

*Otanazar K. Rakhimov,*  
*Senior Research Fellow-Competitor,*  
*Tashkent State Pedagogic University named after Nizami*

## Theoretical Basis for Development Ecological Worldview as a Part of Students' Natural Scientific Worldview

**Key words:** *worldview, natural-scientific worldview, ecological worldview, everyday ecological worldview, scientific ecological worldview, anthropocentric worldview, nature-centered worldview, eco-centric worldview, environmental education.*

**Annotation:** *the article reveals the content of the following concepts: worldview, natural scientific worldview, ecological worldview, nature-centered worldview, ecocentric worldview, environmental education etc. The article concluded that the development of ecological worldview of students is the main condition for solving problems of formation of natural scientific worldview in the learning process.*

The phrase is two or more words related to each other in meaning. Analysis of the concept of “natural scientific worldview” shows that it is determined by the interaction of two systems: the worldview of the individual and the natural science system.

The essence of the “worldview” consists of two words: “world” and “view”. “World” in the broadest sense - everything that exists, the planet Earth, the universe; “view” in modern language means “belief, opinion, way of thinking, a point of view”. On the basis of this analysis, *worldview* is a holistic picture of the world, a set of ideas of human about the environment, about the human himself, their relationships and forms of interaction with this environment. Worldview is a system of generalized views of the real world and man’s place in it, the attitude of people to the reality around them and themselves, as well as belief, ideals, principles of knowledge and activity based on these views. The outlook is based on the understanding of the world, i.e., assembly of certain knowledge about the world (1).

The essence of “**natural scientific**” also consists of two words: “natural” and “scientific”. In these expressions, the word “natural” means: a) referring to the nature (the surface, climate, flora and fauna of earth); b) formed or occurring in nature without human involvement or influence, and the word “scientific”: a) associated with the science, pertaining to science, b) based on the principles and methods of science. On the basis of this analysis, the word “*natural scientific*” has traditionally been seen as a value-neutral and related to natural sciences of geology, biology, astronomy, geography, chemistry, physics, etc.

**Natural scientific worldview** is based on the well-known evidential points, mainly from the fields of physics, geography and biology. Here, great significance is given to the laws of nature and people with a natural scientific outlook are acquiring traits such as commitment to fairness, openness to experimentation, etc.

As the analysis of the scientific and methodical literature shows, problems of development of *natural scientific worldview* was subject to in-depth understanding of the philosophers, teachers, psychologists, physicists, biologists, geographers, environmentalists. Some (Aristotle, Hegel, etc.) surveyed the essence of the concept of natural scientific worldview and its values in society, others (I.V. Vernadsky, K. Jaspers, etc.) studied the role and place of the natural scientific worldview in science, and others (A.A. Kasian, L.F. Kuznetsova, etc.) found the ratio of concepts of natural scientific picture of the world and natural scientific worldview.

Psycho-pedagogical bases of natural scientific worldview are analyzed in the works of AN. Malinin, NA. Menchinskaya, AN. Leontiev, AP. Usov, AI. Tymoshenko, KG. Erdyneeva, LY. Zorina, RN. Shcherbakov and others. They have proved that the systematization of the material on the basis of the theory of biology and ecology, geography, physics, chemistry, principles of self-organization and self-development, as well as representations of a single picture of the world is the key to solving the problem of formation of natural scientific worldview in the learning process.

Despite the large number of studies on the natural scientific worldview, today these problems are very important. This is due to the mechanisms of human adaptation to the environment that is to say the decision of problems of ecology, environmental protection, environmental management and sustainable development. These challenges are of great importance in achieving the goals of the Republic of Uzbekistan in the conditions of the tragedy of the Aral Sea and the unfavorable ecological situation in Southern Aral Sea region.

In Uzbekistan, the problems on mitigation of ecological crisis of the Aral Sea and Southern Aral Sea region are being resolved comprehensively at national level. It has been adopted several laws regulating the use of natural resources and activities of the population on environmental protection. The government is implementing programs aimed at socio-economic development of Southern Aral Sea region (Karakalpakstan and Khorezm region), a number of projects to improve the socio-ecological state of the territories of the Southern Aral Sea region.

In order to solve the environmental problems of Aral Sea and Southern Aral Sea region, it is possible to use various methods, including the use of more advanced technologies or maintaining natural landscapes. The basis of prevention of ecological catastrophe is change of views on the relationship between man and nature: the restructuring of human consciousness - change in *ecological worldview* of each person and society. At the same time, for all sections of population, especially in educational institutions, much work is carried out on environmental education, aimed at the *development of the environmental worldview*. For this purpose, people need to understand their position in the natural environment, as biological species, as well as to understand that natural resources of territories are limited. The word “ecology” – “οἶκος” - a house, “λογία” - science. Ecology is the science of interacting organisms (human) with environment, and currently it has become an interdisciplinary field of science dealing with the study of the interaction of living with natural and anthropogenic factors of environment.

The ecological worldview is necessary for the formation of a common natural scientific worldview. The problem of development of ecological worldview as part of natural scientific worldview of students of higher pedagogical educational institutions was not a subject of study.

Each student has a certain ecological worldview. The ecological worldview of a student is a specific form of ecological consciousness of the future teacher, their views on the world around and their place in it. In other words, the *ecological worldview* is a system of knowledge about environment, consisting of closely related systems: natural (atmosphere, hydrosphere, lithosphere, natural ecological system, natural landscape, biosphere) and man-made (artificial ecological system, man-made landscapes, man-made structures, buildings and cities).

The study of the concept of “ecological worldview of student” allows you to divide it arbitrarily into a *scientific* and *unscientific*:

a) *unscientific (common, everyday) ecological worldview* of a student - it manifests itself in each student at different levels, based on the ordinary, everyday ecological and pedagogical experience;

b) *scientific ecological worldview* of a student - the system of environmental knowledge, attitudes and beliefs about the nature (biosphere), expressing the attitude of students to the social and ecological phenomena of environment based on scientific ecological and pedagogical experience.

In the process of environmental education in the higher pedagogical educational institutions it is necessary to form specifically scientific ecological worldview. Today, student of higher educational institution need specific environmental knowledge and skills, social and environmental attitudes, beliefs, ideals, which will allow familiarize with the environment, world and ecological relationships. This contributes to the efficiency of the formation of scientific ecological worldview. Modern life expects from higher pedagogical educational institution a qualitative growth of *ecological and pedagogical education*, as well as improvement in ecological and pedagogical morality and intelligence. Therefore, environmental education fulfills the function of ecological engagement and development of the personality of the future teacher, creates a scientific ecological world outlook. It should be noted objectives of learning of subjects of natural scientific course, which is to develop the students' efforts in ecological and cognitive activities, teach them to acquire ecological knowledge, form an ecological worldview. Thus, the level of ecological and personal development of the student is determined by the mastery of their scientific ecological worldview.

Examining relationship of student with nature, two main trends can be identified: the impact of the nature on the student's personality and his work; the impact of the student and his activities on the environment. Under current conditions, there are two aspects in relationship of the environment and students - *anthropocentrism* and *nature-centrism*.

*Anthropocentric worldview* is based on the concept of domination of man over nature. *The principles of anthropocentrism*: nature - a provider of resources for people (population); person (society) - to subordinate nature for their objectives; man - the king of nature, etc. Anthropocentrism is a system of views of student-consumers and the student-spenders, guided by their principles will bring natural systems of environment to the crisis (for example, crisis of ecological system of the Aral Sea and Southern Aral Sea region).

*Nature-centered worldview* is based on the notions of belief system: man - part of nature; man complies with the laws of nature; people should be responsible for the preservation of nature; man has responsible attitude to nature, thereby responsibly refers to their body; man has no right to reduce the richness and diversity of life; prosperity of mankind and its culture can occur in a population decline, and other forms of life flourishing requires mandatory cuts, etc.

Modern student must now change their anthropocentric and nature-centered worldview to *ecocentric*: *carry oneself in a certain way so, as not to harm the ecosystem and nature, not to cause them harm* (“I have an environmental liability, do not cause harm to living things, help them, and the mankind”). It is important to note that the ecosystem or ecological system is the biological system (biogeocoenosis), consisting of a community of living organisms (biocenosis), their living environment (habitat), the system of communication, providing exchange of substance and energy between them.

The ecological worldview is the knowledge concerning the basic patterns and relationships in nature and society, emotional – sensorial experience, emotional – valuable and action-practical attitude to the nature, society, and to the reality. It is formed in the integration of the three areas: environmental awareness, moral-aesthetic and action-practical attitude (2). At the same time there is another definition: ecological worldview is a complicated personal formation, which includes responsibility for the condition of environment, the presence of environmental attitudes and beliefs, experience of the study and protection of the natural environment, the system of scientific concepts on environmental issues (3).

The abovementioned definitions of the essence of ecological worldview of students allow us to depict its overall structure. Important structural components of ecological outlook of students are:

- 1) the system of scientific concepts (knowledge) on environmental issues (environmental education);
- 2) experience of the study and protection of the natural environment (the practical participation in the improvement of environmental management);
- 3) the presence of environmental attitudes and beliefs (conscious attitude towards the environment);
- 4) responsibility for the state of the environment (4,5).

Environmental liability (responsibility for the state of environment) requires a high level of environmental awareness of students. Development of ecological culture of students involves equipping them with nature-oriented knowledge and skills. The basis of environmental liability of students is ecological and moral attitude to the natural world. The foundation of the formation of environmental liability of students is their environmental knowledge. New ecocentric awareness changes the students’ behavior towards the environment. The student with a new ecocentric consciousness and worldview has the ability to interact and cooperate with nature by understanding its laws.

This implies the following tasks of the development of ecological outlook as part of a natural-scientific worldview of students:

- 1) in terms of the formation of natural-scientific worldview of society to clarify the content of environmental education of students;
- 2) to identify and justify the methodological conditions providing formation of ecological worldview of students in the educational process;
- 3) to develop a method of formation of ecological worldview of students in the study of natural science subjects.

**References:**

1. *Kodzhaspirova GM, Kodzhaspirov AJ. Pedagogical vocabulary: for students of higher and secondary pedagogical educational institutions. Moscow, 2000; 87.*
2. *Zverev ID. Environmental education and training: key issues: Environmental education: concepts and technology: Collection of scientific works. Volgograd, 1996; 78.*
3. *Moiseeva NN. Ecology and eucation. Moscow, 1996; 21.*
4. *Melnikova OJ. The development of students' ecological worldview: teaching materials for teachers and students. Omsk, 2007; 52.*
5. *Mironov AV. The content of environmental education of future teachers. Kazan, 1989; 221.*