University, where positive dynamics of the application of environmental practices can be traced.

The relevance of studying environmental competence as a complex integrative formation is determined by the modern challenges of globalization, environmental crises and the need for harmonious interaction between humans and the natural environment. In the context of increasing socio-cultural interaction of students as future specialists, special attention is paid to the formation of environmental competence, which becomes a key element in the development of their readiness for socio-cultural activity. Such integrative education not only promotes ecological awareness, but also ensures effective intercultural communication, which is critically important for the sustainable development of society. Studying this issue will allow to respond to modern educational needs and the formation of environmentally conscious and socially responsible individuals.

C. Laczkovics investigated the protective mechanisms that are activated to support the mental health of students, emphasizing the role of an ecological worldview as an important factor. An ecological worldview contributes to the formation of stress resistance, as it helps students realize the relationship between man and nature, which reduces the level of anxiety and promotes emotional stability. Protective mechanisms, such as sublimation or rationalization, allow students to adapt to challenges, maintaining a positive attitude towards the environment and their own "I". J. Dagani studied the adaptation of students in an eco-environment. C. Juneau confirmed the reliability of the equality scale (EQUA-S). D. Acquadro Maran and T. Begotti analyzed teacher anxiety and burnout. Grub E. investigated changes in motor balance during rehabilitation, and Trudel-Fitzgerald C. investigated psychological well-being in the context of environmental competence [1–7]. Such research trends highlight the importance of integrating environmental education to support individual and societal mental well-being.

The purpose of the article is to substantiate the implementation of educational approaches and programs that will contribute to the formation of environmental competence of students, who are able to act consciously in conditions of socio-cultural interaction, harmoniously combining knowledge, values, and practical skills to solve the environmental challenges of modern society.

Experimental part. A number of programs aimed at the formation of environmental competence and culture have been implemented in Ukraine. The Concept of Environmental Education (1996) and the National Strategy for the Development of Education until 2021 define the greening of education as a priority. The Law "On the Basic Principles of State Environmental Policy" provides for the implementation of the Strategy for Environmental Education. The State Ecological Academy offers advanced training programs. All these initiatives contribute to the integration of environmental education and the formation of environmental awareness. The lack of environmental knowledge in society threatens with violation of laws and is a challenge of state importance. Environmental education should solve social, economic, and environmental problems, overcoming alienation from current challenges. It is necessary to green all spheres of life as the basis for the formation of an ecological worldview, a culture of safety and skills for preserving natural resources.

Teachers and leaders, using project-based learning methods, contribute to the development of students' practical skills in solving environmental problems, integrating knowledge with practice. The level of students' environmental awareness needs to be increased through a systematic approach that includes the integration of environmental knowledge, the development of critical thinking and participation in projects. The formation of an ecological worldview in higher education will increase spiritual and moral education, social cohesion and reduce the consequences of emergencies. The study examines the protective mechanisms of mental health, cultural adaptation, emotional burnout of teachers and psychological well-being, which emphasizes the relevance of environmental competence.

Environmental competence as a complex integrative formation in the context of students' readiness for socio-cultural activity is a set of knowledge, abilities, skills and value orientations that ensure the ability of an individual to comprehend, evaluate and effectively solve environmental problems in various socio-cultural situations. It includes not only environmental knowledge and practical skills, but also the development of social responsibility, ethical principles and cultural values necessary for active participation in environmental protection and support of sustainable development in the context of modern socio-cultural activity [3; 4; 7].

Environmental competence is the ability of teachers and managers to carry out environmental activities, implement environmental practices, form skills in students and subordinates, be responsible for sustainable development and the impact of their decisions on the ecological environment. It involves a deep understanding of environmental processes, knowledge of the principles of ecology, practical skills for solving environmental problems, the ability to assess and manage environmental risks [5; 8].

An ecological worldview in the professional activity of a specialist is a system of beliefs, values, and attitudes that determine an individual's attitude to the environment and his or her readiness to integrate the principles of sustainable development, nature protection, and environmental safety into professional practice. This worldview involves an awareness of the importance of environmental aspects in the performance of professional duties, responsibility for the consequences of one's activities for nature and society, and the ability to apply environmentally oriented decisions within the framework of professional standards and ethical norms [3; 7].

Modernization of modern education depends on revising the goals, content and process of teaching disciplines, in particular those that provide training for highly qualified specialists. Solving these tasks is associated with the need in recent years to overcome a number of accumulated general shortcomings and contradictions in the education system itself (Fig. 1).

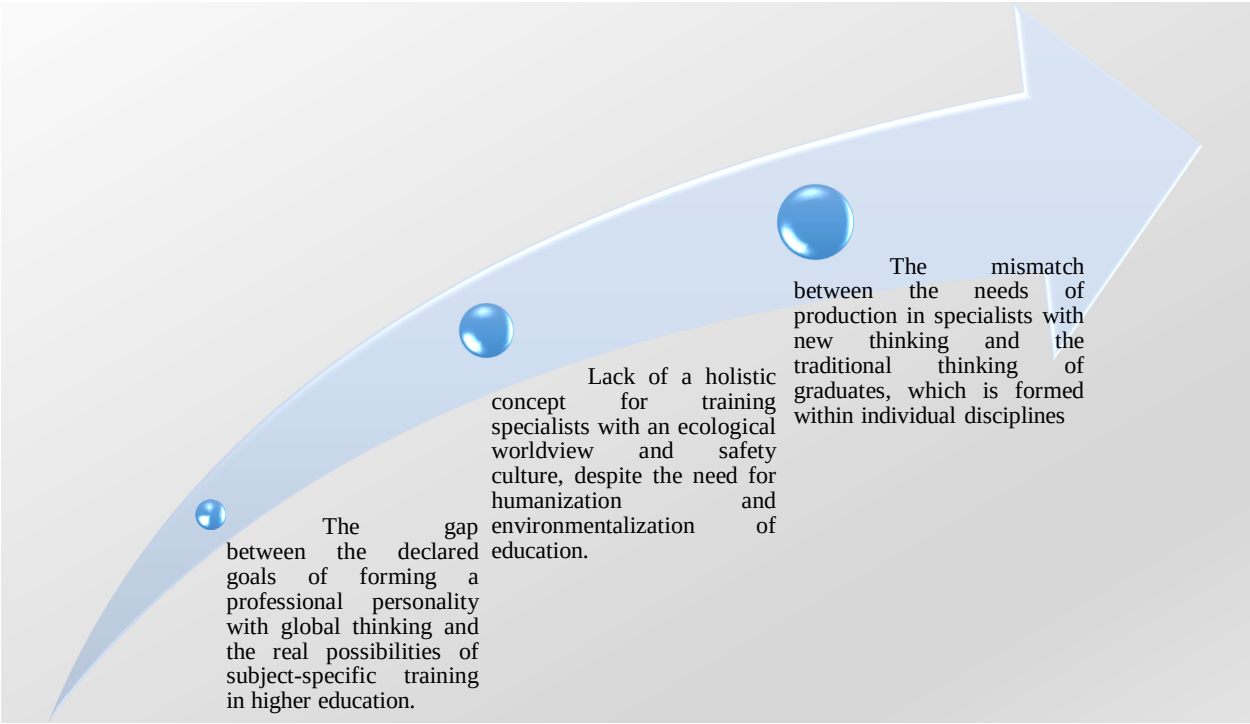

Fig. 1. Key problems of the environmental education system in the context of socio-cultural research

To resolve these contradictions, it is necessary: scientific support for a holistic educational process, the creation of a concept for training and developing a safety culture and an ecological worldview, modernization of curricula, interdisciplinary integration of subjects, design of the process of their study and development of students. The reform of vocational education is a means of influencing the worldview and mentality of society. Education is moving towards training a person of the noosphere formation, based on modern technologies that contribute to the formation of a safety culture and an ecological worldview [3; 7].

The theoretical and methodological basis is the philosophical concept of the connection between objective and subjective reality, the unity of consciousness and activity in the formation of a personality, the theory of cognition and the specifics of the educational process in higher education. Systemic and personal-activity approaches to training specialists are used, taking into account the unpredictability of events, time shortage and the need to make decisions.

Training of specialists should include the use of emergency data, geographic information systems, multimedia and interactive programs to develop interest in learning, ensure safety and form a culture of health. It is necessary to study the components of students' professional readiness for safe living and the role of individual subjects in this process. The study of students' environmental competence involves a comprehensive approach: analysis of publications, observation of students' participation in events, interviews with participants and assessment of the results of their projects, which allows determining the level of competence and readiness for socio-cultural activities, ensuring the improvement of educational programs.

Assessment of students' personal characteristics (motivation, self-esteem, social adaptation) helps determine their readiness for socio-cultural activities. Simulation modeling develops intelligence, creative abilities and independence, contributes to the search for effective solutions, the formation of personality and the management of emotions. Imitation of production situations activates the potential of students, causes positive emotions and stimulates development. The case study method, through the analysis of real situations, helps to develop practical skills, managerial thinking, and reasoning, based on the Harvard and Manchester schools.

The main components of the "Program for the Development of Environmental Awareness of Students" are lectures and courses on ecology, interactive materials, practical trainings, projects, environmental events, cooperation with organizations and psychological trainings. The program forms knowledge and skills for participation in environmental conservation, which contributes to the professional competence of students. Practical classes using case studies help to apply theory in practice, develop problem-solving skills, critical thinking and argumentation. The organization of such classes includes instruction, task completion and discussion of results. The program is aimed at the cognitive, motivational and operational spheres of students' development, taking into account their psychological characteristics. The studies showed positive changes in the level of environmental awareness, which confirms the achievement of the goal of the experiment.

Results and their discussion. An experiment on the study of students' environmental competence as a complex integrative formation was conducted at the Mykhailo Kotsiubynskyi Vinnytsia State Pedagogical University. 388 people took part: students, teachers, practice managers and stakeholders. The synergy of education, practice and stakeholders created an ecosystem for the formation of a responsible attitude towards the environment and the development of environmental skills. The experiment was conducted in compliance with ethical norms and general conditions of participation.

The effectiveness of the program was tested in two stages at the beginning and end of the 2024-2025 academic year: the level of environmental awareness was diagnosed according to certain criteria (cognitive, motivational-need, operational). The experimental group (201 people) and the control group (187 people) were formed in accordance with the qualification requirements. To check the homogeneity of the groups, the Pearson $\chi 2$ statistical criterion was used. Statistical analysis confirmed the absence of significant differences between the groups according to the criteria. The main hypothesis H0 was accepted for all levels of environmental awareness, indicating the effectiveness of the proposed program. It should be noted that the combination of environmental competence and eco-worldview based on professional experience contributes to the creation of an educational system focused on sustainable development and environmental protection, as well as the formation of specialists capable of making informed decisions in the field of ecology (Table 1).

Table 1

Criteria for environmental competence of future specialists

Criteria for environmental competence	EG (201 особа)				RG (187 осіб)			
	Перед Е		Після Е		Перед Е		Після Е	
	Кі-ть	%	Кі-ть	%	Кі-ть	%	Кі-ть	**%**
Cognitive	42	20,89	63	31,34	61	32,62	64	**34,22**
Motivational-needs	71	35,32	67	33,33	65	34,76	66	**35,29**
Operational	88	43,78	71	35,32	75	40,11	71	**37,96**
χ^2_{emp}	**0,2370**		**0,4655**		**0,4247**		**0,5906**	

Statistical processing in Excel showed significant differences between the control and experimental groups in terms of the levels of formation of environmental competence. Students showed a predominantly average level of environmental awareness (75.8% of boys and 71.7% of girls), while 11.9% of girls and 16.8% of boys had a low level, which indicates insufficient awareness of environmental issues. The study confirmed that practical classes using simulation modeling and improved content of works significantly improve the formation of an ecological worldview and safety skills (Fig. 2).

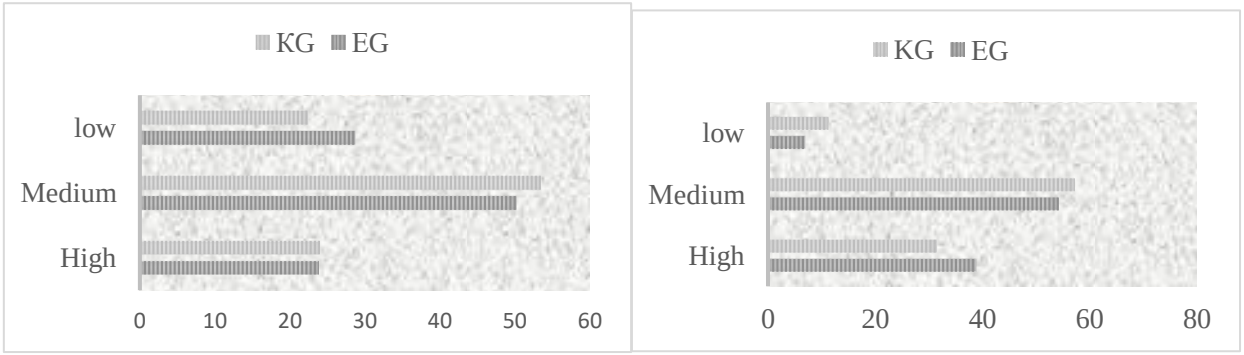

Fig. 2. The level of environmental awareness in future specialists and respondents of the CG before and after the experiment

The use of simulation modeling methods and a development program in experimental groups increased the level of occupational safety skills and abilities by 20% compared to traditional methods. Environmental awareness of future specialists is a key aspect of their training, which determines the ability to be aware of environmental problems and influence the environment.

A high level of environmental awareness is characterized by deep knowledge, critical thinking, participation in environmental protection activities, responsible consumption of resources, environmental behavior, increased awareness among the environment and understanding of the relationships between human activity and the state of nature. The average level indicates basic knowledge and interest, but insufficient activity or understanding of environmental issues. A low level of environmental awareness is characterized by a lack of interest in environmental problems, insufficient understanding of the importance of the environment and passivity in environmental protection activities. In the study, more than 60% of respondents with a low level of awareness did not show interest in ecology, and 93% were not ready for environmental protection activity.

Thus, the experimental work confirmed the effectiveness of the author's program for the development of students' environmental awareness. The program is based on the concepts of problem-based learning, simulation modeling and the case method, aimed at forming an ecological worldview and professional readiness of future specialists.

The level of environmental awareness is determined by the set of knowledge, beliefs and skills that shape the attitude towards the environment and readiness for environmental protection activities. It includes awareness of environmental problems, understanding the impact of human activity, personal values, support for environmental initiatives, compliance with environmental standards and active participation in environmental protection activities. Environmental education, integrated into all levels of education, forms environmental awareness and culture. In Ukraine, this has been a priority area of education since the mid-20th century, emphasized at the international level, in particular during the World Environmental Education Day. Environmental awareness can be assessed by motivational-value and practical-activity criteria that take into account interest in ecology, motivation, practical experience and the ability to make environmentally conscious decisions. Considering modern environmental problems only through the physical limits of growth (resources, pollution, population growth, nuclear weapons) is insufficient, since they are related to political, social and moral issues. The ecological crisis is a consequence of the wrong value orientation of man. A new approach to environmental preservation should be based on the harmony of man with nature, understanding the laws of the biosphere and the formation of an ecological worldview. Increasing environmental awareness contributes to a responsible attitude towards the environment and sustainable development of society, which requires a change in priorities in state policy, economics and law. The formation of ecological thinking of citizens is associated with a change in consumer stereotypes, which should begin in the eco-environment of higher education institutions.

From this we understand that the main task of modern higher education institutions is the introduction of effective teaching methods that activate student activity, combine learning with practice and improve professional skills. Students should have theoretical knowledge and practical skills that improve

working conditions and prevent professional risks. Environmental competence as a component of professional training encompasses knowledge of ecology, the ability to apply it in socio-cultural contexts, participate in environmental conservation and support sustainable development initiatives. The integration of environmental competence into training forms critical thinking, responsibility and civic engagement. The development of environmental competence is key to training specialists who adapt to socio-cultural changes and contribute to sustainable development, emphasizing the importance of an interdisciplinary approach and a comprehensive worldview.

Conclusion. Systematic research into the psychological foundations of the formation of an ecological worldview is important, as it allows us to understand the specifics of the thinking processes of future specialists and adapt educational approaches to their needs. Problem-based learning, which was the basis of the study, contributes to the development of critical thinking, independence and a deeper awareness of environmental problems, which are key aspects of professional training in a modern educational institution. The development of the "Program for the Development of Environmental Awareness of Students" is a significant contribution to the process of professional formation. An experimental study confirmed its effectiveness, demonstrating positive changes in the level of environmental awareness of respondents. This program not only forms knowledge and skills, but also fosters a responsible attitude towards the environment.

Prospects for further research. Further development of practical recommendations for teachers of Ukrainian higher education institutions will help integrate this program into educational processes and effectively implement it in problem-based learning, strengthening the role of environmental education in the professional training of specialists.

References:

[1] Ordatii N. M. Ekolohichni chynnyky psykhosomatychnykh dysfunktsii u studentiv zakladiv vyshchoi osvity: monohrafiia/pid kerivnytstvom Vizniuk IM Vinnytsia: Vyd-vo TOV «Druk», 2023, 260 [in Ukrainian].

[2] Viznyuk I., Ordatii N., Ordatii A. Ecological factors of psychosomatic disorders in the context of the transformation of the healthcare system. Modern Science – Moderní věda. Praha (Česká republika) : Nemoros, 2021, 4, 85-92 [in Ukrainian].

[3] Vizniuk I. Doslidzhennia vzaiemozviazku profesiinoi diialnosti osobystosti ta yii psykhosomatychnoho zdorovia. Zbirnyk naukovykh prats «Problemy suchasnoi psykholohii», 2009, 5, 23-27 [in Ukrainian].

[4] Vizniuk I. M. Sotsialno-psykholohichni osoblyvosti adaptatsii osobystosti v aspekti zberezhennia zdorovia. Teoretychni i prykladni problemy psykholohii, 2020, 19-22 [in Ukrainian].

[5] Vizniuk I., Volokhata K. Fenomen stiikosti yak zdatnosti formuvaty efektyvni metody podolannia nehatyvnykh eko-vplyviv. Osobystist i problemy navkolyshnoho seredovyshcha, 2023, 2 (5), 12-18 [in Ukrainian].

[6] Vizniuk I., Dolynnyi S., Volokhata K., Horbaniuk Ya. Faktory ekolohichnoi svidomosti v henezi psykhosomatychnykh dysfunktsii studentiv vyshchykh navchalnykh zakladiv. Osobystist i problemy navkolyshnoho seredovyshcha, 2022, 2, 9-14 [in Ukrainian].

[7] Vizniuk I., Ordatii N., Ordatii A. Ekolohichna svidomist studentiv VDPU imeni Mykhaila Kotsiubynskoho v umovakh karantynnykh obmezhen. Nauka i osvita, 3(CLKhKhKhVII), 2021, 38-45 [in Ukrainian].

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