INTEGRATION OF INNOVATIVE TECHNOLOGIES FOR TEACHING ECOLOGY IN HIGHER EDUCATIONAL INSTITUTIONS OF DEVELOPED COUNTRIES INTO THE EDUCATION OF UZBEKISTAN

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Annotation
This article analyzes innovative technologies used in the process of teaching ecology in higher education institutions of developed countries.nnotation. This article analyzes innovative technologies used in the process of teaching ecology in higher education institutions of developed countries. On the basis of international experiences, the possibilities of identifying effective pedagogical approaches, digital tools and methodologies and applyin.

Keywords: environmental education, innovative technologies, higher education, digital education, international experience, Uzbekistan.

ИНТЕГРАЦИЯ ИННОВАЦИОННЫХ ТЕХНОЛОГИЙ ПРЕПОДАВАНИЯ ЭКОЛОГИИ В ВЫСШИХ УЧЕБНЫХ ЗАВЕДЕНИЯХ РАЗВИТЫХ СТРАН В ОБРАЗОВАНИЕ УЗБЕКИСТАНА

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Аннотация
В данной статье анализируются инновационные технологии, применяемые при преподавании экологических дисциплин в высших учебных заведениях развитых стран.тация. В данной статье анализируются инновационные технологии, применяемые при преподавании экологических дисциплин в высших учебных заведениях развитых стран. На основе международного опыта будут определены эффективные педагогические подходы, цифровые инструменты и методики иовы.

Ключевые слова: экологическое образование, инновационные технологии, высшее образование, цифровое образование, международный опыт, Узбекистан.

Global environmental issues demand from modern educational systems the introduction of new pedagogical technologies in the direction of Environmental Protection and sustainable development. lobal environmental issues demand from modern educational systems the introduction of new pedagogical technologies in the direction of Environmental Protection and

sustainable development. Innovative methods and technologies are widely used in the proclobal environmental issues demand from modern educational systems the introduction of new pedagogical technologies in the dire.

Developed countries emphasize strengthening higher education in ecosystems, sustainable development and environmental management not only as theoretical knowledge, but also with practical skills.eveloped countries emphasize strengthening higher education in ecosystems, sustainable development and environmental management not only as theoretical knowledge, but also with practical skills. F.

Educational technologies - online laboratories, interactive simulations and real-time Ecosystem Monitoring Programs are used in different states. Such approaches allow students to test complex environmental processes and develop practical solutions.

The following innovative educational technologies are effectively used in environmental education in developed countriesThe following innovative educational technologies are effectively used in environmental education in developed countries: SMILE (Stanford Mobile Inquiry-based Learning Environment), developed by Stanford University, encourages students to create, analyze and evaluate acting.

Through Environmental Systems Simulation or 3D virtual learning environments, students can explore environmental processes on an experimental basis close to real-world conditions.hrough Environmental Systems Simulation or 3D virtual learning environments, students can explore environmental processes on a.

In developed countries, ecology courses are organized in cloud fields such as Cloud LMS, allowing students to learn in a distance manner as well. This makes education stable and accessible.

Students are involved in solving real-world environmental issues in the process of Environmental Research, Project-Based Learning (PBL). This methodology serves to transform environmental knowledge into practical skills.

The Republic of Uzbekistan has specific strategic directions for the expansion and improvement of environmental education, the formation of ecological culture, the absorption of ideas of sustainable development into educational content and the introduction of innovative approaches are set as priorities in these documents.he Republic of Uzbekistan has specific strategic directions for the expansion and improvement of environmental education, the format.

1. Modernization of educational programs. In the process of teaching ecology, it is important to update the curricula on the basis of modern requirements.. Modernization of educational programs. In the process of teaching ecology, it is important to update the curricula on the basis of modern. Modernization of educational programs. In the process of teaching ecology, it is important to update the curricula on the basis of modern requirements. This requires

harmonizing them with practical training, rather than being limited to the theoretical assignment of environmental knowledge. In particular, it is possible to develop students ' skills to conduct independent research by introducing applied laboratory training, virtual laboratories and modern digital educational tools in the study of Ecology. Also, the inclusion of Interactive Simulations in the learning process serves to instill students ' deep mastery of knowledge by demonstrating changes in ecological processes, ecosystems and the environment in a visual and understandable way.

2. Improving the skills of pedagogical personnel. The professional potential of pedagogical personnel is a decisive factor in the effective introduction of international experiments.. Improving the skills of pedagogical personnel. The professional potential of pedagogical personnel is a decisive factor in the effective introduction of international experiments. Therefore, it is important to prepare teaching professors of Ecology on the basis of programs of international exchange of experience, to organize their qualification in foreign higher education institutions. In addition, the organization of modern teaching methods, special seminars and trainings on interactive and digital pedagogy, project and problem education technologies will activate the innovative activities of educators and contribute to an increase in the quality of Education.

3. Development of educational and industrial cooperation. The effectiveness of environmental education in international experience is directly related to the strong cooperation between education and industry.. Development of educational and industrial cooperation. The effectiveness of environmental education in international experience is directly related to the strong cooperation between education and in. Development of educational and industrial cooperation. The effectiveness of environmental education in international experience is directly related to the strong cooperation between education and industry. Therefore, it is important to establish cooperation in higher educational institutions of Uzbekistan with companies, production enterprises and environmental organizations of the ecological direction. Within the framework of such cooperation, the organization of practical internships, production practices and joint research projects for students makes it possible to connect their theoretical knowledge with real practical activities. As a result, the professional training of future specialists will strengthen and their competitiveness in the labor market will increase (Table 1).

Table-1. Directions for adapting international experience to the Uzbek education system

t/r	Routes	Content of international experience	Opportunities for implementation in the conditions of Uzbekistan	Expected results
1	Modernizing curricula	Virtual laboratories, digital simulations, interactive platforms	Incorporating practical laboratories and digital learning tools into the learning process	Students' practical skills and environmental literacy will increase
2	Pedagogical staff training	Xalqaro malaka oshirish, innovatsion pedagogika, treninglar	O‘qituvchilar uchun seminar-treninglar va tajriba almashinuvi	Ta’lim sifati va o‘qitish samaradorligi ortadi
3	Ta’lim–sanoat hamkorligi	Universitet–ishlab chiqarish integratsiyasi	Ekologik tashkilotlar bilan stajirovka va qo‘shma loyihalar	Bitiruvchilarning kasbiy tayyorgarligi va bandligi kuchayadi

In the process of introducing digital and innovative technologies in the teaching of Ecology on the basis of foreign experiments, a number of organizational, methodological and technological problems arise. Identifying these problems and systematically eliminating them is an important condition for improving the effectiveness of environmental education.

1. Insufficient development of digital infrastructure

The lack of modern digital infrastructure in many higher education institutions is seriously hindering the teaching of Ecology on the basis of innovative technologies.he lack of modern digital infrastructure in many higher education institutions is seriously hindering the teaching of Ecology on the basis of innovative technologies. In particular, the lack of stable operation of high-speed internet, modern computer equipment, ihe lack of modern digital infrastructure in many higher education institutions is seriously hindering the teaching of Ecology on the basis of on.

Solution strategies: step-by-step development of digital infrastructure in higher education institutions, creation of virtual and digital laboratories suitable for Environmental Science, strengthening the technical base on the basis of public-private partnerships, and the introduction of single national digital education platforms are necessary.

2. Low environmental and digital technology literacy among students and faculty

The effectiveness of teaching ecology on the basis of digital technologies directly depends on the knowledge and skills of educators and students in digital and environmental technologies.he effectiveness of teaching ecology on the basis of digital technologies directly depends on the knowledge and skills of educators and students in he effectiveness of teaching ecology on the basis of digital technologies directly depends on the knowledge and skills of educators and students in digitaled.

Solution strategies: it is advisable to organize digital pedagogy, environmental simulations, regular training courses and seminar-trainings for virtual laboratories for pedagogical personnel, and for students to include special modules aimed at the development of digital competencies in the curriculum.

3. Weakness of integration of the educational process with the field of practice

One of the important problems in teaching ecology is the insufficient harmonization of theoretical knowledge with practical activities.ne of the important problems in teaching ecology is the insufficient harmonization of theoretical knowledge with practical activities. As a result of the slowdown in cooperation between higher education institutions and environmental organizations, production enterprises, students are excluded from the opportunity to study real environms.

Solution strategies: it is necessary to expand cooperation agreements between state and non-governmental organizations in the field of Ecology, industrial enterprises and educational institutions, organize practical internships, field research and joint scientific and practical projects for students, as well as expand the opportunities of students and teachers to directly study foreign experience through international grants and exchange programs.

Moving foreign education models to the national education system in a complete and mechanical way may not give the expected result. In some cases, foreign experiments are observed to be incompatible with local conditions, material and technical base and national training programs.

Solution strategies: it is advisable to select foreign experiments, adapt them on the basis of analysis, develop educational materials taking into account local environmental problems and territorial characteristics, introduce innovative methods on an experimental basis.

The problems considered above create serious obstacles in teaching ecology in accordance with modern requirements.he problems considered above create serious obstacles in teaching ecology in accordance with modern requirements. However, these problems can be effectively overcome by developing digital infrastructure, improving the literacy of eduhe problems considered above create serious obstacles in teaching ecology in accordance with modern requirements. However, thl.

In conclusion, it can be said that innovative technologies in teaching environmental education in higher education institutions in developed countries serve to deepen students' knowledge, form practical skills, and increase environmental responsibility.n conclusion, it can be said that innovative technologies in teaching environmental education in higher education institutions

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