ENVIRONMENTAL SECURITY PROBLEMS: HOW CAN THE ENVIRONMENTAL COMPETENCE OF STUDENTS BE IMPROVED?

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Abstract

Relevance. In the context of the aggravation of global environmental problems in the world, mechanisms for the formation of a culture of environmental safety (SEB) of students of higher educational institutions have been introduced into the educational process. The Stockholm and Rio de Janeiro Declarations on Environmental Protection and the UN General Assembly Resolution on the Map of the World's Nature state that ensuring the ethical, axiological, cognitive and active components of environmental safety is an important task. Based on the theory and practice of sustainable development, it is important to form a culture of environmental safety in modern conditions of the growing need for training specialists who are able to independently solve economic and environmental problems.

Aim. The aim of the study is to improve the system of forming a culture of environmental safety among students of technical universities.

Methods. The study used pedagogical observation, expert assessment, theoretical analysis, comparative typological and analytical methods, interviews, questionnaires, question-answer, generalization, mathematical and statistical analysis and experimental methods.
Results. The theoretical ideas and recommendations presented in the dissertation serve to improve the educational and methodological support of the system for the formation of a culture of environmental safety, a culture of environmental safety, “geoethics” and “ecohumanization” in education, high-quality competence of technical personnel, and the transition to multidisciplinarity, teaching ecology, education and enrichment of the technical education system by clarifying the scientific definition of the concepts of the integrity of practice, identifying conceptual approaches and modern trends in the content of environmental education.

Conclusion. Recommendations have been developed for improving the content of education, which serves to form a culture of environmental safety.

Keywords: ecology, student, culture, ecological safety, ecological environment.

Introduction

Research is being carried out all over the world to improve the components of environmental education, the rational use of natural resources and the protection of the environment. The development of environmental ethics, law and education, the transition of production to waste-free technologies, the improvement of the theoretical foundations of alternative energy and closed-circuit technologies are important for the future of countries. Raising the categories of the culture of ecological safety, ecological thinking and moral qualities of the individual, ensuring the ecological imperative is recognized as the most urgent task for the future of mankind.

In Uzbekistan, ecology and environmental protection are developing as an integral part of the continuous education system. The Concept of Continuous Environmental Education has also been implemented, the content of environmental education is being improved, and the material and technical base is being
modernized. The strategy of actions for the further development of the Republic of Uzbekistan defines "the prevention of environmental problems that damage the environment, public health and the gene pool" [1] as an urgent task. Thus, the assessment of ecology as an interdisciplinary field, the moral essence and modern content of ecology, the use of innovative thinking and new approaches to the educational process serves to ensure the effectiveness of environmental education.

**Materials and methods**

The study used pedagogical observation, expert assessment, theoretical analysis, comparative typological and analytical methods, interviews, questionnaires, question-answer, generalization, mathematical and statistical analysis and experimental methods.

**Review and Discussion**

*Literature Review*


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Yu.A.Nikitina, R.Pazova, A.Ryabov, T.S.Khazikova, V.V.Chervonetsky and others studied the issues of forming a responsible attitude to the environment, interdisciplinary integration in teaching ecology, development of ecological thinking.

A. Blackman, M.Gray, J.Solomon, Shing Jung, K.Harding, S.S.Haugen (USA) conducted research in the theoretical and practical study and development of ecological culture and its social problems, the content of geoethics and socio-pedagogical conditions V.Nemets, L.Nemtsova (Czech Republic), A.Trembetskiy (Poland), F.Wilke (Germany), J.Busak (France), I.Martinez (Spain), G.Gold, M.Komarov, also, the research work of N.Shilin (Russia), V.Gura (Ukraine) was of great importance.

In the "Strategy of actions on five priorities for the development of the Republic of Uzbekistan for 2017-2021" [1], the priority of national security is to ensure the environment, safe public health and the gene pool. It was noted that prevention of problems is one of the most important tasks of our time. The strategy emphasizes that three essentially related concepts that have existed until now, namely man, his safety of life and ecology, are interconnected, and safety is the most important requirement among the opportunities created for human life. It was emphasized that the concepts of man, ecology and safety are mutually agreed and interrelated concepts in one social cluster [11]. In this way, the environmental education strategy was integrated with the national security strategy, and the establishment of the CES became an urgent pedagogical requirement [12].

In his address to the members of the Senate and the Legislative Chamber of the Oliy Majlis, Mirziyoyev proposed to declare 2018 the Year of Active Entrepreneurship, Support for Innovative Ideas and Technologies [2].
As the First President of the Republic of Uzbekistan I.A.Karimov noted, “the protection of the ecology and the preservation of the environment ... in modern conditions of abnormal natural changes ... are of great importance” [3].

During the years of independence, environmental education in Uzbekistan has been further developed and has become an important part of state policy. In recent years, various threats to human life have increased, the content, nature and structure of these risks have radically changed. As the content of environmental education improves, new terms appear [13, 14, 15].

Over the past 50-60 years in the social space, the content of the concept of ecology has expanded, branched out, systematized, embraced and improved new concepts. One of them is CES, which has become an urgent socio-pedagogical task. [4; 63]

Today, the balance between man and the biosphere is disrupted, and unexpected threats to human life (countries, regions, societies, the integrity of the Universe, the environment) arise. They pose a reasonable threat to human conditions. If earlier the environment was the number one priority in ecology, today the human factor is perceived as the most important value. Preventive prevention of threats to human life is of great socio-political importance. Living in a safe environment is considered a great value, and the CES is one of the most important human rights instruments [16]. Values that exist to this day, that is, a person, his living conditions, environmental education, intertwine, unite on the basis of the concept of security and acquire unity, that is, integrity.

In the 21st century, human civilization has reached such a level of its historical and economic development that it is necessary to find answers to the questions of how to live in the future, how to live and what is its dynamics [17]. Humanity is required to determine the factors of development a century ago, possible threats to
human life and be prepared for them today. Therefore, the term "sustainable development" was proposed by the International Congress in Rio de Janeiro.

One of the strategic tasks of modern technical education is not only to fully adapt to rapidly changing environmental conditions, but also to be ready for various threats and transformations, to find alternative solutions to negative and ultra-negative, rapidly changing nature. environment, training staff who are not afraid to make decisions in emergency situations and can ensure sustainable development.

Academician N.N. Moiseev proposed the term “co-evolution of man and the biosphere” [5; 88-99]. For sustainable human development, it became necessary to take into account the influence of environmental conditions on him, and not on himself. If the term "ecology" until recently mainly referred to environmental degradation, damage caused by humans in this process, then in "sustainable development" - to ensure the sustainability of human life. In N.N. Moiseev's proposal, safety was associated with the biosphere as a prerequisite for human existence, given that human development occurs today in the biosphere, and that man is also an element of it.

At the same time, in our opinion, the current reality confirms that, on the one hand, CES is a spiritual value; on the other hand, CES is a moral category; on the third - the socio-economic category. In the relationship between man and nature, there are two sides in it as in the category of morality:

• one is positive, this is the process of understanding the blessing of life in existence and its diversity as a human value and unconditional adherence to it;

• the second - negative (extremely negative) - morality based on human egoism, the destructive idea that existence is a treasure for a person, a treasure of interests, a belief in neglect of the environment.
In this regard, mankind should focus on the installation of the CES, abandoning the mistakes made in relations with nature, compensating for them, abandoning various experiments on humans and nature. Human life today can be ensured only by abandoning the goal of turning the environment into economic, spiritual waste, created by human hands. Therefore, it is necessary to develop a system of preventive prevention of existing threats in the trinity of "man-society-nature", to take measures to prevent biogenetic and man-made threats to human life.

Environmental education is one of the most important aspects of the educational process, which covers the entire society, the education system, as well as the family, school and civil society institutions.

Accordingly, mathematical modeling of environmental problems, systematic analysis of risks, their forecasting using the theory of probability, study using scholastic and statistical methods are of great importance [6; 154].

However, not every state can carry out such a comprehensive analysis. For example, the "systematic study" of ecology was created by the scientific group of N.N. Moiseev [5; 88-99]. Its name is Systemic Ecology. This group predicts environmental disasters based on the theory of probability. There is also the idea of systematizing the regulatory framework of ecology and ecosociology [7; 83]. The systematic study of political, economic and ideological factors in the organization of environmental protection is widespread.

Today they refuse to interpret ecological culture in a narrow sense, that is, only in the concept of spirituality and morality. Environmental culture is not just a spiritual phenomenon, a social phenomenon, a political phenomenon, or a pedagogical phenomenon. Ecological culture turns out to be a phenomenon of human activity associated with the ecological environment of society.

Consequently, a specialist with CES:
a) has full knowledge, skills and competencies in his area of specialization;

b) foresee potentially dangerous situations in the field of their specialization, be able to prevent them, have the skills not to harm nature, know the ways, means, forms and methods of compensation and mitigation of the consequences of harm;

c) know how to get out of dangerous situations, make decisions quickly; know the way, means, form, methods of solving the problem;

d) be able to communicate with nature, have emotional knowledge, skills, be kind to the environment, enjoy nature;

e) must protect others from mistakes by showing proactive attitude and attitude in the event of damage to nature.

Scientists today advocate an ecocentric system of environmental education and training.

Analysis of the practical situation of computer formation among students of technical universities showed the following inconsistencies, inconsistencies:

The contradiction between the pedagogical goals proclaimed in society about the priority of environmental education and the current CES, the pedagogical strategy of its formation;

The need to create a computer, the growing public demand for a computer, the need for a computer for a technician, but the lack of sufficient research in this area;

The growing socio-pedagogical demand for the formation of, but the lack of methodological strategies, innovative technologies and interactive methods of its formation;

The innovative characteristic of CES, in our opinion, requires the elimination of the aforementioned inconsistencies, as well as the solution of existing
environmental problems in our region, their close connection, the adoption of measures to prevent their aggravation and associated with environmental economic goals.

On the other hand, today our national education system is being integrated into the world education system. The task is to introduce world experience. It is in this process that another feature of lameness manifests oneself. Unfortunately, it is true that we are lagging behind in relations with the world's educational centers.

The practical ecological structure of ecological problems of foreign countries of the West is studied. Environmental protection is, first of all, a set of measures to prevent the negative and extremely negative impact of human activities on nature. In English-speaking countries, a new general term is used - the term "environmentalism" ("environmentalism" actually comes from the word "environment"). The term corresponds to the Uzbek word "ecological science" [8; 9; 32; 21; 22]. Today's development and widespread ramification of environmental movements are inextricably linked with the processes of globalization [10]. In the field of environmental protection in foreign countries: limiting emissions into the atmosphere and the hydrosphere in order to improve the state of the environment; creation of reserves, reserves and national parks in order to preserve natural complexes; strict ban on fishing and animals in order to preserve the diversity of their species; prevention of waste disposal in unauthorized places.

In foreign countries, the term "ecology" is again used as a set of technological means for processing waste and waste, their processing, methods of producing new products, preserving the quality indicators of the environment and its constant maintenance. In this regard, the term "environmental engineering" is widely used in Russia. Environmental analysis includes pollution of water, air, land and their protection, as well as the organization of waste disposal and public health.

Results

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Levels and criteria for the formation of a culture of environmental safety in students (professional competence, qualimetrics)

Based on the study of philosophical, socio-historical, pedagogical and psychological, methodological and special literature, scientific and theoretical views, ideas, methods and directions for the formation of environmental education, environmental thinking and culture, the following analytical principles play an important role:

- Systemic, personal, competent and comprehensive integrated approach;
- The need to start environmental education from an early age, the content of education, the need for information-activities, knowledge, practical practice, stages of competence, interdisciplinary and inter-educational integration in the organization and formation of environmental education;
- Humanistic, democratic, popular nature of environmental education, its important aspect of human morality, worldview and behavior, the nature of understanding, perception are a necessary link in human thinking, culture and spirituality;
- In environmental education, the unity and integrity of emotional cognition, perception, feelings, personal experience, correct conclusion, decision-making, adequate actions, alert, conscious, quick, correct, useful, effective, positive and safety-based actions;
- Didactic, acmeological, axiological, emotional and psycho-psychological factors in environmental education [19, 20];
- Factors such as readiness for business and practical activity in terms of the intellectual and emotional, volitional and spiritual values of the individual, internal personal motivation, impartiality and impartiality, empathy, persistence in protecting the environment, self-awareness, the need for active participation in relations with the environment reaches Therefore, one of the criteria for the maturity
of personnel in the field of oil and gas, mining, mechanical engineering and energy is computer skills.

In the field of environmental protection, the following pedagogical activities are required:

- Active participation in various field and ecological expeditions;
- Acquire skills in working with documents for the study and research of environmental factors, study their analysis and conclusions;
- Establish various levels of environmental impact and determine their level;
- Participate in various research, sociological, scientific, practical, advocacy and advocacy activities for environmental protection, participate in their programming and implementation, their planning;
- Participate in the development of programs for the strategic environmental development of regions, considering environmental opportunities;
- To be able to analyze the environmental consequences of socio-economic and economic activities, to use the conclusions drawn on their basis to protect the environment;
- Knowledge of the development of practical recommendations for environmental protection and active participation in this activity;
- To be able to take measures to ensure the environmental safety of the country's economy, especially small and medium-sized businesses;
- Participation in research activities at CES;
- Deep knowledge of environmental audit methods, knowledge of control and audit methods;
- Know how to model environmental management and learn to predict the consequences based on them.

Today, the methodological, pedagogical and psychological, socio-political requirements and responsibilities of the teacher are growing, and the need for a
qualified and highly qualified teacher in the structure of society is growing day by day [18]. When forming CES, the teacher develops the interests and aspirations of the student, while ensuring the effectiveness of the educational process, while looking indifferently at his pedagogical activity, he can extinguish and destroy the student's talent, passion and interest. The teacher is required to instill universal human values. The teacher is required to combine social knowledge with professional knowledge, to have his own position in CES as a person, to convey to students his views, ideas and worldviews on CES.

Accordingly, teachers involved in the formation of a computer are obliged to perform the following functional tasks:

- determine the level of all knowledge, skills and abilities of students on a computer, organize group work based on the results, develop the content of the group's activities, the widespread introduction of factors of individual and mass development;

- Ensuring that when organizing the pedagogical and psychological process for the formation of CES, they are equipped with scientific, historical, theoretical, social textbooks and methods, regular management of the educational process;

- To ensure the continuous improvement of the content of educational materials with innovative ideas, views, technologies and methods in the process of forming the CES, to increase the educational interest of students, to organize a process aimed at meeting their educational needs;

- Organization of the required volume of educational and spiritual and educational pedagogical activities for the formation of the CES, ensuring its implementation on the basis of interactive methods and advanced pedagogical technologies, information and communication systems;

- Regularly and constantly equip and provide new curricula, teaching materials, tests, manuals, textbooks, handouts, audio and video materials, didactic materials,
visual aids so that the educational process in the organization of their pedagogical activity is interesting and unique.

If the teacher is simply trying to report back or complete the curriculum, we will not be able to achieve the required level of quality, even if the teaching process is armed with very strong teaching tools. Because, unlike the learning process, the upbringing process is based on the example of the people around the student. If the student is brought up in the arms of a cold person, he will also develop coldness in relation to the duties for which he is responsible.

If we talk about the negative impact of the biosphere on human life based on global development, existing psychological conditions arising as a result, then the following features are manifested:

_Psychological stress and inadequate, negative traits:_

- Do not believe in your own future and the future of humanity;
- A strong sense of fear of potential future lifestyle problems such as depletion of energy resources, shortage and depletion of clean drinking water, disruption of the gene pool, food shortages and a sharp increase in the land population;
- Firm belief that humanity is facing the end of the world and that it has already come;
- Comprehensive preparation for the end of times and anticipation of its onset (collecting food and aquaculture, collecting weapons, fear of walking in the sun and rain, fear and fear of eating food, etc.);
- Exacerbation of social crisis situations, excessive growth of social negativity based on fear of inability to solve problems;
- Creation of unrest in society on the basis of negative psychological mood.

_Psychological and mental state and adequate characteristics:_
• confidence in the future of mankind and the ability of mankind to draw the necessary conclusions from all socio-ecological crises;
• To live in the struggle for positive, good and evil, striving for the victory of good;
• Spiritual and ideological awakening to an environmental crisis in society based on its activity, awareness of the environmental threat;
• To be able to live, protecting your life and social living space from environmental threats;
• Strong confidence in the intellectual strength of a person.

These universal moral qualities include: fairness, kindness, openness and sincerity, respect and dignity, not striving for more than one's needs, deep knowledge of the natural and human sciences, deep respect for the environment and an understanding of its uniqueness, respect for the environment, be able to persevere in conservation and live in accordance with existing laws.

The study identified the levels of knowledge, skills and abilities of students, their specific characteristics, as well as conditions, requirements and characteristics that motivate students to master the computer.

Conclusion

1. All tasks that are inextricably linked with the introduction of environmental education and environmental education in Uzbekistan are priorities of national importance. Environmental education is an integral part of the training system. Today environmental education, especially the formation of a culture of environmental safety, is one of the key characteristics of human capital, an integral part of the formation of personality and professional competence. It is important to develop mechanisms to ensure their consistency, implementation in practice, the
creation of a coherent and integrated system of innovation, scientific development, economic growth and technical practice.

2. Due to the global focus on environmental education, while the culture of environmental safety is considered an important aspect of preventing environmental crises, their application in the national education system is lagging behind, it is necessary to accelerate the development of critical and creative application of foreign experience. In the world of environmental specialties, new environmental specialties have appeared, the introduction of new environmental specialties into our national education system, their inclusion in the register of specialties, the development of curricula, and their introduction into the educational process are lagging behind.

3. The principle of solving problems, independent educational activities of students, integrating all participants into the educational process, taking into account individual characteristics, abilities, personal orientation, i.e. the principle of individualization, the organization of the educational process based on the four Self-laws, teaching students to analyze, generalize, draw conclusions, use their knowledge and skills in emergency cases, not get lost in emergency situations, form a relationship of cooperation with the educational material, taking into account the student's motivation.

4. In the formation of a culture of environmental safety in the research process, the creativity of students, the level of their knowledge, skills and abilities, personal freedom, individuality, compliance with the requirements of the specialty, the choice of a profession with interest, the existence of a scientific and theoretical concept of personality is of great importance.

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