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**Ecological Competence Formation of Future Agricultural**

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## **Ecological Competence Formation of Future Agricultural**

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### **Abstract**

The problem of ecologization of agricultural education is discussed in the article. The technology of ecological competence formation of future agricultural specialists is offered.

**Keywords:** educational paradigm, ecologization of education, ecological competence, technology, pedagogical technology, agricultural specialists

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### **Introduction**

Nowadays, as we stepped into the 21<sup>st</sup> century, the contradictions between society and nature have become sharp and they are manifested in environmental problems. The deterioration of the environment has taken place throughout the human history. However, today we are talking about the survival of humanity and therefore the modern period of civilization is characterized as a global environmental crisis.

This problem has philosophical, socio-economic, and deep psychological and pedagogical context. It can be viewed at three levels – global, state, and personal. The first one covers the issues which overlap with all the spheres of modern mankind, and accordingly play the role of unifying factors for the world community (global fora on environment and development: Stockholm, 1972; “Rio-92”, 1992; “Rio+5”, 1997; “Rio+10”, Johannesburg, 2002; “Rio+20”, 2012). At the second level, there is a search for the ways to solve environmental problems at the national level [Law of Ukraine "On the main principles (strategy) of state environmental policy of Ukraine by 2020", the Concept of ecological education in Ukraine]. The third level is aimed at determining the capabilities of each individual in overcoming the negative impact on the environment, which is manifested in the process of professional activity. This level directly depends on the ecological competence of the specialists.

The aim of our investigation is to study ecological competence formation of future agricultural specialists, as their professional activity is closely connected with natural resource management.

### **Statement of basic material**

Each historical epoch, in accordance with living conditions of its society members, elaborates its own educational paradigm, which is a “generative model” of a perfect structural organization of an educational process of all age groups of the population. The key issues in determining specific features of educational paradigm content of this or that epoch are: why, how and for what purpose the person is educated at the present time.

The objectively existing contradiction between the need of modern society in realization of the main goals of sustainable development and the lack of real progress in their achievement encourages the world community to concentrate its efforts on analyzing the causes and identifying new constructive approaches to protection and maintenance of integrity of natural systems and their ability for self-reproduction.

These issues were discussed at the regular UN Summit on Sustainable Development, which took place in September, 2015 with the participation of representatives from 193 countries of the world. The Summit unanimously adopted a new “Agenda for Sustainable Development by 2030” (Transforming...). Recognizing the crucial role of education in achieving the goals of “Agenda for Sustainable Development by 2030”, the 38<sup>th</sup> session of the UNESCO General Conference (November, 2015) highlighted the need to finally move from promises and declarations to the realization of educational social mission for actual changes in all life spheres of modern society, promotion of its development on the basis of sustainability. The reflection of these intentions was an important document “Framework for Action »Education-2030« adopted by the session” (Framework...).

The preliminary analysis of The Paris Agreement, adopted on December 12, 2015 at the 21<sup>st</sup> session of the Parties Conference of the United Nations Framework Convention on Climate Change (Paryzka uhoda...), makes it possible to reach the unequivocal conclusion that the main task of fulfilling its requirements is the need for a radical change in the way of management, that is, the transition from the current environmentally dangerous to a new, safe (ecological) economy both at the global and national levels. Accomplishment of this important and difficult task is possible only on condition of sufficient ecological competence of specialists, who carry out management within the existing model of production and consumption. Consequently, the formation of the ecological competence of future specialists is a key factor in the ecologization of higher education.

Both national and foreign scientists studied the issue of ecological competence formation. Thus, the issues of ecological education in secondary and high-

er educational institutions were studied by Brovdiy, Velychko, Verbyts'kyi, Halyhin, Davydov, Demeshkant, Dubovych, Kiva, Lukiyanova, Pustovit, Skyba etc.; philosophical aspects of human and nature relations are presented in the scientific works of Aleksandrov, Boreyko, Vernads'kyi, Kyselyov, Kryshchenko, Ntrebko, Snizhko etc.; pedagogical and psychological grounds of knowledge and skills formation for the interaction with environment are discussed in the works of Hlazachev, Delors, Deryabo, Duvigneaud, Johannsen, Raven, Serikov etc; ecological and paradigmatic approaches to the formation of students' world view values are studied by Bilyk, Hroshovenko, Plakhotnik, Tarasenko, Fleshar, Yarchuk etc.

In their research the scientists consider the issue of ecological competence formation of future specialists as the one which is becoming more and more important, and its scientific development is being carried out mostly within theory and methodology of professional training.

Thus, "ecological competence formation is a purposeful long process of a person's preparation for environmental functions, which includes the acquisition of environmental knowledge, skills, and the development of appropriate motivational activity that will provide the future scientist with the ability to scientifically substantiate, choose, apply and create environmentally safe technology" (Budahyant, 2009). The ecological competence of an agricultural specialist can be defined as the ability and the willingness to apply knowledge, make occupational decisions and perform any tasks related to professional activity, adhering to the ecological imperative and being aware of the environmental responsibility for the consequences of their activity.

During the pedagogical experiment it became clear that ecological competence formation of future agricultural specialists will be realized in the process of training, which is based on innovative pedagogical technologies.

The term "technology" is used in various combinations: pedagogical, educational, informational, innovative technology, technology of education and upbringing, etc. The most meaningful, in our opinion, is the definition adopted by UNESCO: "Pedagogical technology is a systematic method of creation, application and mastering of the whole process of learning and acquiring knowledge through the consideration of human and technical resources, the interaction between them in order to achieve a more effective form of education".

Under the pedagogical technology of ecological competence formation of students-agrarians, we mean the totality of innovative ways, methods, forms and means of learning that ensure students' effective achievement of the ability/readiness, perceiving reality in the unity of natural and socio-cultural ties, on the basis of the existing knowledge, skills, experience and personal qualities, to adequately solve environmental problems and problems of society and nature interaction in the course of their professional activity.

Thus, ecological competence formation can also take place within the implementation framework of the designed pedagogical technology.

Designing a pedagogical technology for ecological competence formation is a step-by-step activity.

The first stage of designing is the definition of a set of ecological competences of future specialists in the agricultural sphere as the expected final result of their professional education. The most important characteristics of the developed set of competencies are their validity and diagnosticity.

The second stage of pedagogical technology design is the process of identifying the possibility of ecologization of the subjects of professional and practical training. It is necessary to determine the subjects that allow to ecologize the content of their educational material. At this stage, teachers of the subjects of professional and practical training re-structure the learning material taking into account the ecological component.

Since a small amount of hours is spent on classroom lessons, in order to introduce an ecological component into the content of professionally-oriented subjects of future agricultural specialists, the emphasis should be put on the organization of students' independent work under the teacher's guidance.

The next stage of pedagogical technology design is the development of interactive forms and methods of organizing the learning process, which will result in ecological competence formation of future specialists. Innovative pedagogical technologies promote the activization of educational and cognitive activity of students, acquisition of ecological knowledge and skills, formation of a holistic notion in the context of "human-nature" interconnection.

## Conclusion

Ecologization of agricultural education is aimed at ecological competence formation of future specialists. We believe that the process of ecological-competence formation will be effective in case of ecologization of the content of professional training of future agricultural specialists.

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