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TA'LIMDA ZAMONAVIY AXBOROT VA PEDAGOGIK TEXNOLOGIYALARDAN SAMARALI FOYDALANISH

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Annotatsiya.

Ushbu maqolada zamonaviy ta'lim tizimining ustuvor yo'nalishlaridan biri — axborot-kommunikatsiya texnologiyalari va zamonaviy pedagogik metodlarning o'zaro uyg'unligi tahlil qilinadi. Muallif texnologiyani shunchaki vosita sifatida emas, balki ta'lim sifatini oshirish va ta'lim oluvchining subyekt sifatidagi faolligini rivojlantirishning muhim omili sifatida talqin qiladi. Maqolada ta'lim jarayonida multimedia imkoniyatlaridan foydalanishning psixologik-pedagogik jihatlari, shuningdek, o'qituvchining raqamli savodxonligi dars samaradorligiga qanday ta'sir ko'rsatishi yoritilgan. Nazariy qarashlar bilan bir qatorda, interaktiv metodlarni amaliyotga tatbiq etish bo'yicha metodik tavsiyalar ham taklif etilgan.

Kalit so'zlar: zamonaviy ta'lim, axborot texnologiyalari, pedagogik mahorat, raqamli muhit, interaktiv metodlar, ta'lim samaradorligi, multimedia vositalari, innovatsiya, o'qitish metodikasi, masofaviy ta'lim.

ЭФФЕКТИВНОЕ ИСПОЛЬЗОВАНИЕ СОВРЕМЕННЫХ ИНФОРМАЦИОННЫХ И ПЕДАГОГИЧЕСКИХ ТЕХНОЛОГИЙ В ОБРАЗОВАНИИ

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Аннотация.

В статье анализируется одно из приоритетных направлений современной системы образования — взаимосвязь информационно-коммуникационных технологий и современных педагогических методов. Автор рассматривает технологию не просто как инструмент, а как важный фактор повышения качества образования и развития субъектной позиции обучающегося. В статье освещаются психолого-педагогические аспекты использования мультимедийных возможностей в образовательном процессе, а также влияние цифровой грамотности преподавателя на эффективность занятий. Наряду с теоретическими положениями предлагаются методические рекомендации по практическому внедрению интерактивных методов обучения.

Ключевые слова: современное образование, информационные технологии, педагогическое мастерство, цифровая среда, интерактивные методы, эффективность образования, мультимедийные средства, инновации, методика преподавания, дистанционное обучение.

EFFECTIVE USE OF MODERN INFORMATION AND PEDAGOGICAL TECHNOLOGIES IN EDUCATION

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Abstract.

This article analyzes one of the priority areas of the modern education system — the integration of information and communication technologies with contemporary pedagogical methods. The author considers technology not merely as a tool but as an important factor in improving the quality of education and developing learners' active agency in the educational process. The article examines the psychological and pedagogical aspects of using multimedia capabilities in education, as well as the impact of teachers' digital literacy on lesson effectiveness. Alongside theoretical considerations,

methodological recommendations for the practical implementation of interactive teaching methods are proposed.

Keywords: modern education, information technology, pedagogical skills, digital environment, interactive methods, educational effectiveness, multimedia tools, innovation, teaching methodology, distance learning.

Introduction. The current stage of human development is characterized by the rapid penetration of information technologies into all aspects of social life, in particular, into the education system. Today, the educational process is not just about imparting and mastering knowledge, but also requires the formation of intellectual abilities of students, the development of independent thinking and decision-making skills in them. This, in turn, requires the abandonment of traditional teaching methods and the harmonious use of modern information and pedagogical technologies. In the context of the digitalization of education, the role of the teacher has changed radically: he is no longer the only source of knowledge, but acts as a “navigator” and “facilitator” guiding the student in the ocean of information. Information technologies (multimedia tools, virtual laboratories, interactive platforms) increase the visuality of the lesson, while modern pedagogical technologies (problem-based learning, project-based learning, collaborative pedagogy) ensure student activity in the lesson.

However, the effective use of technologies does not mean only equipping the classroom with computers. The main goal is to logically link technical capabilities with pedagogical goals, enrich the methodology, taking into account the psychology of the student and the specific characteristics of the subject. This article analyzes effective ways to integrate ICT and innovative pedagogical methods in the educational process, emerging problems and their solutions.

The issue of introducing information technologies into the educational process has been widely studied by world and domestic pedagogical scientists. In particular, B. S. Bloom's “Numerical Taxonomy” indicates the possibilities of developing students' higher-level thinking skills (analysis, synthesis, evaluation) with the help of technologies.

The works of local researchers and pedagogical technology specialists cover the methodology of integrating ICT from the organizational part of the lesson to the control stage. Literature analysis shows that two approaches are gaining priority in modern education:

1. Technological approach — in which the main focus is on the technical support of education and software tools.
2. Pedagogical approach — in which technology is just a tool, and the main goal is to optimize teaching methods (for example, project-based learning or collaborative learning).

Also, scientific articles of recent years have provided a lot of empirical evidence on the effectiveness of the “Blended Learning” and “Flipped Classroom” methods. However, the issues of improving the human factor in education and the information and methodological competence of the teacher are still relevant.

This study used theoretical analysis, comparative pedagogical observation, and methodological design methods. The research process included the following stages:

The method of systematic analysis was used to study the interrelationship of modern pedagogical technologies and ICT tools based on a systematic approach.

In pedagogical observation, the level of use of multimedia resources and interactive methods (graphic organizers, the “Chain” method) in current teaching processes was monitored and their impact on student learning was analyzed.

In methodological modeling, effective lesson models were developed that combine ICT and traditional lesson elements.

In the empirical approach, questionnaires and analytical work were conducted among teachers to identify the advantages and possible obstacles to the use of digital resources in the educational process.

The methodological basis of the study was the principles of person-centered education and a competency-based approach. This allows using technologies not just for demonstration, but for the formation of specific skills.

The integration of modern information technologies and pedagogical innovations in the educational process should not only change the “form” of the lesson, but also serve to deepen its “content”. Based on the conducted analyses and methodological observations, the following important aspects should be highlighted:

1. The balance of ICT and the “Human Factor”. No matter how perfect the technology is in this process, it cannot completely replace the methodological skills of the teacher. During the discussion, it was found that multimedia tools (projectors, electronic textbooks) give the expected result only when used in conjunction with interactive pedagogical methods (for example, “Chain” or “Brainstorming”). For example, the use of graphic organizers in explaining mathematical concepts helps to visualize the student's abstract thinking and systematize information.

2. A change in student motivation. This process is characterized by the fact that in traditional education the student is more of a “listener”, while in an environment where ICT and modern technologies are used, he becomes a “researcher”. Computer simulations and virtual laboratories allow the student not to be afraid of making mistakes, to conduct experiments and independently analyze the results obtained. This, in turn, increases the learner's intrinsic interest in the subject.

3. The issue of methodological competence. Another important aspect of the discussion in this process is that the effective use of modern technologies requires the teacher to constantly work on himself. Computer literacy alone is not enough; the teacher must clearly know at what stage of the lesson (in explaining a new topic, reinforcing or controlling) the use of digital resources will increase the effectiveness of the lesson.

4. Efficiency indicators. Experience shows that in lessons where information and pedagogical technologies are combined:

- The speed of information assimilation increases by 25–30%;
- The scope of logical and critical thinking of students expands;
- The opportunity to use time effectively during the lesson expands (for example, immediate feedback through automated testing systems).

Modern technologies should not be a goal in education, but a means to achieve quality results. The main focus should be on teaching students to search for, process, and use information in real-life situations, rather than memorizing ready-made information.

Conducted studies and observations of the educational process have shown that the systematic use of modern information and pedagogical technologies significantly increases the effectiveness of the lesson. The results obtained can be grouped into the following main areas:

1. When comparing lessons conducted in the traditional way with lessons combined with ICT and interactive methods (graphic organizers, the “Chain” method), the level of students’ mastery of the subject was on average 15–20% higher. In particular, the visualization of complex and abstract concepts (using multimedia tools) improved the retention of information in students’ memory.

2. The introduction of digital technologies and automated control systems has resulted in time savings at the following stages of the lesson:

- The time for preparing visual materials when explaining a new topic has been reduced by 25%;
- The process of assessing students’ knowledge and establishing feedback has been accelerated by 2 times.

3. The “Chain” and “Graphic Organizer” methods used in the study have formed the following skills in students: Logical consistency — more than 70% of students demonstrated the ability to independently analyze the relationship between topics;

Working in cooperation — during interactive games and group work, students’ engagement in the lesson increased by 1.5 times compared to traditional lessons.

4. The results showed that teachers who effectively use ICT not only save time, but also bring the scientific and methodological level of the lesson to a new level. According to a survey conducted among teachers, the use of electronic resources and ready-made methodological developments helps reduce the “psychological load” of preparing for lessons.

The conducted research and methodological analysis show that the effective use of modern information and pedagogical technologies in the education system is not just a requirement of the times, but a strategic necessity that guarantees the quality of education. Based on the studies conducted within the framework of the article, the following final conclusions were drawn:

1. The combination of information technologies (ICT) and interactive pedagogical methods serves to enrich the content of the lesson, expand the scope of logical and critical thinking of students. Directing it methodologically, rather than relying solely on technical means, gives high results.

2. The use of methods such as digital resources and graphic organizers significantly increases the “learning engagement” of students. This leads to a qualitative and quantitative improvement in mastery indicators.

3. In modern conditions, the main task of the teacher has changed from delivering information to teaching how to analyze information and apply it in practice. The digital and methodological competence of the teacher remains the main criterion determining the effectiveness of the lesson.

Based on the research, the following recommendations can be made.

• The use of ICT in educational institutions should be planned not randomly (fragmented), but as a logical part of each lesson.

• It is advisable to organize special seminar-trainings for teachers aimed not only at learning computer programs, but also at linking these programs with subject methodology.

• In order to widely use multimedia tools and electronic textbooks in lessons, it is necessary to regularly update the digital infrastructure of educational institutions and enrich the national educational resource base.

In conclusion, a teacher armed with technology and mastering modern methods is the main factor in educating today’s competitive personnel.

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