

METHODOLOGY FOR THE USE OF DIGITAL AND INFORMATION TECHNOLOGIES  
IN THE ELECTRONIC EDUCATIONAL ENVIRONMENT

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**Annotatsiya**

Ushbu maqolada zamonaviy oliy ta'lim tizimida raqamli va axborot texnologiyalarining o'rni hamda ularni "Raqamli va axborot texnologiyalar" fanini o'qitish jarayoniga integratsiyalash masalalari ilmiy-nazariy va amaliy jihatdan tahlil qilingan. Oliy ta'lim muassasalari talabalarini raqamli texnologiyalar bo'yicha o'qitishning takomillashtirilgan metodik modeli ishlab chiqilib, uning maqsad, metodologik yondashuvlar, jarayon va natija kabi tarkibiy qismlari yoritilgan hamda informatsion, tizimli va integrativ yondashuvlar asosida o'qitish samaradorligini oshirish mexanizmlari ko'rsatib berilgan.

**Kalit so'zlar** - raqamli texnologiyalar, axborot texnologiyalari, elektron ta'lim, kompyuter grafikasi, integrativ yondashuv, kompetensiyaviy yondashuv, pedagogik innovatsiya, modellashtirish, grafik vizualizatsiya, kasbiy tayyorgarlik, oliy ta'lim metodikasi.

**Аннотация**

В данной статье научно-теоретически и практически проанализированы роль цифровых и информационных технологий в современной системе высшего образования и вопросы их интеграции в процесс преподавания дисциплины "Цифровые и информационные технологии." Разработана усовершенствованная методическая модель обучения студентов высших учебных заведений цифровым технологиям, освещены такие ее компоненты, как цель, методологические подходы, процесс и результат, а также показаны механизмы повышения эффективности обучения на основе информационного, системного и интегративного подходов.

**Ключевые слова** - цифровые технологии, информационные технологии, электронное образование, компьютерная графика, интегративный подход, компетентностный подход, педагогические инновации, моделирование, графическая визуализация, профессиональная подготовка, методика высшего образования.

**Annotation**

In this article, the role of digital and information technologies in the modern higher education system and the issues of their integration into the process of teaching the subject "Digital and Information Technologies" are analyzed from a scientific-theoretical and practical point of view. An improved methodological model for teaching students of higher educational institutions digital technologies has been developed, its components such as goal, methodological approaches, process, and result have been highlighted, and mechanisms for increasing the effectiveness of training based on information, systemic, and integrative approaches have been shown.

**Keywords** - digital technologies, information technologies, e-learning, computer graphics, integrative approach, competency-based approach, pedagogical innovation, modeling, graphical visualization, professional training, higher education methodology.

The introduction of digital and information technologies into the modern education system is fundamentally changing the educational process. Electronic educational platforms, distance learning systems, and multimedia tools serve to increase the effectiveness of the educational process.

The new model of higher education development is mainly associated with a change in educational paradigms, which shift the focus from educational activity to self-education activity, which is the main task of the student's professional training. The subject "Digital and Information Technologies," along with technical disciplines, is a mandatory part of the curriculum for teachers.

The rapid development of computer technologies today poses such important tasks for students and teachers that this is reflected in such issues as rapid learning and assimilation of new information, the development of new teaching methods and tools, and their integration with computer technologies.

Also, researcher B.Z.Turaev studied the fundamental foundations of computer graphics, the formation of design and programming competencies in working with two- and three-dimensional objects, modeling complex graphic objects, the development of technical and creative abilities, and the content of the discipline "Computer Graphics and Design," improved taking into account the latest achievements in the field, issues of training professionally competent personnel with modern knowledge.

Agreeing with the opinion of M.Kh.Baybaeva, N.Gulyamkhodzhaeva, B.R.Mukimov, it is necessary to take into account the specific features of computer graphics when determining what information should be conveyed to students within the framework of the taught subject.

The educational process in higher educational institutions should be based on the formation of fundamental knowledge in the field of computer science in students, the study of information technologies of design, programs and systems for computer design and graphics, as well as methods of computer animation and graphic visualization. Students should thoroughly study the design of technical and production facilities using modern computer technologies and acquire skills in working with software products and information systems in the media industry and design.

The essence of digital and information technologies is understood differently in modern scientific literature. A number of researchers consider digital and information technologies as a branch of computer science dealing with the problems of obtaining various images (pictures, drawings, graphics, animation, etc.) on a computer. Digital and information technologies are also considered as tools. On the one hand, as a means of forming a graphic information environment using special equipment. On the other hand, it was considered as a means of developing the individual and their abilities (imagination, creative abilities, development of aesthetic culture, etc.).

Taking into account these achievements and shortcomings, and to overcome the problem of teaching the subject "Digital and Information Technologies," we proposed an improved model of the methodology for teaching students of higher educational institutions digital technologies.

The model of the methodology for teaching university students digital technologies consists of 4 components: goal, methodological approaches, process, and result.

In the target part, increasing the effectiveness of teaching the subject "Digital and Information Technologies" using digital educational resources is considered as a social need.

Methodological approaches: informational approach, systematic approach, integrative approach in teaching digital and information technologies.

In the process, the motivational goal, logic, principles, and means are considered. As a result, evaluation criteria and evaluation levels are clarified.

Digital and information technologies have become a separate science as a result of the rapid development of the capabilities of computer technologies, and the main goal of this science is the process of integration into all spheres.

Computer technologies and their software expand students' spatial imagination. It allows you to construct model parts and perform operations on them, making it easier for the teacher to explain them. Computer technologies play an important role in increasing students' creative approach to science.

Today, the application of an integrative approach is becoming increasingly relevant, therefore the role of digital technologies in the educational process is changing significantly. It is becoming not only an object of study but also an educational tool, the core of students' basic graphic preparation. Digital technologies are an effective tool for developing students' spatial imagination, which is used as an illustrative mechanism of the acquired knowledge base. This contributes to the acceleration of the learning process, taking into account the individual characteristics of students, and faster comprehension of information.

The research results show that digital and information technologies are important in the higher education system not only as an object of study, but also as an effective pedagogical tool. The proposed methodological model provides a systematic and integrative approach to teaching digital technologies and serves to improve the professional training of students, the development of their technical and creative competencies. Therefore, updating curricula based on modern requirements, effective use of digital educational resources, and consistent development of digital competence of teachers are an important condition for improving the quality of higher education.

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