

## **Pedagogical and Psychological Features of the Development of Ecological Competences of Future Teachers**

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### **Abstract**

*This article analyzes the current state of environmental education and education in Uzbekistan, classifies the main types of environmental competence of future teachers.*

**Key-words:** Ecology, Competence, Pedagogy, Environmental Protection, Education, Global Problems.

### **1. Introduction**

From the first days of independence, the Republic of Uzbekistan has been building a democratic rule-of-law state and an open civil society that ensure the observance of human rights and freedoms, the formation of a socially and environmentally oriented market economy, and full integration into the world community. The main goal and driving force of the transformations being implemented in the republic is the harmonious development of a person, the creation of favorable conditions and effective mechanisms for realizing the interests of the individual.

### **2. The Main Results and Findings**

The current harsh conditions of the global environmental crisis, the need to overcome it, presuppose the inclusion of environmental criteria as mandatory and priority for all branches of human activity. Implementation of the strategy of innovative development of Uzbekistan in the current circumstances requires the training of human resources aimed at optimizing the relationship

between man and nature, increasing environmental safety based on advanced domestic and foreign achievements.

The main goal of ecological education of society in Uzbekistan is to form a socially active personality with a high ecological culture, a personality focused on continuous self-development, capable not only of adapting to rapidly changing socio-ecological conditions, but also clearly aware of the consequences of the actions taken and having a sense of responsibility of contemporaries. descendants for their ecological behavior.

These tasks are priorities in our republic. In order to form an environmental culture and professional training of specialists, a system of universal and comprehensive environmental education is being established, including preschool, general school education, secondary and higher vocational education, postgraduate education and professional retraining, advanced training, as well as the dissemination of environmental knowledge, including through the media, museums, libraries, cultural institutions, environmental institutions.

General compulsory environmental education and education of the younger generation, student youth and environmental education of the entire population directs educational institutions to design a system of environmental education in educational institutions. However, in the field of environmental education design, a complex and contradictory situation is emerging today. On the one hand, the importance of environmental education as a direction of spiritual and moral development of the student's personality increases, namely:

- Axiological approaches in the organization of environmental protection are becoming a priority.
- The demand for ecological culture and ethics is growing.
- The principles of sustainable development of society are updated.

The developers of the state educational standard for future teachers set before teachers the task of forming an ecological component within the framework of general educational subjects for basic school and choosing a separate course on environmental orientation for high school students within the school component of the invariant part of the curriculum. In this regard, the new socio-cultural and environmental situation has significantly changed the role of the teacher in overcoming the environmental crisis and the content of his activities, moving beyond the narrow professional subject competence and increasing the degree of responsibility for the results of environmental education of the younger generation, giving rise to the need for the formation of new

professional competence of a specialist in the field of education. - ecological and pedagogical competence.

- Pedagogical competence is in demand in many areas of social practice: in the system of general and vocational education, in institutions of additional education and the social sphere, the media, public organizations, environmental management, ecotourism, etc. The formation of the environmental competence of a future teacher is based on an ecological approach, in which the educational process is focused on the formation of ecological culture as above the professional and interprofessional quality of the personality of the future teacher.

It is possible to highlight some points of the study of environmental competence by experts in the world and in the republic. Yu.V. Grishaeva notes that the ecological competence of a teacher should be understood as his ability and readiness for ecological and pedagogical activities aimed at creating and maintaining an effective ecological educational environment that contributes to an increase in the level of ecological culture of all participants in pedagogical interaction. In turn, the environmental competence of a future teacher is the necessary level of his training, including the values and meanings of environmental (environmental-pedagogical) activities, basic environmental knowledge, as well as experience in solving socially significant environmental problems on the basis of practical environmental activities.

The environmental competence of an individual is formed on the basis of basic competencies.

According to S.N. Glazachev, the basic system of ecological competences of the personality of the future teacher, revealing important aspects of the concept of "ecological culture of the personality", is presented as follows:

- Has the ability to responsibly relate to the natural environment based on the recognition of its universal value.
- Understands the essence of the natural limits of modern socio-economic development and the causes of the ecological crisis.
- Is able to assess the results and consequences of their activities from the point of view of conformity to nature (biosphere compatibility), not causing or minimizing harm to nature.
- Possesses the skills of nature-friendly activities and behavior.
- Is able to emotionally sensually perceive the threat of destruction of the natural environment, to show the will to protect and preserve it.
- Has a need for activities in the field of ecology and nature management.

- Has a sense of nature, is able to perceive its greatness and beauty.
- Has the need to communicate with nature, to be in natural landscapes.
- Has a holistic worldview and attitude.

Obviously, in contrast to the initial concept of "ecological culture of the individual", the system of formalized characteristics defined by the state educational standard in the form of competencies will allow one to proceed to some technological operations, such as measurement, assessment, planning, and correction. The indicators of the formation of the environmental competence of university students include: the sustainability of interest in environmental issues, the presence of a need to increase the level of environmental knowledge, motives for participation in environmental activities, the prevailing nature of environmental values that are personally significant for students, experience of participation in practical matters to preserve and improve the state environment.

A specialist from Uzbekistan Sh. Avazov believes that no technical means by themselves can improve the state of the environment if people are not ready to use environmentally friendly technologies, do not consciously strive to comply with the requirements of environmental restrictions and take an active part in the practical solution of social and environmental problems... Such changes are possible only with the transformation of public consciousness, the penetration of environmental ideas, knowledge and imperatives into the life of society and each individual, which is recorded in a number of state documents.

Let us analyze the requirements for the results of mastering bachelor's and master's programs in the direction of "Pedagogical education" in the context of the formation of future teachers' competencies in environmental protection activities based on the value-semantic guidelines set in the Federal State Educational Standards. According to the natural science profiles of the direction of training "Pedagogical education", special competencies in environmental protection activities, which a bachelor graduate must master, are separately defined:

- Must be prepared for ecological education of students.
- Is able to organize work to comply with the rules and norms of behavior of schoolchildren in the natural environment.
- Ready to involve participants in the educational process in environmental activities.

Considering that the state educational standard defines the problems:

1. The introduction of an environmental component within the framework of general education subjects.

2. Insufficient use of the ecological potential, it becomes necessary to disclose and show the content of the ecological component of various disciplines in the conditions of a university to students of the humanitarian profile.

Under the conditions of Tashkent State University, the course “Fundamentals of Environmental Culture” was introduced into the curriculum in the direction of training “Pedagogical Education”, which gives students a base of knowledge, skills and abilities for the implementation of environmental education in their further practical activities. The above provides for the widespread use in the educational process of active and interactive forms of conducting classes in combination with extracurricular work in order to form and develop professional skills of students.

In the implementation of the competence-based approach for the course "Fundamentals of Environmental Culture", the teacher's activity consists in organizing problem situations, the means of which are: problematic texts, literature, a number of opinions and points of view on a certain environmental problem; turning to real life and correlating it with scientific facts, etc. This course uses interactive teaching methods and the following forms of their implementation: problem presentation - a lecture of a problematic nature; control presentation - lecture with errors; research method - practical and theoretical tasks of a problematic nature; brainstorming methods - discussions, creative tasks of a problematic nature, etc.

The process of teaching future teachers in the course "Fundamentals of Environmental Culture" is based on the following principles: situational, based on genuine environmental problems; multiple context - the use of environmental material in various fields of education: pedagogical, psychological, social, economic, chemical, etc.; socialization - organizing meetings of students with representatives of state and public environmental organizations; master classes by experts and specialists in the field of ecology.

An important place in the formation of students' ecological competence is occupied by direct communication with nature, since a teacher of any profile can organize activities:

- To promote ideas for the protection of nature among students and adults.
- Keeping the school grounds clean.
- To involve parents, representatives of local authorities, reserves, museums, libraries, public organizations, etc. in environmental protection activities.

One of the active forms of environmental education in higher educational institutions is the inclusion of students, regardless of the profile of their training, in the most diverse types of environmental - oriented activities - nature conservation, nature restoration. Students can take an

active part in the environmental volunteer movement, landscaping of public places, etc. Thus, students of the Tashkent State Pedagogical University take an active part in environmental campaigns at various levels. As part of these measures aimed at improving the quality of the natural environment, increasing the level of environmental education and culture of young people, an active civic position is being formed (moral, patriotic education).

Thus, environmental issues in education are the most successful material for demonstrating the specific relationship between social, natural and technological components of sustainable development of society. Currently, the goal of environmental education in the preparation of future teachers is not so much the formation of knowledge and skills, but the development of environmental consciousness, thinking, culture. One of the courses aimed at the formation of environmental competencies is the course "Fundamentals of Environmental Culture". It is important that students acquire knowledge about the ecological situation not only of a global nature, but also of a local one, namely of their region. So, the most important link in overcoming the environmental crisis is the training of a teacher who is able to organize in practice the process of upbringing the ecological culture of students, where the key point is the formation of environmental competencies.

For the formation of ecological and pedagogical competence, the universality of ecological knowledge is important, which reveals the diversity of manifestations of life and forms a system of value relationships and orientations. Environmental knowledge belongs to the category of fundamental - it is the core systemic, structurally organized and methodologically significant knowledge. Environmental concepts, laws, theories serve as the core around which facts and other types of knowledge of various academic disciplines are grouped.

Acquisition of ecological knowledge in the process of development of ecological and pedagogical competence is not an end in itself, but the basis for the formation of a teacher's ecological culture. The process of forming an ecological type of thinking - flexible probabilistic thinking, which presupposes not only the ability to establish causal relationships, but also the ability to synthesize and analyze environmental phenomena, modeling and predicting the consequences of environmental problems - is closely related to the assignment of the epistemological component. The set of mental techniques and actions, formed under the influence of perception, comprehension and understanding of the surrounding reality, is characterized by overcoming the absolutization of a linear causal relationship, rigid determinism and individual methods. There is some prevalence of synthetic and integrative trends in research.

Modeling and forecasting the development of the environment, including in the field of interpersonal relations, is especially important for teaching. In the praxeological component, a great

role is played by ecological skills and abilities that are formed in the process of appropriating ecological culture: studying and transforming the environment, ecologically friendly behavior. The development of these skills is inextricably linked with the understanding of the social conditionality of the interaction of nature and society, the dependence of the quality of life on the quality of the surrounding natural environment, with the adoption of the goals of environmental activities.

In vocational education, a view of values as a motivational construct has become established, which relates to the intended goals that people intend to achieve. According to Sh. Schwartz, values are socially acceptable concepts used to represent motivational goals mentally and verbally, to express these goals in social interaction.

The abstract nature of values distinguishes them from concepts such as norms and relationships, which are usually associated with specific actions, objects or situations. According to M. Raudsepp's just remark, the information deficit, the inconsistency of environmental information, and the absence of a clear identity of environmental phenomena attach particular importance to values that can transform environmental problems into something subjectively significant for a person. The specificity of ecological value orientations is manifested in their universality, since they are determined by the universal significance of nature for society and personal significance for each person.

The totality of ecological values mastered in the process of their development and self-improvement, reflecting the ecological culture of the people at a certain historical stage, determine the nature of the value attitude of the individual to reality. The motive as a justification for a momentary choice, intentions acquires stability as the development of environmental values, merges with thoughts, feelings, motives, as a result of which value attitudes are formed that ensure the sustainability of environmentally friendly behavior.

The process of mastering professional competence in general and ecological and pedagogical in particular is long, continuous, abrupt, and its results are delayed, while elementary and functional literacy, acting in the form of educational results, can and should be finally formed by the end of the terms of mastering the educational program.

The main driving force behind the formation of the EPK is the resolution of the contradiction between the existing, i.e., the formed level of competence, and the new, perceived by the subject as dissatisfaction with his knowledge, action to solve environmental and pedagogical problems. This is the process of transitioning an ideal image into a desired and then real, which means aligning the existing experience with goals and needs. Accordingly, for each stage, the dominant mechanisms of the EPA development should be determined and, in accordance with them, the forms, methods and

means of direct and indirect influence on the process of personal development of the EPA should be selected.

Ecological and pedagogical tasks have been chosen by us as a means of implementing the mechanisms of the process of EPK formation, since such tasks allow students to master the process, method or technology of performing theoretically and practically significant actions during the formation of EPK components.

The situational-motivational mechanism of the first stage is realized through the formulation and resolution of ecological-pedagogical tasks of stimulating the student: actualization of knowledge in the field of the environment, man and society; formation of the image of a competent specialist in the field of environmental pedagogical activity (in the areas of training - vectors); stimulation to search for ways to improve their level of EPA and the development of competence.

In conclusion, we note that the integrative nature of the EPK as a personal neoformation, it would seem, casts doubt on the possibility of a formalized (structured, point-based) assessment of the level of competence formation. However, it is of decisive importance in assessing the individual components of the EIC and in assessing the dynamics of competence development, as well as for individual goal-setting on the path of professional self-education.

The assessment of the EIC as a result of the greening of teacher education can be successfully carried out according to the degree of conformity of the quality of the educational process to the requirements described as desirable in the concept of the formation of ecological and pedagogical competence, i.e., how much the educational process corresponds to the competence-based approach in terms of methodological indicators. An integral indicator is the student's ability to develop his own practice-oriented model of school environmental education and its involvement in environmental and pedagogical activities at the university stage of professional education.

In modern conditions, environmental safety takes a priority place in the national security system of the republic. The state of environmental safety is an indispensable condition for the survival of mankind in the face of the latest environmental threats and dangers of the 21st century. National security systems become effective and reliable if they are initially focused on protecting the environment and the rights of citizens to an environmentally safe existence in organic interaction with other traditional components of the national security system.

### 3. Conclusion

In the end, it should be noted that the development of the ecological competence of the future teacher ensures ecological safety. Environmental safety is a component of national security associated with maintaining the balance of the natural environment under conditions of anthropogenic and man-made influences and their destructive consequences. Environmental safety includes natural and man-made safety, which reflect the state of protection of natural objects, characterize the level of their protection, serve as a criterion for assessing the protection of natural objects and, above all, of the person himself.

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