MOdell of the formation of a student's environmental culture in the educational environment of a technical college

Abstract. The article examines ecological culture as a system consisting of three blocks, which is a single whole. It was established that these are: the culture of a person’s attitude towards nature (which reflects the ecological knowledge gathered by mankind), the culture of a person’s attitude towards society, other people (which reflects the driving force of the individual, the principles of organizing activities based on knowledge of the laws of nature use and the possible consequences of one’s behavior for other people), and the third block is the culture of attitude towards oneself (which expresses the peculiarities of a person's spiritual world, his individual position and the ability to make decisions independently, the presence of beliefs and needs regarding the environment). Only under the condition of combining all three isolated components can we talk about ecological culture, which regulates interaction with the environment, and in the most complete understanding of this concept.

A scientifically based and developed model of the formation of the environmental culture of education seekers in the educational environment of a technical college, which consists of target, methodological, procedural, substantive and effective blocks. Determinant scientific approaches to the development of the model are professionally oriented, personally oriented, communicative and active. The developed technology of implementation of the model of formation of ecological culture of education seekers in the educational environment of the technical college was implemented in the educational process of the technical college in stages (motivational-cognitive, communicative-oriented, professional-modeling stages). For each stage, a goal was determined, which was specified in tasks, pedagogical conditions, forms, methods, means of work, and the expected result was predicted.
Keywords: education seekers, technical college, model of formation of ecological culture of technical college students, ecological culture, teaching methods.

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МОДЕЛЬ ФОРМУВАННЯ ЕКОЛОГІЧНОЇ КУЛЬТУРИ СТУДЕНТІВ ТЕХНІЧНОГО КОЛЕДЖУ

Анотація. У статті розглянуто екологічну культуру як систему, що складається з трьох блоків, що є єдиним цілим. Встановлено, що такими є: культура ставлення людини до природи (що відображає екологічні знання, зібрани людством), культура ставлення людини до суспільства, інших людей (що відображає рушийну силу особистості, принципи організації діяльності на основі знання законів природокористування та можливих наслідків своєї поведінки для інших людей), і третій блок – культура ставлення до себе (яка виражає особливості духовного світу людини, її індивідуальну позицію та можливість самостійно ухвалювати рішення, наявність переконань і потреб стосовно навколишнього середовища). Тільки за умови поєднання всіх трьох виокремлених складових можна говорити про екологічну культуру, що регулює взаємодію з навколишнім середовищем, причому в найбільш повному розумінні цього поняття.

Модель формування екологічної культури здобувачів освіти в освітньому середовищі технічного коледжу розроблялася з урахуванням таких принципів: гуманізації; природо-відповідності; культуро-відповідності; краснінавчий; міждисциплінарних зв’язків; системності; комплексності та безперервності екологічної освіти; пріоритетності екологічних знань в системі виховання й освіти; відкритості та доступності екологічної інформації; гласності та доступності екологічної інформації; гласності під час розроблення та реалізації політики в сфері екології; спрямованості на стимулювання конкретної діяльності з розвитку системи екологічної культури.

Розроблена технологія реалізації моделі впроваджувалася в освітній процес фахового технічного коледжу поетапно (мотиваційно-когнітивний, комунікативно-орієнтований, професійно-моделюючий етапи). Для кожного етапу було визначено мету, завдання, педагогічні умови, форми, методи, засоби роботи, прогнозовано очікуваний результат.
Key words: educational institutes, technical college, model of the formation of ecological culture of technical college students, ecological culture, methods of learning.

Formulation of the problem. In the education system, the purposeful interaction of teachers and students of the technical college is aimed at the formation of a harmonious personality of the students, in the development of its value-meaning sphere, in the form of communicating spiritual, moral and national values to it.

The problem of the relationship between man and nature is not new, it has always been there. However, now, the ecological problem of the interaction between man and nature, and even the impact of human society on the environment, has become very acute and has acquired enormous proportions. The planet can be saved only by the activities of people, carried out taking into account a deep understanding of the laws of nature, taking into account the numerous interactions in natural communities, realizing that man is only a part of nature. This means that the ecological problem appears today not only as a problem of preserving the environment from pollution and other negative effects of human economic activity on Earth. It grows into a problem of preventing the spontaneous impact of people on nature, consciously, purposefully, systematically developing interaction with it. Such interaction is feasible if each person has a sufficient level of ecological culture, ecological consciousness, and the formation of which begins in childhood and continues throughout life.

Researcher I. Stetsenko concluded in the study that "modeling is the most effective way to study complex systems of various purposes - technical, economic, ecological, social, informational - both at the stage of their design and during operation. The possibilities of modeling systems are far from exhausted, therefore the newest modeling methods and technologies are constantly appearing" [3, p. 7].

We are impressed by S. Vitvitska's opinion that "pedagogy uses all possible types of models and simulations. The term "model" in pedagogical science denotes "some" actually existing system or one that is imagined in thoughts, which, replacing and reflecting in cognitive processes another system - the original, is in a relationship of similarity (similarity) with it, thanks to which the creation of a model and its scientific justification makes it possible to obtain new information about the original" [4, p. 22].

The purpose of the article is to substantiate the positive dynamics of the formation of the ecological culture of students of the technical college.
We will present a model of the formation of a student's ecological culture in an educational environment. The model has several applications: firstly, it clearly defines the components that make up the system, secondly, it schematically presents the connections between the components, thirdly, the model generates and gives rise to questions, it becomes a tool for the comparative study of various branches of the phenomenon, process. Modeling is the reproduction of the characteristics of one object on another, specially created for their study [1, 2].

This interpretation of the model allows you to abandon a more detailed description of characterological traits, abilities, and the definition of the mechanisms of its functioning, and focus your attention on the essential, most significant properties for the modeled object. We will reveal in more detail the structure and content of each of the components of the model of the formation of the ecological culture of education seekers in the educational environment of a technical college (purpose, tasks, approaches and principles, content, forms, methods, techniques, means, criteria, indicators, levels, result) [1, 3, 4].

Teaching methods should be understood as methods of professional interaction between the teacher and students for the purpose of solving educational tasks. Reflecting the dual nature of the pedagogical process, methods are one of those mechanisms that ensure the interaction of the teacher and his pupils. This interaction is not built on the basis of parity, but under the sign of the leading and guiding role of the teacher, who acts as a leader and organizer of the activities of the students. The most common methods of environmental education are conversation, preparation of abstracts, presentations, creative projects, etc., i.e., those that form the skills of searching and systematizing information. However, in my opinion, for the formation of ecological culture and consciousness, it is also appropriate to use forms and methods aimed at the development of motivational-value and behavioral-active components of ecological consciousness and culture, in particular [3, p. 95]:

- research;
- posing problematic tasks, the answers to which the students of education find during the class, analyzing and summarizing the information received;
- interactive methods: brainstorming, study of specific situations, discussion of a critical phenomenon, group discussion, role-playing, simulation, seminar, group projects, thanks to which the source of information, bearers of environmental norms and requirements are the students themselves, and environmental norms
and requirements are perceived as their own choice and decision, which is a much more powerful incentive than external coercion;
- use of informational computer technologies, multimedia support of educational classes;
- involvement of students in the public environmental movement, active participation in various environmental protection measures;
- extracurricular work (conferences, seminars, quizzes, group work, electives).

Among the methods and techniques, we especially highlight the methods of interactive learning, dialogue, problem presentation of the material, ecological game, ecological design and methods of moral activation of the individual.

The theoretical understanding of the study of the problem of the formation of ecological culture and the analysis of scientific and methodological literature allowed the creation of a model of the formation of ecological culture of technical college students (Fig. 1), which includes target, analyzed, theoretical and methodological blocks [1, 3, 4].

![Diagram](image)

**Fig. 1. A model of the formation of a student's ecological culture in an educational environment**

*The target block* of the model, within which the issue of social order is clarified, that during the development of the goal, approaches to understanding the goal as an ideal, consciously planned result of the educational process in relation to the actions that generate it and pedagogical
conditions were studied. In this regard, the goal in its general form provides for the expected ideal result of the pedagogical process - the formation of the ecological culture of technical college students. The task is defined as: formation of ecological knowledge and ideas about ecological values; formation of an emotional and valuable attitude towards nature; development of the ability to follow moral values in behavior; competitive college graduates with a formed environmental culture, who are able to learn throughout life, think critically, set a goal and achieve it, work in a team, communicate in an informational environment, be personally responsible for the preservation and restoration of the natural environment, the careful use of its resources, and the goal of forming an ecological culture of technical college students, reveals the purpose of training students in the educational environment of a technical college.

The analyzed unit is based on the general didactic and specific principles of education (humanization, environmental compatibility, cultural compatibility, local knowledge, interdisciplinary connections, systematicity, complexity and continuity of environmental education, prioritization of environmental knowledge in the system of culture and education, openness and accessibility of environmental information; transparency during development and implementation of policy in the field of ecology; aimed at stimulating specific activities for the development of the ecological culture system).

The theoretical-methodological block, through the main provisions and outline of methodological approaches to the implementation of general didactic and specific principles of the formation of the ecological culture of technical college students, directly affects the structure and character of the content-technological block of the model. It covers the main provisions of the formation of the ecological culture of technical college students and determines the choice of a theoretical and methodological strategy, which can be used for one or more approaches to research.

We believe that axiological, cultural, personally oriented, systemic, and environmental approaches are productive for solving the problem of the formation of ecological culture in the educational environment of the technical college, which are the basis of the methodological and worldview orientation of the formation of the ecological culture of the students of education [2, 4].

The axiological approach consists in affirming a person as a bearer of basic universal values, as the highest value, as a subject capable of
organizing his activities in the world on the basis of moral ideals, moral attitudes and moral norms. The axiological approach allows you to choose the content of education, from the point of view of the opportunities inherent in it to promote the development of empathy, emotional sensitivity of technical college students. It is focused on a system of values (life, nature, beauty) characterized by a spiritual and moral attitude to the surrounding natural world, a sense of personal interest in the harmonious development of society, nature and responsibility for the state of the environment. Considering the harmony of man and nature as a leading moral value, we single out the axiological approach as a priority, emphasizing its special role in the formation of the ecological culture of students in the educational environment of a technical college [2, 4].

Cultural approach. The source that "feeds" the formation of personality aimed at ecological values is culture, as the driving force of evolutionary development; as the custodian of all the moral wealth accumulated by humanity during its development. During this, the main values are the student of education as a subject of education, culture as an environment that grows and nourishes the individual. The interpretation of the formation of the ecological culture of the students of the technical college from the standpoint of a cultural approach allows us to more deeply consider the causes of global problems of today and teach how to solve them on the basis of the formation of the value attitude of the student of education towards himself and the surrounding world [2, 4].

A personally oriented approach is aimed at personal development as a process and result of mastering socially significant activities in relation to the natural environment, developing one's own worldview concept, building an individual trajectory of interaction with the surrounding natural environment. With this approach, attention is focused on the student of education, they take care of the development of the personality with emotional resources and development opportunities.
Positive dynamics of the formation of the environmental culture of students of the technical college "before" and "after" the experiment (Ex.)

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The most important tasks of the system approach include: development of means of presentation of researched and constructed objects as systems; construction of generalized system models, models of different classes and specific properties of systems; study of the structure of systems theories and various system concepts and developments [2, 4].

Thus, the environmental culture of a technical college student (environmental education, environmental awareness and environmental protection activities) is formed through certain forms and methods that characterize the model of effective formation of the environmental culture of students in the educational environment of a technical college. In order to
determine the positive dynamics of the formation of the ecological culture of the students of the technical college "before" and "after" the experiment, criteria were developed (motivational-value; cognitive; activity-practical; emotional-volitional; reflexive-evaluative) for its thorough evaluation in the students of education.

The positive dynamics of the research results (Table 1) was evidenced by the increase in the level of formation of the environmental culture of technical college students, which is not a random phenomenon, but is caused by the implementation of the model of formation of the environmental culture of technical college students among the respondents. The implemented model is representative, it can be represented for wide use in the professional training of future technical specialists in technical vocational colleges, and with certain restructuring - also in other specialties.

**Conclusion.** Ecological culture is an important element of the general culture of humanity, which includes the result of human activity to transform the natural environment in accordance with the physiological and social needs of a person; characteristics of the level of development of environmental awareness of social subjects, starting with the individual, ending with humanity as a whole, and the creative activity of society in the course of developing the natural environment, in the process of which ecological values are produced, preserved and distributed.

The implementation of the theoretical analysis of the problem of the formation of the ecological culture of the students of education in the educational environment of the technical college, the substantiation of its methodological aspects, the presentation of the model of this process, became possible thanks to the introduction of the author's program into the educational process. During the organization of the pedagogical experiment, the possibilities of invariance and variability of the formation of the environmental culture of education seekers in the educational environment of the technical college were taken into account, based on previously made theoretical generalizations and the peculiarities of implementation in a specific institution of vocational pre-higher education.

One of the main requirements for the development of the pedagogical experiment program was that it could organically fit into the work system of technical colleges, contributing to the ecological development of students. The main pedagogical tools and methods used in practice for the formation of the environmental culture of students of the technical college were selected, planned pedagogical observation, consideration of the curriculum and the work program of training students of the technical college for environmental activities, questionnaires, surveys, conversations were used.
References:


Література:


