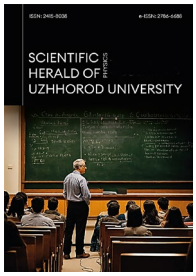
Scientific Herald of Uzhhorod University
Series "Physics"
Journal homepage: https://physics.uz.ua/en
Issue 55, 1640–1649
Received: 05.10.2023. Revised: 11.01.2024. Accepted: 04.03.2024



DOI: 10.54919/physics/55.2024.164ak0

Pedagogical requirements for developing a culture of environmental safety among students in the educational space of higher education institutions

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Abstract

Relevance Dynamic changes in social relations have a dramatic impact on the environment. This is evidenced by several factors revealing the detrimental impact of human, particularly professional, activities on the environment. The issue of relevance related to the development of ecological culture among young people is quite high today, both in scientific doctrine and among practitioners.

Purpose. The research aims to analyze the approaches to the formation of environmental safety culture within higher education institutions.

Methodology. To achieve it, a system of methodological tools was used, namely the method of analysis, synthesis, abstraction, comparison, deduction, and questioning.

Results. As a result, it was possible to conclude an in-depth analysis of the "ecological culture" concept, to investigate its main properties expressed in the educational environment. It was possible to reveal different approaches to effective development and provision of ecological safety in the university. In addition, recommendations for integrating students' knowledge about environmental safety into their future professional activities have been formed. It has been proved that the process of ecological culture formation in students should be proportional and interconnected with the study of other disciplines. Due to such an approach, it is possible to develop both personal qualities of students concerning the environment and prepare them for future professional activity. Consequently, the formation of quality environmental

Suggested Citation:
Dzhakupova I, Bozhbanov A, Assembayeva E, Almagambetova S, Sadykova Z. Pedagogical requirements for developing a culture of environmental safety among students in the educational space of higher education institutions. *Sci Herald Uzhhorod Univ Ser Phys.* 2024;(55):1640-1649. DOI: 10.54919/physics/55.2024.164ak0

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security in the university is the key to enhancing the role of principles that relate to environmental protection and ecology in general.

Conclusions. The practical value of the research is in the fact that the findings obtained therein can be effectively used by teachers and methodologists in the development or improvement of existing curricula in higher education institutions.

Keywords: university; educational-professional activity; environment protection; project technology; nature.

Introduction

The deteriorating environmental situation on the planet has created an urgent need to reform the learning environment in the context of the natural sciences and humanities. Technical professions are no exception, as they involve the preparation of students for a variety of professional activities, including those that are detrimental to the environment [1]. On this basis, the issue related to environmental safety covers all vectors of the educational process and concerns both the noosphere-humanitarian and ecological values of the society. That is why it is currently necessary to solve global environmental problems through educational work and the education of young people. The research problem lies in the assessment of the level of ecological culture of students and approaches to improve it [2].

The issue has long been studied in the scientific community, as environmental degradation has been traced back for more than a century. However, the issue of developing environmentally aware citizens, which is the key to the successful future development of the state, remains relevant. The positions of scientists have both common and distinctive features, which shows that the concept of environmental security and its properties are wide-ranging. S. Duisenova et al. [3] analyze the current state of the higher education system in Kazakhstan. They state that the environmental component has begun to play a special role in it. Undoubtedly, this has a positive impact on the development of both higher education and the level of ecological culture of young people, namely students. In turn, Z. Han and A. Xu [4] studied universal approaches to the organization of modern education systems. The researchers consider that the priority is the qualitative training of the young generation, which will have a thorough knowledge and understanding of how to overcome the ecological crisis. The authors argue that the formation of ecological culture is the responsibility of every conscientious citizen, which he/she should use both in everyday and professional life. A. Shafiei and H. Maleksaeidi [5], believe that environmental safety should be in several obligatory conditions, based on which it is possible to implement the educational process in a higher education institution. The subjects, who are responsible for its organization and provision, are not only the university administration but also teachers and even students. They reveal this process as an interconnected system, the activities of the participants of which should be dependent on each other.

In turn, C. Achille and F. Fiorillo [6] argue that the educational and professional training of students should be based on general principles. In other words, the formation of ecological culture should be separate from the mastering of knowledge on academic disciplines by students. Such a position is somewhat contradictory, as it excludes the possibility of organizing interdisciplinary links, which considerably complicates educational activity. Following N. Ross [7] the modern educational environment should comprehensively combine the principles that are necessary for both the professional and personal development of professionals. She argues that it is possible to overcome one of the pressing problems of our time, namely consumer attitude to the environment, through ecocentric education of students, and disclosure of the relationship between the individual and nature. Thus, the researcher does not attribute the formation of ecological culture to any of the vectors of learning activities, as she believes that it is an element of each of them. This position is important for future analysis of environmental education and the description of its structure.

Based on the above-mentioned, the research goal was formed, which was to study the pedagogical conditions, providing for organization and ensuring environmental safety in the higher education environment. For this purpose, the research objectives were developed, namely to describe the current state of ecological education; to reveal the peculiarities of students' development of ecological culture; to evaluate the factors influencing this process; to develop their approach to the formation of ecological safety in a higher education institution.

Materials and Methods

The method of analysis was used to assess and examine the concept of environmental security. It was used to describe its structure, namely such an element as ecological culture. It helped to reveal its content and main properties. It allowed the description of the essence, as well as the approaches influencing the formation of ecological safety. The method of synthesis made it possible to cooperate with the obtained results, i.e., to study how the concepts of ecological safety and educational environment relate to each other. It helped to identify their common and distinctive features, as well as to describe how environmental culture affects the educational and professional training of students. The functional analysis method was used to investigate the role of ecological culture in the educational process. It was used to establish the connection and dependence between different categories the professional competence of a teacher and the level of environmental safety of a higher education institution. Moreover, it was used to establish the relationship between the professional activity of future specialists and its impact on the environment. The logical analysis method helped to explore the problems that can be solved by developing an environmental culture in students. The method was used to investigate the factors influencing the formation of environmental safety and to determine the solution to urgent environmental problems.

The abstraction method was used to study the immediate category of "ecological culture". It allowed

focusing on its main properties and revealing attributes related to the peculiarities of its practical formation and development based on different conditions and factors. The comparative method was used to investigate different pedagogical conditions for the formation of ecological culture in the learning process. It allowed not only the comparison of their meaning and content but also to reveal the essential features. Based on this it was possible to evaluate and systematize the set of necessary conditions for the organization of the educational environment based on the basics of ecological safety. The method of deduction allowed the development of its approach to the formation of environmental security. On this basis, the general theoretical aspects studied in the research were used and specific recommendations for solving this issue were formed. Thus, it was possible to analyze the object of scientific work from general provisions to specific ones, which influenced the quality and practical value of the research.

Furthermore, a survey was conducted during the research. There were 86 students at Almaty Technological University, 1st-4th years of technical direction, namely 43 boys and 43 girls. The survey was conducted to adapt the developed project approach to the development of ecological culture among the students. The questions for the survey were the author's questions. The respondents answered closed questions, namely:

1. Are you interested in learning through project-based activities?

2. Does it help you to better learn and understand the subject matter of the projects?

3. Does fulfilling the tasks of the project have an impact on the creative development of your environmental culture?

The results obtained were presented as a percentage and were used to establish and evaluate the practical value of the developed approach. The essence of the survey is revealed in the fact that it allows the determination of the subjective attitude of education students to the development of their environmental culture, using project work as an example. Thus, both expediencies of using this educational approach in a higher education institution and students' attitudes to it, and their motivation for its implementation were described.

Results

Prioritizing environmental security in the university. Strategic ideas for solving pressing environmental problems are increasingly starting to focus on the development of social awareness, principles, and behavior. One of the main approaches for implementing the above-mentioned process is the development and implementation of a system of high-quality environmental education consisting of several important elements. These include environmental safety, culture, and education. Undoubtedly, overcoming the current crisis problems related to environmental degradation is a priority task for all categories of the population. However, young people, who are the future of the state, deserve special attention. The focus of such a population is higher education institutions, namely universities [8; 9].

To formulate qualitative recommendations for improving the ecological environment in the state, it is advisable to identify its main problems negatively affecting its future development. It is important to note that the environment is influenced by both objective and subjective factors. The first includes technological factors caused by human activities, the development of natural phenomena, and changes in the established way of life on the planet. No less important are subjective factors, which are expressed in the lack of a developed ecological culture, which affects the speed and efficiency of the solution of urgent problems. That is why the research on environmental security requires a systematic approach, which will include both methods to optimize the interaction between society and nature, and the development of machine tools to reduce the negative impact of human activity on the environment [10].

Thus, shaping environmental safety at university implies the development of environmental culture in students. This process stimulates the acquisition of knowledge necessary for environmental protection, both in everyday life and in professional life. This factor determines the complexity of the realization of such a pedagogical approach, as it includes two vectors. Provided its successful development within higher education institutions there will be an activation of the cognitive activity of the student, which will be aimed at environmental protection and rational use of its constituent elements.

Pedagogical conditions promoting the development of environmental culture in students. To achieve such a result, it is important to effectively organize the learning and educational activities of all actors in the learning environment. Thus, it is necessary to continuously search for modernized ideas based on which it is possible to logically combine the process of studying professional disciplines with natural disciplines. There is a question of changing and developing an algorithm for the professional training of teachers to teach them educational material in higher education institutions, with the provision of environmental safety. It is important to establish the content of the concept of "ecological culture", which is a fundamental element of the above-mentioned category. It should be defined as an isolated sphere of human spirituality, which consists of the evaluation and cognition of practices that determine the features of rational interaction of a person with the biosphere. The formulation of this definition is simple, but its content is quite broad, as it covers a system of processes and patterns. It is important for the teacher to perfectly understand its essence, properties, and attributes. This question is categorical because for the perfect development of ecological culture in students it is necessary to form proper educational and pedagogical conditions. Therefore, a certain regularity is traced, which consists of the interrelation of teachers' competence with the success of ecological safety formation in a higher education institution.

Based on this, the first pedagogical condition, which is responsible for students' acquisition of environmental culture, can be formed. It includes the professional competence of the teacher. It concerns both his skills and knowledge in an academic discipline and the ability to combine the learning process with the natural basics. Thus,

the modern teacher within a higher education institution has several tasks that define him or her as a specialist [11; 12].

The next requirement for shaping environmental security is the direct activity of the students. There is an increase in the number of educational tasks responsible for their acquisition of ecological culture. Their implementation must be consistent, as they are inherently hierarchical. First, it is necessary to develop students' love for the environment through different approaches. This stage is initial as it is impossible to develop an individual's attitude towards nature if it is neglectful. Then it is advisable to gradually apply methods of education based on the understanding of current and critical problems related to the state of the environment. By doing so, it will be possible to describe and fix in the minds of students the priority of environmental protection for humanity and the future development of the country. Based on gained knowledge students will start to develop principles of personal responsibility for the environmental state not only on a national but also on a global level. The result of the described algorithm is the mastery of quality and, most importantly, relevant scientific knowledge for the implementation of the structure "man-society-nature" by young people. Moreover, provided students are interested in this field, it is possible to motivate them to organize research activities. This will translate into the independent development of tools and approaches that can be used effectively in future professional activities [13; 14].

The role of project technology in the development of environmental security. In doing so, an approach to shaping environmental security at a higher education institution has been formed. It is based on the educational potential of the projects. The latter allows students to effectively apply ecological knowledge in practical professional activity. The project approach must not only form, but also motivate students for nature protection activities in different conditions. Thus, there is a simultaneous activation of the student's potential with the development of proper conditions for them to learn innovative methods and approaches to environmental protection in both domestic and professional activities.

Furthermore, the idea of providing project-based technology as an innovative model of scientific and vocational training will involve young people in overcoming priority local or common problems [15-17]. The developed approach implies using the environment as a laboratory, within which not only the student's environmental culture will be fostered, but also his/her cognition will be improved. Thus, the project technology stipulates the development within the educational environment of ecological projects, allowing it to acquire the features of innovation and development. The latter aims to create ecological motivation in students for learning activities, through their mastery of ecological knowledge and skills. As a result, young people are expected to acquire important experiences related to ecological research and, most importantly, a focus on the well-being of the natural environment.

Pedagogical conditions for student implementation of project activities. Special pedagogical conditions, which can be used for its implementation, have been described based on the disclosed approach to the formation of environmental safety in a higher education institution. First of all, it is necessary to significantly increase the volume of students' independent activity, especially when performing the tasks of the project activity. It is caused by the fact that independent work influences the consciousness of students with the aim of the continuous and systematic acquisition of ecological knowledge. This approach to the organization of learning activities implies effective self-organization of the student's environmental education work. As a result, they will be able to produce the title of a specialist with a highly developed degree of ecological culture. In this process, it is recommended to devote special attention to self-control and evaluation of own actions. This is caused by their ability to reveal the student's ability to conduct monitoring and evaluative reflection of their results.

Another pedagogical condition enabling the implementation of the proposed project approach to the formation of students' environmental culture is the interdisciplinary nature of the learning process. The application of interdisciplinary approaches to solving certain environmental problems and challenges is a fundamental element during the integration of ecological sciences into different professional subjects [18; 19]. Their interdependence plays an important role in the organization of both practical and scientific-theoretical training of students, as it implies the development of the ecological-cognitive activity. At the same time, students have to study a wide range of academic disciplines in the process of training, so they acquire a set of different knowledge and skills. This factor necessitates a logical and gradual integration of environmental science principles and approaches to the study of general subject disciplines. This method can be implemented by conducting a preliminary pedagogical analysis of the topic and identifying issues related to or affecting the ecological environment in it. Based on this, develop additional materials involving the interaction of the lesson with the phenomena of nature. It is advisable to organize such practical lessons that will simulate future professional activities of students so that they have an opportunity to independently establish and assess their negative impact on nature. It is advisable to organize such practical classes, which will simulate the future professional activity of students so that they could independently identify and assess its negative impact on the environment. When analyzing the potential for inter-subject links as one of the pedagogical conditions for environmental safety, it should be established that the scope of their use in the educational environment can be broad.

Examples of project technology in higher education. The theoretical component of the formed project approach has been characterized, and it is advisable to assess its practical value and application in higher educational institutions of Kazakhstan. It should be noted that the system of environmental education within this country is not yet holistic and interconnected. Therefore, it is expedient to develop it not only within the general educational process but also to apply approaches of non-formal environmental education, which in its turn could cover a set of environmental activities beyond the frameworks of academic education [20-22]. The project activity can be both creative and purely scientific in nature.

In both cases, this activity aims to develop the ecological culture of those involved in it. An example of project work for students is "Our Home is Our City". Its task is to monitor and assess the environmental problems of a certain city. Based on this it is possible to classify them according to the risk of the normal development of society [23]. In the course of such a project, it is appropriate for the students to use graphical materials, as well as to visualize the most effective approaches to solve them. The last stage plays an important role in the process of formation of students' ecological culture, as it implies not only the identification of crisis problems but also the implementation of research activities on overcoming them [24; 25].

Moreover, if a wide range of students develops an interest in carrying out project activities, a stand-alone environmental club can be formed based on the university. This will unite the students seeking an in-depth understanding of the field of ecology and current crisis issues. Group project work can then be organized, which will only improve the quality of environmental culture among the students. An example of another type of project activity is "Environmental challenges of my profession". Unlike the previous one, it involves students' analysis of the features of their future professional activity and its impact on the environment. In this project, they can establish based on which vectors environmental protection takes place in the enterprises that are potential employers for students. Consequently, it is advisable to implement this project activity within the group, through their visits to various institutions whose results are detrimental to the environment. In this way, the students will be able to objectively assess the algorithm of their future professional activity and clearly understand at which particular stages the attention to taking safety measures should be specified. At the end of the project activity, the teacher should give the students an independent assignment to describe their recommendations and ideas for improving environmental safety in the enterprises under study. As a result, the student develops an environmental awareness that enables him or her to use the theoretical knowledge of ecology in practice and contribute to the improvement of the environment.

Thus, it is proposed to form a stand-alone group course in the curriculum to organize project activities. Within it, students will be offered a list of activity directions. These could include:

1. Environmental problems caused by future professional activities.
2. The state of the environment in the selected region.
3. Specifics of environmental protection in Kazakhstan at the national level.
4. Perspectives on implementing professional tasks and protecting the environment at the same time.

It is important to use a system of methods in these project activities. These should include both theoretical and practical methods, namely: comparison; analysis; questioning; modeling; experiment; observation. Students should be assessed based on three levels. "Low" level is characteristic of students who show little activity during classes. They have a low ecological culture and lack the motivation to protect the environment in the future. "Middle" level corresponds to the category of students who use the theoretical knowledge obtained in practice. They can carry out an analysis but are not able to evaluate the obtained results. Thus, their work lacks the authors' recommendations for increasing environmental safety, including in professional activity. "High" level characterizes an individual who can independently analyze the current state of the environment, establish the source of crisis problems, and suggest ways to solve them. Such students can graphically demonstrate their ideas and determine the probable result of their implementation. To determine the practical value of the proposed approach, students' opinions on the priority and role of project activities at a higher education institution were examined. Thus, a survey was organized (Table 1). 86 students were studying at the Faculty of Technology.

Table 1. Representation of respondents' answers to the survey

No. of question	Question	Answer, %	
		Yes	No
1	Are you interested in learning through project-based activities?	92	8
2	Does it help you to better learn and understand the subject matter of the projects?	89	11
3	Does fulfilling the tasks of the project have an impact on the creative development of your environmental culture?	84	16

Based on the successful survey results obtained, it can be established that the described project technology for shaping environmental safety among students is valuable and effective. Its development and further improvement will significantly increase the level of ecological culture among the students, as well as solve the environmental crisis problems.

Discussion

The issue of environmental safety in the learning environment, at higher education institutions, has received considerable attention in scientific doctrine. At the same time, researchers reveal it from quite different angles, e.g., in the context of training future teachers or, on the contrary, training students in technical fields. This demonstrates the relevance and multidimensionality of the topic under study. For example, A.C. Hadjichambis and D. Paraskeva-Hadjichambi [26] studied the process of environmental safety formation in pedagogical universities. They argue that the preparation of future teachers is a complex process, as it requires not only the acquisition of quality knowledge by students but also skills for its reproduction and implementation in professional activity. Researchers believe that the most important element of quality environmental education is the direct activity of a student. It proceeds from the fact that its different types interact effectively with each other, moreover, they are in a certain dependence. In particular, the educational activity allows students to master the main aspects of the theory and

practice of their profession. In this process, it is fundamental for all actors in the learning environment to understand the priority of society's interaction with nature [27]. To this end, it is appropriate to provide learning materials that enable students to master the qualitative techniques of causal thinking directly in the field of social ecology. Such a position should be supported since the formation of the environmental security is a priority task for higher education institutions [28].

In turn, K. Larson [29] analyzes this issue from a practical perspective. She considers the use of games as an effective tool in the educational and professional training process, as they help future professionals to adapt theoretical knowledge to professional employment. In addition, through this approach, the education aspirant will be able to gain the necessary experience to make environmentally sound decisions. As a result, it will not only develop the level of environmental security in higher education but also enable the students to consider various environmental issues and problems from the perspective of their future profession. This position correlates with the results obtained in this research, as it also describes the priority given to the environmental culture acquired by the student, which depends on the level of environmental security in the university. Thus, the scope of subjects able to make logical environmental decisions and protect local ecosystems is expanded.

A similar position on the priority of environmental security in the university is followed by P.M. Castellanos and A. Queiruga-Dios [30]. They emphasize that this concept is a holistic process consisting of a set of structural elements. This cultural phenomenon should be aimed not only at developing environmental security, but also at improving and transmitting environmental culture among students. On this basis, environmental security is a promising approach to national and citizenship education. In this case, all categories of the population are concerned. However, higher education institutions deserve special attention, as they are the center of student youth. It is this layer of society that is the most modernized, so influencing it and developing an ecological culture will improve the overall state of ecology in the state [31]. However, this approach is based on stereotypical views. This is reflected in the fact that the category of youth does not include only students, so this argument is not determinative when describing environmental security. It is appropriate to focus on the fact that it is within the university that both the personal and professional development of individuals takes place simultaneously. Due to the established environmental security within the university, there is a simultaneous positive impact on these two vectors [32].

P. Pihkala [33] argues that environmental education is of practical importance at this time, in an increasingly globalized environment. Following him, based on the environmental knowledge acquired in a proper environment, students will be empowered to design and provide sustainable and, most importantly, highly productive agroecosystems on their own. The issue is topical, which is reflected in the general public's awareness of its importance for future existence and development. It draws attention to the need to develop both a personal ecological attitude and a professional one. The latter involves the implementation of acquired environmental knowledge into the future employment of the individual. To achieve this goal, practical approaches, such as internships, should be used to expose the student directly to innovative tools related to environmental protection and the reduction of the negative impact of various industrial and other types of facilities [34].

Following P.R. Guimaraes [35], the socio-pedagogical structure of ecological culture should consist of several principles and foundations, incorporating ideas and issues that respond to the current conditions of social development. The point here is that the formation of quality environmental security should take place based on an assessment of the current state of the historical era [36]. This will allow identifying existing problems, and the introduction of measures to prevent their occurrence in the future, i.e., preventive function will be implemented. The researcher believes that the modern scientific and pedagogical community reveals educational and professional training considering a set of external factors. Accordingly, special attention is devoted to the sphere of environment, as it covers the age, as well as social, and professional categories of society [37]. Indeed, modern approaches to the education and training of future specialists involve a logical combination of objective and subjective approaches. Therefore, in the process of organizing and providing the educational environment, it is important to develop both the professional competence of students and their personal qualities, which include ecological culture.

In contrast to previous researchers, Y. Georgiou et al. [38] believe that the formation of environmental safety and culture is the responsibility of the teacher. They argue that it is one of the pedagogical tasks of the learning process. The teacher should not only provide teaching materials but also integrate them into the context of students' future professional activities. The issue of ecological consciousness formation among young people is not an exception. The teacher must justify the priority of acquiring knowledge on ecology, which is necessary for the everyday life of every citizen. In addition, the teacher should disclose the particularities of their future profession and its impact on the environment. By doing so, it will be possible to demonstrate to students the possible negative impact on the state and the world's ecology. The main thing in this process is to demonstrate how such impact can be minimized and what tools can be used to maintain the ecological environment at an appropriate level [39]. The teacher is undoubtedly responsible for developing an environmental culture in students, but it is important to understand that this is not solely the teacher's task. This is because obtaining an effective result is possible through a comprehensive approach and systematic influence on the student's consciousness. However, it should be agreed that it is necessary not only to reveal the negative aspects of the future professional activity of an environmental specialist but also to provide recommendations for its minimization.

The organized discussion confirms the position that developed environmental safety in higher education institutions is a prerequisite for providing a quality educational environment. The revealed opinions and ideas of the researchers are similar, concerning the issue of priority of students' ecological culture both for their future professional activity and personal development.

Conclusions

As a result of the conducted research, it was possible to reveal the main pedagogical conditions influencing the organization, as well as the development of environmental safety in a higher education institution. The work has proved that ecological culture is an important component of the above-mentioned concept. The level of its development affects not only the future professional competence of the student but also his personal development and understanding of the current state of the environment. Thus, the research described two general pedagogical requirements, which include the teacher's skills and knowledge and the student's attitude towards ecology in general. The first consists of the teacher's ability to form effective interdisciplinary links, teach learning material systematically, addressing current topics in ecology. It is important to have a developed understanding and awareness of the priority of such components as an ecological culture for the development of the educational environment. As for students' personal qualities concerning acquiring knowledge and skills in ecology, they are quite different. For this purpose, a step-by-step algorithm has been proposed, providing for gradual involvement and development of ecological safety in the educational process. It entails firstly introducing and developing students' motivation to protect the environment. Then comes the mastering of knowledge on ecological culture by students and its application in educational and professional activities.

Moreover, in the research organization, the project technology was analyzed, the aim of which is to form and ensure ecological safety in a higher education institution. It has been established that the use of project activity in the educational environment is positively reflected in the level of ecological culture of students. The latter is characterized by the development and quality of ecological knowledge, skills, and abilities, which a student obtains through the implementation of various environmental activities. As a result, such individuals can make informed decisions and solve complex problems, including those related to ecology. A survey was conducted to determine the students' opinions on the possible use of project technology in the educational process. The implementation of this approach is expected to be wide, and most importantly effective involvement of students in environmental education activities. This will allow the development of an active environmental stance, which will influence the development of a fundamentally new relationship with nature. All this will increase the dynamics and quality of the resolution of environmental crisis problems. In the future, it is advisable to consider ways of enhancing students' environmental culture based on digital technologies.

Acknowledgements

None.

Conflict of Interest

None.

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Педагогічні вимоги до формування культури екологічної безпеки у студентів в освітньому просторі закладів вищої освіти

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Анотація

Актуальність Динамічні зміни в суспільних відносинах мають драматичний вплив на навколишнє середовище. Про це свідчить низка факторів, що виявляють згубний вплив людської, зокрема професійної, діяльності на навколишнє середовище. Питання актуальності, пов'язане з розвитком екологічної культури серед молоді, сьогодні є досить актуальним як у науковій доктрині, так і серед практиків.

Мета. Метою дослідження є аналіз підходів до формування культури екологічної безпеки у вищих навчальних закладах.

Методологія. Для досягнення поставленої мети використано систему методологічних інструментів, а саме метод аналізу, синтезу, абстрагування, порівняння, дедукції, анкетування.

Результати. У результаті вдалося зробити висновок про глибокий аналіз поняття "екологічна культура", дослідити її основні властивості, що проявляються в освітньому середовищі. Вдалося виявити різні підходи до ефективного розвитку та забезпечення екологічної безпеки в університеті. Крім того, сформовано рекомендації щодо інтеграції знань студентів про екологічну безпеку в їхню майбутню професійну діяльність. Доведено, що процес формування екологічної культури у студентів повинен бути пропорційним та взаємопов'язаним з вивченням інших дисциплін. Завдяки такому підходу можна розвивати як особистісні якості студентів щодо довкілля, так і готувати їх до майбутньої професійної діяльності. Отже, формування якісної екологічної безпеки в університеті є запорукою підвищення ролі принципів, які стосуються охорони довкілля та екології в цілому.

Висновки. Практичне значення дослідження полягає в тому, що отримані в ньому результати можуть бути ефективно використані викладачами та методистами при розробці або вдосконаленні існуючих навчальних програм у вищих навчальних закладах.

Ключові слова: університет; освітньо-професійна діяльність; охорона навколишнього середовища; проектна технологія; природа.