

**DEVELOPMENT OF BIOLOGY SCIENCE USING MOBILE APPLICATIONS IN  
DIGITAL EDUCATIONAL TECHNOLOGIES****Islomova Mohinur Ashurovna**

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**Abstract:** This article discusses the introduction of digital educational technologies, especially mobile applications, into the teaching process of biology, which is becoming an integral part of modern education. This direction comprehensively covers issues related to increasing the effectiveness of education, developing independent research and scientific thinking in students, as well as increasing interest in science.

**Аннотация:** Ушбу мақолада рақамли таълим технологиялари, айниқса мобил иловаларни биология фанини ўқитиш жараёнига жорий этиш замонавий таълимнинг ажралмас қисмига айланмоқда. Бу йўналиш таълим самарадорлигини ошириш, ўқувчиларда мустақил изланиш ва илмий тафаккурни ривожлантириш, шунингдек фанга бўлган қизиқишни кучайтириш бўйича масалалар ёритилган.

**Key words:** interactive, mobile application, digital technologies, biology, complex processes, biotechnology, advanced pedagogical technologies.

**Калит сўзлар:** интерактив, мобил илова, рақамли технологиялар, биология, мураккаб жараёнлар, биотехнология, илғор педагогик технологиялар.

Today, the global education system is undergoing a rapid digital transformation. Modern information and communication technologies, especially mobile applications, are opening up new opportunities in the educational process. Mobile education (m-learning) not only activates the learning activities of students, but also provides an interactive, visual and individual approach to learning. Biology plays an important role in understanding complex processes in nature, in shaping scientific thinking in the fields of the human body, ecosystems and biotechnology. Therefore, the effective use of digital technologies in teaching this subject, especially strengthening practical skills through mobile applications, is becoming a requirement of today.

Mobile applications in teaching biology provide opportunities for interactive tests, virtual laboratories. 3D models, simulation of biological systems, making the learning process interesting and effective. At the same time, they develop students' ability to learn independently, increase their interest in the subject, and connect theoretical knowledge with practice

The reforms being carried out in our country to strengthen the material and technical and information base of the educational process of higher educational institutions, provide them with high-quality textbooks and advanced pedagogical technologies, and cooperate with leading scientific and educational institutions of the world are increasing the need for continuous improvement of modern professional knowledge and pedagogical skills of teaching staff. Measures to improve the quality of education in higher educational institutions of the Republic of Uzbekistan include "increasing the participation and initiative of higher educational institutions in the comprehensive reforms being implemented in the country, tasks such as monitoring the knowledge and pedagogical skills of professors and teachers" [1].

Any complex modern information and communication technologies, integrations, global innovations in the field of science, digital trends, are first mastered by the teacher, and then, thanks to his knowledge, level, and abilities, they are brought to the minds and thinking of students. Year after year, the requirements for the professional activity of the teacher are increasing.

This is a modern requirement. Therefore, the term pedagogical skills applied to the teacher will never lose its relevance, but will constantly improve, enrich and change in accordance with the requirements of the times. In the development of a digital society, it is expedient to prepare the basis for the professional potential of future specialists based on knowledge in the field affected by technological production and the laws of society. The problems of developing mechanisms, tools, and technologies for preparing teachers with digital competence for field work in a modern educational environment remain relevant. In turn, this indicates the need for a scientific understanding of the essence of training teachers with high digital competence in this field of activity. The term “digital” is derived from the Latin and English word “digital” and means a level of quality that indicates continuity in the meanings of “data in numbers, signal”, “step by step” [2].

This word, which entered the Uzbek language in the mid-90s of the last century, first appeared in the form of the word combination “digital economy” and, without leaving the field of “economics”, has expanded its meaning and entered other areas in a comprehensive semantic color and has become one of the important terms in the field of information technologies. This word has reached such a wide scope and fruitfulness in its application that now it has become, without exaggeration, a common word of the Uzbek language, not as a term.

In recent years, the process of digitization of the educational process has been developing rapidly. This process requires not only the modernization of the infrastructure of educational institutions, but also the introduction of innovative approaches to the organization of the educational process. Digital educational technologies, including mobile applications, allow the acquisition of scientific knowledge in biology teaching through modern visual and interactive methods.

In general, when it comes to the importance of mobile applications in biology education, mobile applications have wide opportunities compared to traditional teaching methods in studying biology. With their help, the student can view biological objects and systems in 3D formats, conduct experiments in virtual laboratories. With the help of interactive tests and simulations, he consolidates his knowledge, develops the skills of independent information search and analysis.

Examples of such applications include BioDigital Human, Anatomy 3D Atlas, PlantNet, Khan Academy, or local educational platforms. They allow for visual and interactive explanations of topics such as human anatomy, physiology, genetics, and ecological processes.

In short, the introduction of digital educational technologies, especially mobile applications, into the teaching of biology is becoming an integral part of modern education. This direction is of great importance in increasing the effectiveness of education, developing independent research and scientific thinking among students, as well as increasing interest in science.

The use of visual and interactive methods in teaching biology through mobile applications enlivens the learning process, connects theoretical knowledge with practice, and facilitates understanding of natural processes. This approach develops students' ecological culture, critical thinking, and scientific analysis skills.

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