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НАУКА В СОВРЕМЕННОМ МИРЕ: АКТУАЛЬНЫЕ ВОПРОСЫ, ДОСТИЖЕНИЯ И ПЕРСПЕКТИВЫ РАЗВИТИЯ

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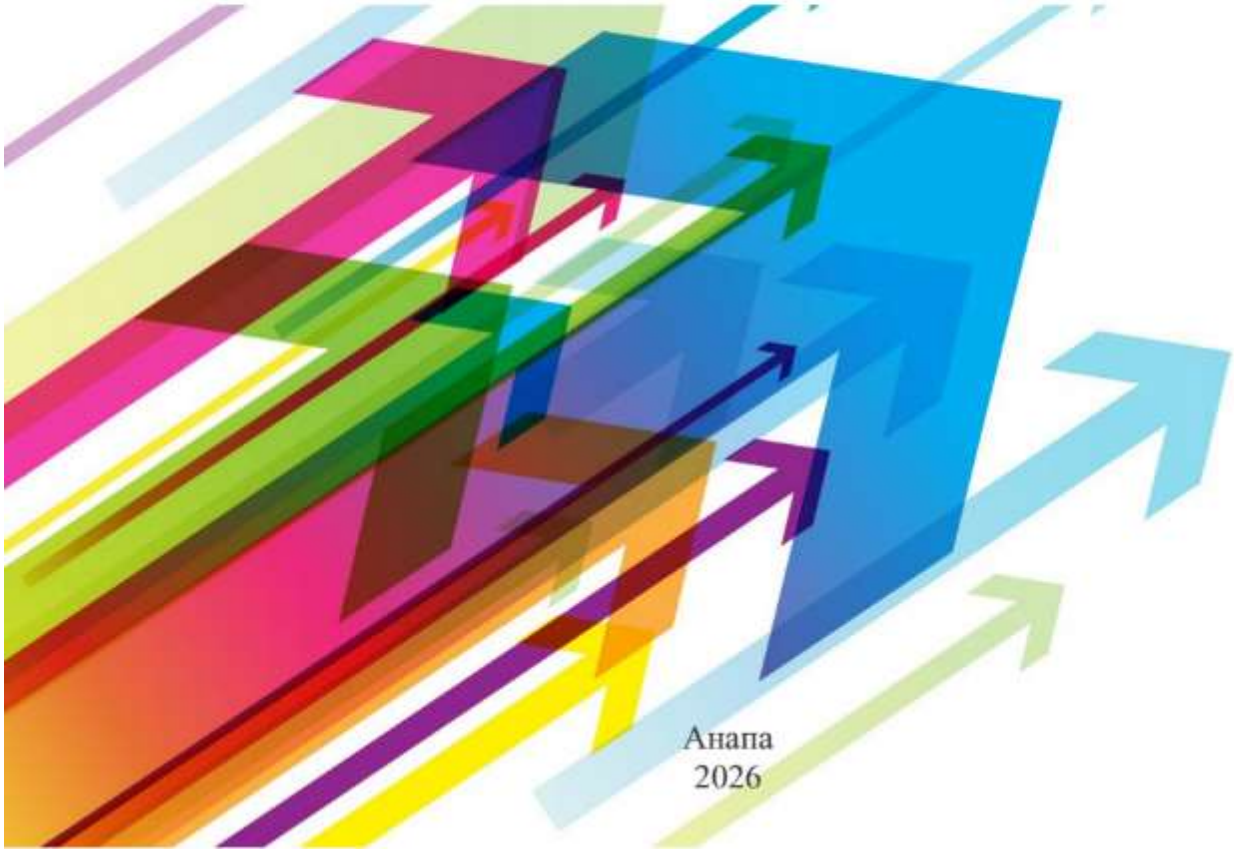

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PEDAGOGICAL MECHANISMS, PRINCIPLES AND STRATEGIC APPROACHES FOR THE EFFECTIVE INTEGRATION OF DIGITAL TECHNOLOGIES IN CONTEMPORARY EDUCATION SYSTEMS

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Аннотация. В статье рассматриваются педагогические механизмы и стратегические подходы к эффективному внедрению и использованию цифровых технологий в современной системе образования. Проанализированы возможности информационно-коммуникационных технологий, их роль в повышении качества обучения и развитии познавательной активности обучающихся. Раскрыта сущность цифрового обучения, обоснована значимость электронных образовательных ресурсов и интерактивных методов в организации учебного процесса.

Abstract. The article examines pedagogical mechanisms and strategic approaches for the effective integration and use of digital technologies in the modern education system. It analyzes the capabilities of information and communication technologies, their role in improving the quality of education, and enhancing students' cognitive activity. The essence of digital learning is revealed, and the importance of electronic educational resources and interactive methods in organizing the learning process is substantiated.

Ключевые слова: цифровые технологии, информационно-коммуникационные технологии, образование, электронное обучение, мультимедиа, интерактивные методы

Keywords: digital technologies, information and communication technologies, education, e-learning, multimedia, interactive methodsB условиях непрекращающейся цифровизации рекламные коммуникации

The digitalization of the education system is a process aimed at improving the quality of education provided, that is, replacing traditional technologies with effective new complex information technologies across all types of the national education system, as well as supporting and developing them.

Information-methodological materials are aimed at improving education through the use of communication tools. The capabilities of interactive whiteboards enable teachers to effectively use video and game programs in teaching students. The restructuring of the educational process in educational institutions can solve many didactic problems of professional training of future specialists and the formation of their special and information competencies. Education aimed only at the reproductive acquisition of knowledge, skills, and abilities is becoming ineffective today.

The main requirement of the information society is to provide students with the basics of information knowledge, develop their logical and systematic thinking abilities, form skills for using information technologies as a means of self-development and implementation, and adapt them to the information society. Thus, the transformation of information units into knowledge is a method of forming intellectual development aimed at shaping a systematic-information worldview through the development of students' creative abilities and value orientations.

The modern education system actively uses digital technologies and computer communications. In particular, the distance education system is developing rapidly, and several factors are crucial, including equipping educational institutions with powerful computer technologies, creating electronic textbooks for all areas of education, and developing Internet networks.

Today, there are many forms and tools of digital technologies. The comprehensive use of information and telecommunication tools in the educational process is possible only through the creation and use of multifunctional electronic educational resources. The main didactic goals of using such electronic textbooks in the educational process are to provide knowledge, reinforce knowledge, form skills and competencies, and monitor the level of mastery. At the same time, as part of methodological support, it is possible to distinguish system-methodological and scientific-methodological support, which reflects the depth and detail of studying the indicated aspects. The first is associated with a systematic approach to methodological support of the educational process, taking into account all components of the educational process as an integral pedagogical system.

The second involves the scientific substantiation of the methods used by the teacher, the organization of lessons, and the didactic tools applied.

Multifunctional electronic educational resources in the learning process allow:

organizing students' independent learning activities;

using the capabilities of modern information technologies in collecting, processing, storing information, and modeling objects and phenomena;

applying multimedia technologies, hypertext, and hypermedia systems;

monitoring students' intellectual abilities, knowledge, skills, and readiness for lessons;

automating educational management, assessment processes, and testing;

creating conditions for independent learning;

managing information flows in modern conditions.

Digital teaching methods in the educational process are called interactive because they are capable of "responding" to the actions of teachers and students and conducting a "dialogue" with them. This is the most important feature of digital teaching methodology. It is used at all stages of the educational process: explaining new material, reinforcing, revising, and controlling knowledge and skills.

The use of electronic educational resources in the educational process develops the scientific and methodological potential of the teacher and facilitates their work. Digital technologies help implement individual control of students at each stage of education and present information in graphical, textual, multimedia, video, and audio formats.

The use of electronic textbooks is much more convenient than traditional textbooks and includes a self-assessment system. This system replaces communication between the student and the teacher to a certain extent. The use of electronic textbooks not only increases students' cognitive activity but also creates conditions for developing logical thinking and creativity. According to M.I. Ragulina, the use of electronic learning tools contributes to organizing interaction between student–intern–teacher, forming a bank of methodological materials, and ensuring their effective use in the learning process.

However, methodological issues related to assessing learning outcomes based on ICT compared to traditional methods remain unresolved. Therefore, research devoted to methodological support of the educational process using ICT is highly relevant and confirmed by numerous publications. Methodological support is understood as a set of methods, procedures, and operations ensuring the implementation of the didactic process.

In the field of education, relying only on traditional teaching or textbooks no longer meets modern requirements. In today's information society, progress is impossible without the use of digital technologies. The effective use of teaching methods and the introduction of information and educational technologies into the entire education system contribute to the comprehensive development of the learning process.

The effectiveness of teaching depends on the individual teaching style, that is, the mechanism of perception through which educational material is effectively delivered to the student. Ensuring effective educational activity involves organizing individual and collective educational processes, project-based activities, and cooperation between teachers and students.

The development of information technologies contributes to the emergence of new teaching methods and improves their quality. In recent years, significant changes have taken place in modern pedagogy and practice. These changes are aimed at forming a knowledgeable individual who meets the requirements of the 21st century and can manage time effectively in the information-communication environment.

In conclusion, digital education and the use of computer-based teaching technologies increase students' level of knowledge and interest in subjects. These methods can be applied not only in informatics but in all disciplines. Today, a new element—computer technologies—has been added to the traditional "teacher–student–book" model. Therefore, the requirements for teachers are increasing. Teachers must develop their innovative activities, master new ICT tools, and systematically use them in the educational process to improve the quality of students' knowledge. Only then can a teacher who effectively applies technology observe improved learning outcomes.

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