



## ***Modern American Journal of Medical and Health Sciences***

ISSN (E): 3067-803X

Volume 01, Issue 07, October, 2025

Website: [usajournals.org](http://usajournals.org)

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### **OPPORTUNITIES FOR DEVELOPING FUTURE TEACHER COMPETENCE IN THE PROCESS OF TEACHING NATURAL SCIENCES**

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#### **Abstract**

The article emphasizes that the reform and modernization of education requires innovative, systematic, proactive, creative approaches in teaching students environmental and pedagogical thinking in organizing the process of higher pedagogical education. It also ensures the consistent development of environmental competencies of future teachers, which reflects the specifics of a systematic approach to the development of environmental competencies.

**Key words:** students, education, ecology, competence, development, systematic approach.

### **TABBIY FANLARNI O'QITISH JARAYONIDA BO'LAJAK PEDAGOG KOMPETENTLIGINI RIVOJLANTIRISH IMKONIYATLARI**

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#### **Annotatsiya**

Maqolada ta'limdagi islohotlar va uning modernizatsiyalashuvi professor-o'qituvchilardan oliy pedagogik ta'lim jarayonini tashkil etishda talabalarini ekopedagogik fikrlashga o'rgatishga innovatsion, tizimli, tashabbuskor, ijodiy yondashuvlarni talab etishi ta'kidlab o'tilgan. Shuningdek, bo'lajak pedagog kadrlarning ekologik kompetensiyalarni izchil rivojlanirib borishini ta'minlash,



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ularda ekologik kompetentlikni rivojlantirishga tizimli yondashuvning o‘ziga xos xususiyatlari yoritilgan.

**Tayanch so‘zlar:** talabalar, ta’lim, ekologiya, kompetentsiya, rivojlantirish, tizimli yondashuv.

### **Аннотация**

В статье отмечается, что реформирование и модернизация образования требует новаторских, системных, инициативных, творческих подходов к обучению студентов эколого-педагогическому мышлению в организации процесса высшего педагогического образования. Также обеспечивается последовательное развитие экологических компетенций будущих учителей, что отражает специфику системного подхода к развитию экологической компетентности.

**Ключевые слова:** студенты, образование, экология, компетентность, развитие, системный подход.

### **Introduction**

The modernization of higher pedagogical education in our country is associated with the constantly increasing demand for personnel working in educational institutions. The results of the reforms mean that the training of pedagogical personnel occupies an important place in the higher education system being implemented. The specific features of the higher education process are the reflection in the educational process of the positive and negative aspects of globalization, which are increasingly affecting the minds of future pedagogical personnel. The impact of globalization on the higher education system can be explained to future bachelors through lectures and practical exercises based on innovative materials. It is necessary to explain to future teachers new ways of using Internet information in the educational process. “It is not difficult to see and understand that the process of reform and democratization of our country has taken on a never-ending, firm and consistent character, that our people are



changing, their political and civic activity is increasing, their consciousness is rising, their sense of involvement in all the events happening around them is growing, and their confidence in tomorrow is growing" [2]. In the current period, it is necessary to pay attention to the fact that textbooks, training and methodological manuals are prepared by qualified and skilled teachers in higher educational institutions on the basis of innovative educational technologies, incorporating new ideas. A specialist teacher requires thorough preparation for each lecture and practical training in the field of pedagogy of higher education, and the widespread use of methodologically approved materials in lessons. This approach to the issue should be noted that students studying in higher education institutions today have acquired comprehensive knowledge of subjects during their education, and the high level of knowledge they have acquired thanks to the efforts of their families, schools, and community institutions.

## **Main part**

The mechanisms of interaction between pedagogical activity and the control environment in the development of ecological competence of future teachers based on a systematic approach to ecological education include the following processes:

The main goal of developing ecological competence in future teachers is to train qualified personnel in higher pedagogical educational institutions in accordance with the state order and the requirements of society; State educational standards provide for the implementation of teaching, upbringing, educational and methodological, production and research tasks in the pedagogical activity of a graduate.

In the development of ecological competence of future teachers, the content of education, curriculum, programs, educational form, methods, tools and textbooks, electronic information educational resources and other didactic materials, educational and methodological manuals, laboratory equipment, educational technologies, etc. In order for students to carry out pedagogical activity in the future, apply practical skills based on theoretical knowledge and psychomotor actions in real conditions, a qualification pedagogical practice is



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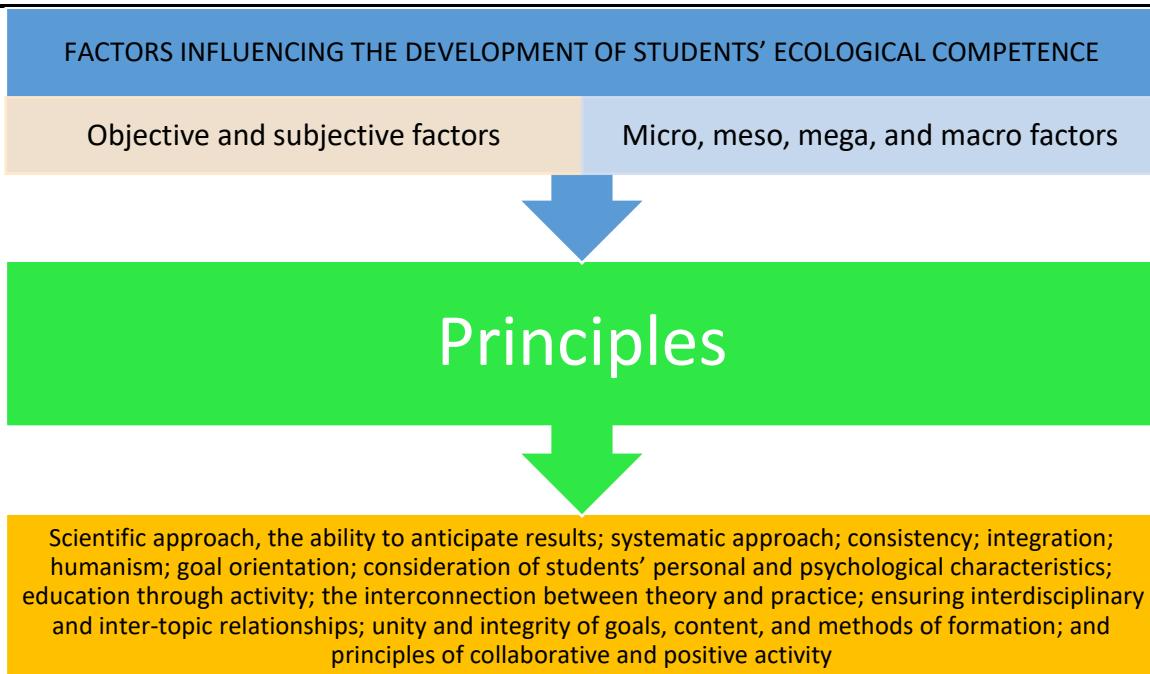
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organized. In this regard, monitoring of activities was carried out to demonstrate the ecological competencies acquired by students during their education; in the process of pedagogical activity - to determine and analyze the preparation of qualified personnel with ecological competence. The importance of objective and subjective factors affecting the development of ecological competence in students is important. In particular, due to globalization, it is observed that environmental problems have become entangled in a number of regions of our country. This situation increases the responsibility of representatives of pedagogical sciences to deal with the problem of solving environmental issues and finding scientific solutions. "In this regard, we highly value the role of the family in raising a well-rounded generation, both physically and spiritually mature, with their own independent opinion, able to distinguish black from white, and compete with their peers in developed countries, preserving their health, and guiding them through life" [1]. Future educators are also deeply analyzing the social issues of ecological problems, the positive and negative aspects that arise as a result of man and his activities. The relevance of the problem is directly related to the strategy of achieving personal well-being, tolerant attitude of members of society towards the environment, ensuring the sustainable development of our national economy, and ensuring that our country takes its place among the developed countries of the world.

There are objective and subjective factors that influence the development of students' ecological competence. Objective factors include the following: a) megafactors: space, the globe and planetary processes; b) macrofactors: country, state, people, society, culture; c) mesofactors: ethnos (nation), territorial conditions, cities and villages, mass communication networks in the place of residence; d) microfactors: family, school, friends, peers, educational institutions. Subjective factors include the student's understanding of the content of his internal needs, interests, and life relationships. A systematic approach that allows for the effective use of the necessary environmental education and training tools is necessary in the training of future teachers.



**Fig. Principles and factors of development of ecological competence of students**

Principles determine the characteristics of the activities of teachers and students' cognitive activity aimed at developing ecological competence. Educational principles reflect important internal aspects of the activities of subject teachers and students and determine the effectiveness of education organized in various forms, contents and ways [5].

It is worth noting that although the opinions of scientists about the number and name of educational principles differ from each other, their content and the tradition of understanding the laws of education are basically the same. Therefore, the following are considered as educational principles in the development of ecological competence in future teachers: scientificity, predictability of the result; systematicity; consistency; integration; humanity; goal-orientedness, taking into account the personal and psychological characteristics of students; education in activity; connection of theory with practice; ensuring interdisciplinary, inter-subject connectivity, unity and integrity of the purpose, content and methods of



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its formation, principles of creative collaborative activity. The principles of education are aimed at developing environmental competence in students and in each integrated lesson, several didactic principles may participate. They are of particular importance in solving the main goals of environmental education.

### **Conclusion**

Reforms in education and its modernization require initiative, a creative approach from professors and teachers in the lesson process, and independent thinking from students. The lesson in higher pedagogical education is the main area of pedagogical creativity. The main pedagogical need of the teacher - teaching, delivery - is realized precisely in the lesson process. Therefore, the lesson requires an innovative and systematic approach to the organization of the process of higher pedagogical education. In the current process of reforming the education system, it is important to provide students with knowledge of eco-pedagogy, to educate them as free and independent thinkers, to deeply understand the possibilities and essence of education, and to apply it in practice.

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