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SCIENTIFIC RESEARCH JOURNAL**

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ILMIY-TADQIQOT JURNALI**

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МЕНЕДЖМЕНТА И ЭКОНОМИКИ**



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DIGITAL TECHNOLOGIES AND ARTIFICIAL INTELLIGENCE IN EDUCATION: CHALLENGES AND OPPORTUNITIES

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Annotatsiya. Ushbu maqolada zamonaviy jamiyatning ta'lim, ijtimoiy va madaniy sohalarida raqamli texnologiyalar va sun'iy intellektning (SI) roli hamda rivojlanish jarayonlari tahlil qilinadi. Maqolada raqamli inqilob va sun'iy intellektning imkoniyatlari va cheklovlari, shuningdek, bu texnologiyalarni global miqyosda samarali va xavfsiz qo'llash zarurati ko'rib chiqilgan. Shular bilan birga odamlarni zamonaviy texnologiyalarning kelajagi, ularning inson hayotiga ta'siri va jamiyat taraqqiyotidagi o'rni haqida chuqur mulohaza yuritishga undaydi.

Kalit so'zlar: raqamli texnologiyalar, sun'iy intellekt, innovatsiya, ta'lim samaradorligi, ta'lim strategiyalari.

Abstract. This article analyzes the role and development processes of digital technologies and artificial intelligence (AI) in the education, social, and cultural spheres of modern society. The article examines opportunities and limitations of the digital revolution and AI, as well as the need for the effective and safe application of these technologies on a global scale, were discussed. The article encourages people to reflect on the future of modern technologies, their impact on human life, and their role in societal development.

Key words. digital technologies, artificial intelligence, innovation, learning effectiveness, educational strategies.

Аннотация. В данной статье анализируется роль и процессы развития цифровых технологий и искусственного интеллекта (ИИ) в образовательной, социальной и культурной сферах современного общества. В статье рассматриваются возможности и ограничения цифровой революции и искусственного интеллекта, а также обсуждается необходимость эффективного и безопасного применения этих технологий в глобальном масштабе. Статья призывает людей размышлять о будущем современных технологий, их влиянии на жизнь человека и их роли в развитии общества.

Ключевые слова: цифровые технологии, искусственный интеллект, инновации, эффективность обучения, образовательные стратегии.

Introduction. Today, digital technologies and artificial intelligence (AI) have become one of the main factors influencing society, the economy, and lifestyle worldwide. These technologies are helping to create not only technical innovations but also new economic systems and cultural changes. The problems, opportunities, and risks associated with the rapid development of digital

technologies and artificial intelligence are also of great importance.

The modern world is facing revolutionary changes in the fields of digital technologies and artificial intelligence (AI). They are fundamentally transforming the entire society, economy, science, and everyday life.

The emergence of new technologies and the development of

AI systems, while creating new opportunities for humanity, are also bringing about various challenges is fundamentally changing. The emergence of new technologies and AI systems development, along with creating new opportunities for humanity, also presents various challenges.

Artificial intelligence enables the personalization of the educational process by taking into account the specific needs and abilities of students. For example, programs based on artificial intelligence can identify students' strengths and weaknesses, and provide materials that match their learning styles. Individualization means considering students' individual needs, abilities, and learning styles in the educational process. The goal of this process is to increase students' learning effectiveness by providing education tailored to each student's unique characteristics.

The main aspects of individualization in the educational process involve addressing students' individual needs and increasing their learning effectiveness. This is achieved by tailoring education to each student's individual characteristics through the personalization of learning methods. The main aspects of individualization include: [1]:

1. Student analysis: Using artificial intelligence and analytical systems,

it is possible to analyze students' abilities and knowledge levels. This helps identify students' strengths and weaknesses.

2. Development of personalized learning plans: Based on the obtained information, it is possible to prepare individual learning plans for each student. These plans correspond to the student's unique abilities and learning pace.

3. Use of various materials and methods: By providing personalized educational materials, videos, interactive programs, and games to students, the learning process can become more interesting and effective.

4. Encouraging self-learning: Individualization provides students with opportunities for self-learning. This encourages them to think independently, study topics based on their interests, and expand their knowledge.

5. Effective communication with teachers: Teachers can communicate individually with students, better understand their needs, and develop necessary strategies to support students can exit.

6. Evaluation of results: In the process of individualization it is very important to evaluate and analyze their achievements. This means that students' monitoring changes and further improvement of the educational process allows. Individualization takes into account the specific needs of students in education is of great importance in increasing their success. Digital technologies and artificial intelligence further facilitate this process, effectively supports students' learning.[2]

New methods of studying the topics: Digital technologies and artificial intelligence presentation of educational materials in an interactive and interesting form allows. 3D modeling, virtual reality and interactive simulations allows students to test their knowledge in practice.

New Methods of Studying Topics Digital Technologies and Artificial intellect with the help of artificial intelligence makes the learning process interesting, interactive, and effective allows you to do this. These methods are used in the educational process of students to increase interest and deepen the assimilation of knowledge gives. Here are some of the main new methods:

1. Interactive learning materials: Students interactive programs, applications they will have the opportunity to acquire knowledge through games. This materials not only provide information, but also encourage students to actively participate requires participation, which in turn makes learning even more interesting does.

2. Virtual and augmented reality: Virtual reality (VR) and augmented reality (AR) technologies allows you to experiment in practice. For example, VR in history lessons explore historical sites or use AR in science lessons complex models can be observed.

3. Distance learning: Using digital platforms and online courses distance learning has become easier.

Students can come to classes from anywhere and

can enter regardless of time. This makes education more convenient and makes you more flexible.

4. Gamification: Adding game elements to the learning process, for example, students through points, awards, and competitive activities motivation can be increased. This method makes the learning process even more interesting and make it exciting.

5. Collaborative learning: Students collaborate using digital tools has the opportunity to work, exchange ideas, and work on team projects will be. This method helps foster peer learning and creativity gives.

6. Data-based learning: Artificial intelligence and big data is used to analyze student performance and for teachers appropriate educational strategies will be developed. These teachers need to understand that students' assistance in selecting materials and methods appropriate to their abilities gives.

7. Personalization of learning: Specific needs of students and the possibility of creating individual curricula in accordance with learning styles, makes the learning process more effective and personalized.[3] These new methods make the educational process more effective, interactive, and interesting, which helps students acquire knowledge and enhance their self-awareness will contribute to their better development. Digital technologies and artificial the application of intellect creates new

opportunities in education and contributes to improving the quality of students' education.

Teacher support for the success of the educational process is of great importance in ensuring. Digital technologies and artificial intelligence with the help of (SI), teachers perform their work more effectively and comfortably.

will have the opportunity. Basic support for teachers are as follows:

1. Resources and materials: Digital platforms and technologies for teachers when creating, modifying, and updating lesson materials helps. These include interactive presentations, videos, simulations, and can easily prepare other educational materials.

2. Assessment of students: using artificial intelligence and analytical tools teachers assess the level of students' knowledge and their are supported in the analysis of their development. This is for teachers the ability to identify the strengths and weaknesses of each student as well as assistance in the individualization of the educational process gives.

3. Professional development: improving the qualifications of digital technology teachers provide various online courses, seminars, and training programs to improve does. These opportunities provide teachers with new methods and techniques helps in mastering.

4. Collaboration and sharing experience: Through digital platforms teachers exchange experiences with each other, share ideas and will have the opportunity to discuss new ideas.

This, stimulates the professional growth of teachers and their unsure that they help one of them.

5. Decision Assistance: Artificial Intelligence to teachers helps in analyzing student outcomes and changes, which and for teachers to more effectively develop educational strategies helps.

6. Time management: Digital tools allow teachers to conduct lessons planning, effective time management and control of the learning process helps to do. This means teachers should pay more attention to their work allows you to.

7. Motivation and Support: Social for teachers stimulating their work by creating networks and communities and can be supported. This is the teacher's attitude towards their work increases their interest and provides them with additional support [4]. Supporting teachers, making the educational process more effective, ensuring the professional development of teachers and working with students are important factors that contribute to successful work. Digital technologies and artificial intelligence play an important role in this process, as they provide teachers with the opportunity to perform their work more effectively and qualitatively creates.

Optimization of the learning process: Digital technologies, distance learning expands learning and online learning opportunities. This is different for students in places and in time, which allows learning makes the process more flexible. Optimization of the learning process, increasing the

effectiveness of education, facilitating the learning process for students and improving results of the Republic of Uzbekistan. Using digital technologies and artificial intelligence the main aspects of optimizing this process are:[5]

1. Creating personalized curricula: Using artificial intelligence is possible to identify the strengths and weaknesses of students. This based on the analysis, individual curricula are prepared for each student. This makes the learning process more effective and individualized.

2. Interactive learning platforms: Students through digital platforms can work with interactive materials. Such platforms will make lessons more interesting and engaging, which will help students increases motivation and improves the learning process.

3. Real-time assessment and analysis: Teaching students in real-time during the learning process assessment and control are available in. Artificial intelligence is used to track student progress, which teachers need allows changing educational strategies.

4. Distance learning: digital technologies for distance learning makes it easier. Students attend classes from anywhere and at any time can access, making learning more convenient and flexible.

5. Encouraging self-learning: Digital technologies students will have the opportunity for self-learning. Learners through online resources, video lessons, and educational apps

can expand their knowledge in accordance with their interests.

6. Gamification: By adding game elements to the learning process it is possible to attract students and increase their motivation. Get points, rewards and competitive elements make reading more fun.

7. Collaborative and collaborative learning: Through digital tools student collaboration and collaboration on team projects can do. This process allows for the development of creativity and mutual learning helps to stimulate.

Optimization of the learning process with digital technologies and artificial intelligence help create a more effective, interactive, and accessible learning environment through gives. This is to improve the learning process of students, their to increase motivation and facilitate the work of teachers does [6].

Artificial intelligence data analysis and necessary for teachers to teach students more effectively can help in developing strategies. This means improving the quality of education increases. Data analysis in the educational process using digital technologies and artificial intelligence increasing student success with the help of artificial intelligence, better understanding their achievements and optimizing educational strategies is a necessary process for. Key aspects of data analysis consists of:

Observing student results: Using data analysis student grades, curriculum achievements and activities information about will be

collected. This information is for teachers helps to better understand the abilities of students;

Identifying changes: Success and by observing changes in achievements, teachers can identify problems early on and take the necessary measures to resolve them;

Optimization of educational strategies: analyzing how teachers can improve and personalize lessons allows for the development of strategies for. This is the educational process helps make it more efficient;

Opportunities for self-assessment: Data analysis for students creates the opportunity to analyze their own results and self-assess. Students can identify their strengths and weaknesses, as well as take the necessary measures to achieve their goals.

Predictive analysis: Using artificial intelligence, students' future success can be predicted in advance. These are teachers supporting students using information and development of strategies to stimulate their development can exit.

Professional development of teachers: Information from teachers to further improve their methods and the learning process through analysis will have the opportunity to improve the necessary qualifications. This, contributes to improving the overall quality of education[7]. Data analysis in the management and improvement of the educational process plays an important role. Using digital

technologies and artificial intelligence carry out data analysis, improve student performance helps to understand and optimize learning strategies, which increases the effectiveness of the learning process.

These aspects in the field of digital technologies and artificial intelligence in the field of education shows what an important role it plays. Their influence on educational processes helps to update and make it more efficient.

Conclusion. Digital technology in the classroom refers to various software and gadgets meant to help students with particular accessibility needs. The most effective way to reduce the number of repetitive, time-consuming duties a teacher undertake is to use technology in the classroom. Educational technology applications may save a lot of time and energy by automating or partially automating day-to-day operations like attendance tracking and performance monitoring. Modern technologies have been instrumental in complicated data analysis and management to make long-term decisions in areas such as climate change, air and water security, biodiversity protection, catastrophe resilience, etc. These technologies refer to innovation that considers natural resources while also promoting economic and social growth. These aim to dramatically decrease environmental and ecological concerns while producing a long-term product.

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