ISSN: 2181-4341, IMPACT FACTOR (RESEARCH BIB) – 7,245, SJIF – 5,431

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A NEW GENERATION OF PERSONALIZED LEARNING FOR STUDENTS: EDUCATIONAL INNOVATIONS WITH THE HELP OF ARTIFICIAL INTELLIGENCE

Abstract: Nowadays, artificial intelligence (aı) has become one of the key technologies that is bringing about a comprehensive revolution in the field of education. this article analyzes the effectiveness of personalized learning platforms for students, their functions and advantages. ıt also provides detailed information about the technical infrastructure, operating principles and potential capabilities of personalized learning platforms using aı.

Keywords: artificial intelligence, personalized learning, educational technologies, SI platforms, automatic assessment..

1. Introduction

The education sector has always sought to use technological advances to introduce innovative approaches. Personalized learning involves adapting the learning process to the needs, abilities, and interests of each student. While in the traditional system this process was slow due to the limited time and resources of teachers, with the help of AI this process is becoming much faster and more efficient.

2. The concept of personalized learning Personalized learning is a form of education that is tailored to each student based on individual data to create a unique learning process. In this process, SI algorithms are used to analyze the student's knowledge, successes, and difficulties, after which a personal learning plan is developed.

3. The role of artificial intelligence AI is actively used in education in the following areas:

- **Data Analysis:** Analyze large databases to determine student knowledge levels and academic success.
- **Automatic grading:** Automatically grade essays, tests, and other written work.
- **Recommendation systems:** Suggesting materials based on the student's interests.
- **Gamification:** Motivating students by integrating game elements into learning.

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4. Technical infrastructure and technologies Personalized learning platforms operate on the following technologies::

- **Algorithms:** Machine learning algorithms (e.g. TensorFlow, PyTorch) to analyze student data and create personalized content.
- **Database:** SQL or NoSQL databases to store data related to student learning**.**
- **Natural Language Processing (NLP):** Creating opportunities to answer students' written and oral questions.
- **Cloud technologies:** Services such as AWS, Google Cloud to ensure platform scalability.

5. Benefits of personalized learning

- **Increased efficiency:** Students receive education tailored to their abilities, which improves outcomes.
- **Flexibility:** The platform adapts to each student's learning pace and style.
- **Support:** Students have the opportunity to consolidate their knowledge without the need for teacher assistance.
- **Cost-effectiveness:** Compared to the traditional system, these platforms save teachers time.

6. Implementation difficulties

- **Data Security:** Ensuring the protection of students' personal data.
- **Technological infrastructure requirements:** High-level technical resources are required to implement SI-based platforms.
- **Teacher training:** Special training is needed to explain the use of new technologies.

7. Future prospects

Personalized learning platforms using AI can radically change the education sector. This process is expected to make education more comprehensive, interesting and effective. In the future, developments can be observed in the following areas:

- Studying educational materials through voice assistants.
- Integrate virtual and augmented reality technologies.
- Automatic translation of educational materials in different languages of the world.

8. Conclusion

Artificial intelligence-based personalized learning platforms play a key role in improving the quality of education and creating an individual learning experience for students. With the help of these platforms, students receive education in a way that suits their abilities, which helps them increase the efficiency of learning, learn new knowledge faster, and achieve their goals. It also saves time for teachers and makes it easier to manage the educational process. The capabilities of the platforms serve not only to improve the existing system, but also to improve the quality of global education by introducing new technologies into education. With the help of AI, new horizons are opening up for making the learning process interactive and interesting, enhancing an individual approach, and effectively using educational resources. Therefore, personalized learning platforms are expected to be at the center of major technological changes in the field of education in the near future.

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