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USE OF ARTIFICIAL INTELLIGENCE IN EDUCATION AND METHODS OF QUALITY IMPROVEMENT

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Abstract
The article discusses the use of artificial intelligence in education, as well as solving the problems of personalization of education and career guidance. Identified and analyzed the need for the introduction of artificial intelligence in the learning process, as well as technologies that are already in use. The possibilities of using artificial intelligence in the personalization of learning are presented. After analyzing the possibilities of using artificial intelligence, we came to the conclusion that it is necessary to use and improve the technologies of neural networks and artificial intelligence in education.

Keywords: innovations in education, artificial intelligence, training, end-to-end technologies, vocational education.

Introduction

In the era of digitalization and globalization, the education sector is undergoing changes, acquiring new highly intellectual shades, namely the introduction of various digital fundamental tools such as neural networks, artificial intelligence, etc.

The educational system in Uzbekistan is an important component of the development of our state, requiring special attention to train highly qualified specialists with the necessary competitive advantages in the labor market and ready to realize their potential in the digital economy.

Presentation of the main material of the article. Consideration of the importance of using artificial intelligence in education is due to the need to develop programs and tools for personalizing the educational process to improve the quality and effectiveness of training.

Recently, you can often hear about the penetration of artificial intelligence into all spheres of human activity, including education. In this study, we will try to understand what it is and how it will affect the development of society and education. In general, neural networks are a mathematical model, a massive computing code capable of making a prediction by solving a given intellectual problem based on an assessment of the criteria of a given question, analyzing a huge amount of information, databases, artificial intelligence makes the most realistic and correct answer. The advantage of neural networks is their learning ability, they can learn independently, without the direct participation of an IT specialist Machine learning. Artificial intelligence or machine learning is currently actively used in education, from conducting and checking exams to automatically selecting material for students in areas where they have difficulty learning, offering the student to more consciously delve into the topic, increase the

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level of knowledge and abilities, analyzing the student's performance and productivity, adjusting his training plan with constant and loyal control of the "unfeeling" machine. Artificial intelligence is actively being introduced into the learning process and it is becoming obvious that the scale of using these end-to-end technologies will only increase annually. Let's consider the main areas of using artificial intelligence in education at the moment:

Automation of routine tasks. Teachers have always had a large layer of responsibility and a volume of work with students - monitoring academic performance, checking typical assignments, knowledge level and preparation for classes. Such routine tasks take a lot of time from the valuable learning process in the classroom. To improve the efficiency and quality of education, it is now possible to delegate such routine work to artificial intelligence. Let's agree that a person will never process such a volume of text and other information that can be processed by artificial intelligence. Human errors that artificial intelligence will not make are also excluded. Much is said now about the personalization of learning. By introducing artificial intelligence technologies into the educational environment, it is possible to implement the creation of personal study plans for each discipline in the training of specialists, and then implement control over the activities of students. This use of artificial intelligence in education is becoming possible thanks to the development by teachers and psychologists of methods for determining the abilities, motivation, willpower and other indicators of students, on the basis of which an individual training program is built. The creation of educational applications and specialized content for students also contributes to the personalization of the educational process. This function is actively used by many students and teachers [1, 4].

For example, in teaching foreign languages in different formats using one application. The technology allows you to recognize the student's speech, analyzing the construction of sentences, vocabulary and grammar, giving additional tasks of similar content for repeated

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consolidation of the material. These applications are very popular due to the fact that they are becoming a routine activity in gadgets for many people. In addition to learning foreign languages, the technology is applicable to all subjects and they are already beginning to gain success with both students and teachers. Personalized learning is a way of developing an educational plan and its implementation, in which the student is the subject of the educational process, taking into account his personal characteristics. In order to increase the effectiveness of the educational process from the standpoint of personalization, it is necessary to resort to the capabilities of artificial intelligence for both teachers and students themselves. Artificial intelligence is capable of collecting and analyzing large arrays of disparate data, and then getting a general picture of the situation from this. In addition, artificial intelligence is able to predict its development, based on the starting point and offer options for its adjustment depending on the request. Applicable to the educational process, artificial intelligence is able to identify certain disciplines, areas of these disciplines, in which students have problems. This helps to analyze the situation at a given moment in time and identify where the student needs additional help. Moreover, at each subsequent moment in time, the technology can determine the need to reduce or increase the amount of this help. This concept can help create a personalized learning path taking into account such parameters as: interest in the topic, psychological state, the ability to perceive this or that information at a certain point in time, etc.

In the digital age, in addition to mastering professional competencies (hard skills), it is necessary to develop soft skills. Constantly increasing arrays of information and knowledge have a huge impact on the human brain. It is impossible to assimilate all the information, but artificial intelligence can help in performing various types of tasks, allowing to develop critical thinking and creativity of students. Today, end-to-end technologies can become excellent assistants for collecting and filtering information that will help students study more effectively, and teachers improve the quality of assimilation of educational material. Neural networks are rapidly gaining interest among educational institutions or platforms, analyzing the activities of students, artificial intelligence is able to mechanically identify weaknesses in their academic performance in certain disciplines, which in turn indicates to teachers the need for additional intervention, and then help in resolving the issue of student performance. The concept of introducing artificial intelligence into the educational process is aimed at personalizing the system, adapting it to the abilities of students, as well as monitoring the social component, convenience and practicality of use. Artificial intelligence is also able to analyze the interests of students and offer them programs and courses in accordance with them. An individual approach allows you to interest students in the learning process, as well as control the independence of completing assignments during distance or independent learning.

The digital world is a huge flow of information, which a person cannot process and analyze, so let technology do it for him. Neural networks will help cope with the routine of teachers, checking tests, coursework, and voluminous homework. The ability to identify various kinds of errors in writing text, solving tests, solving mathematical equations, even complex ones, is a huge discovery for the field of education, as well as a very useful tool in the hands of a teacher.

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Another problem of modern education can be solved with the help of neural networks - this is career guidance, which is aimed not only at preparing for the choice of a profession, but also at helping in self-determination and subsequent employment of graduates. Analysis of answers to various questions, according to a logical chain built by a machine, the result is a detailed picture of a person's abilities and interests. It works as follows - a system of tests developed by an Uzbek group of leading teachers in various fields, the input data for the neural network are the results of the very tests that are offered to students to pass. The questions are selected and formulated in relation to clear requirements reflecting the level of professionalism and awareness in certain areas of education. After entering the data, the code, using a model specified by machine learning, produces a result, which is the numerical numbers of the areas in which the test taker should continue developing.

Conclusions

In conclusion, it is important to note that the use of end-to-end technologies, and in particular artificial intelligence and neural networks, can lead to a significant improvement in the effectiveness of training, the formation of a digital and information culture of students and will personalize the learning process. In addition, the use of end-to-end technologies will allow monitoring and adjusting the educational process, which is more in line with the requirements of a modern digital society. Now it will be much easier for applicants to make a choice of profession when entering educational institutions, because machine devices analyze only the input information that students themselves provide, without imposing the opinion of society, parents and peers. Artificial intelligence helps optimize approaches to learning depending on the needs and characteristics of each student. This is the need to use this technology in

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education for the purpose of its personalization. It should also be understood that artificial intelligence is not the only modern technology; it is closely intertwined with other cross-cutting technologies (big data, robotics and sensors, the Internet of things, cloud technologies, augmented and virtual reality technologies, quantum technologies, new production technologies), the use of which is a guarantee of successful professional activity of all participants in the educational process.

REFERENCES:

1. Abduqodirova, P., & Urinbayeva, Z. (2022, February). Mathematical Leteracy in PISA assignments. Conference Zone, 1(1), 233-234.
2. Eshnayev, NJ; Kobilova, S. (2024). Continuous inclusive education and its scientific and theoretical conceptual issues. European Science Methodical Journal, 2(6), 327-332.
3. Avazovna, X. N. (2022). Maktabgacha yoshdagi bolalar nutqini ostirish. World scientific research journal, 7(1), 3-5.
4. Khidoyatova, N. A. (2023). Methodical ways of developing the language of pre-school children. Galaxy International Interdisciplinary Research Journal, 11(4), 1033-1035.
5. Abdusamatova, S. (2023). Description of modern concepts of emotional intelligence. Science and innovation, 2(B11), 524-529.
6. Abdusamatova, S. (2023). Mechanism of innovation in the field of lifelong education. Science and innovation, 2(B1), 341-344.
7. Samarova, S. R. (2024). Features of personality and professional abilities of a teacher of a preschool educational organization. European Science Methodical Journal, 2(6), 393-397.
8. Muhammadiev, L. G. (2024). About Some Aspects of Socio-Economic Development in Uzbekistan. AMERICAN Journal of Language, Literacy and Learning in STEM Education, 2(2), 101-104.
9. Muhammadiev, L. G. (2023). The Role Of Legal Educational Technologies In The Lifelong Education System. Journal of Advanced Zoology, 44(S7), 1377-1380.
10. Фаязова, Д. Т. (2023). Повышение мотивированности студентов направления химии к изучению высшей математики. SCHOLAR, 1(13), 172-176.
11. Фаязова, Д. Т. (2023). Условия формирования профессиональных компетенций. Scientific Impulse, 1(8), 565-570.
12. Kobilova, S. X. (2024). (2024). Uzluksiz ta’limda imkoniyati cheklangan ta’lim oluvchilarning ijtimoiy sog‘lom ta’lim muhitini yaratish istiqbollari. Xalq ta'limi, 1(3), 120-124.
13. Khudoyshukurovna, K. S., Durdona, A., Safarova, F., & Madina, B. (2023). The Role of Inclusive Education in Providing The Activity of Students with Disabilities. Web of Teachers: Inderscience Research, 1(7), 63-66.
14. Urinbayeva, Z. (2024). Xalqaro baholash dasturlari asosida o’quvchilarda moliyaviy savodxonlikni shakllantirish. Inter education & global study, (5 (1)), 62-69.
15. Djumabaev, G. K., & Urinbaeva, Z. M. (2023). On stability for one parabolic type problem. Science and Innovation, 2(11), 38-43.

Web of Technology: Multidimensional Research Journal
webofjournals.com/index.php/4

16. Maxmudova, D., Urinbayeva, Z., & Eshqorayev, Q. A. (2022). Egra va egma xalqaro baholash dasturlari va ular orqali boshlang'ich sinf o'quvchilarini mustaqil fikrlashga o'rgatish. Uzbek Scholar Journal, 11, 248-251.
17. Muxlisa, O., & Mukhammadiev, A. (2024). Similarities and differences of tensein English and Uzbek languages. Journal of new century innovations, 52(4), 10-16.
18. Omonova, M. (2023). O'qituvchi pedagogik tafakkurining mohiyati va tavsifi. Fan Ta'lim va Innovatsiya, 1(2), 426-428.
19. Omonova, M. (2023). Ta'lim jarayonida tanqidiy fikrlash masalalari. Mugallim, 1(3), 80-82.
20. Omonova, M. (2023). Talabalarning bilish faoliyatini faollashtirishda axborot texnologiyalaridan foydalanish. UzMU xabarlari, 1(7), 143-145.
21. Khimmataliev, D., & Omonova, M. (2023). Organizing independent activity of students based on individual approach. Science and innovation, 2(B7), 97-100.
22. Shermetova, S. T. (2024). Psychological and pedagogical foundations of the organization oriented education. European Science Methodical Journal, 2(6), 566-570.
23. Shermetova, S. T. (2024). Learning and teacher collaboration is an important educational part of independent work methodology. Western European Journal of Modern Experiments and Scientific Methods, 2(5), 195-197.
24. To'raxodjayevna, S. S. (2023). O 'quv jarayonini tashkil etishda fizika fanidan mustaqil ishlarning o 'rni va roli. European Journal of Interdisciplinary Research and Development, 15, 94-99.
25. Xolboyev, A.; Kenjaboyeva, M. (2016). Ba'zi sonli ketma-ketliklar limitini Shtolz teoremasidan foydalanib hisoblash. TDPU xabarlari, 1(1), 298-299.
26. Haydarova, Z. N. (2023). Maktab o 'quvchilariga raqamli o 'rganish ko 'nikmalarini shakllantirishning pedagogik imkoniyatlari. Academic research in educational sciences, 4(CSPU Conference 1), 1008-1013.
27. Кодирова, Ф. У., Абдурахманова, Ш. Б. (2021). Оптимальные пути решения методических проблем инклюзивного образования. Integration of science, education and practice. Scientific-methodical journal, 2(4), 216-224.
28. Фаизова, Ф. Ш. (2021). Вопросы изучения статейных списков. Н34 Наука и инновации в XXI веке: Материалы Международной, 126.
29. Taymanova, E. (2023). Solvable extensions of the Quiasi-filiform LeLbniz Algebra L. Zamonaviy matematika, 1(1), 316-317.
30. Taymanova, E. (2023). Derivation of Heisenberg Leibniz Algebras. Operator Algebras, 1(1), 75-76.

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