



IMPORTANCE OF ARTIFICIAL INTELLIGENCE IN EDUCATION

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Abstract

Artificial intelligence (AI) has the potential to transform the way we learn and teach, making it more personal, engaging, and productive. AI in education refers to the use of AI tools, such as machine learning and natural language processing, to enhance learning. It involves the use of algorithms that analyze data, identify patterns, and make predictions, allowing teachers to tailor learning to each student. The benefits of using AI in education are immense. Self directed learning is one of the most important skills in education, making students more productive because they can learn and follow along on their own. Intelligent tutoring, chatbots, grading and assessment can increase efficiency, save teachers time and provide more accurate and consistent teaching. However, there are some challenges to using AI in education. Privacy and security issues, lack of trust, cost and bias are some of the issues that need to be addressed. Ethical issues such as ensuring easy access, transparency and fairness in AI based education should also be taken into account. Despite these challenges, the potential of AI in education is still huge. AI can provide better data analysis, allowing teachers to make informed decisions based on data. This review explains the role of cognitive skills in managing and promoting learning and describes the impact of cognitive skills on learning.

Keywords: AI, Education, Personalized learning, chatbots

INTRODUCTION

Artificial intelligence (AI) is changing all industries, and education is no exception. AI has the potential to change the way we learn and teach, making it more personal, engaging, and effective (Al neyadi, Wardat, Alshanag, & Abu-AlAish, 2023). In this article, we explore the role of AI in education and how it is changing the face of learning. AI in education is about using artificial intelligence, such as machine learning and language processing, to enhance learning. Data, algorithms that identify patterns and make predictions allow teachers to customize learning for each student.

The benefits of using AI in education are significant. Self directed learning is one of the most important skills in education, making students more productive because they can learn on their own and keep track of their work (Shrivastava et al., 2023). Smart tutoring, chatbots, grading, and assessment can increase efficiency, save teacher's time, and provide more accurate and consistent instruction. However, there are some challenges in using AI in education. Privacy and security issues, lack of trust, cost, and bias are some of the issues that need to be addressed. There are also ethical issues such as



ensuring accessibility, transparency, and equity in AI based education (Gombos & Cree, 2018).

AI can provide better data analysis, allowing teachers to make informed decisions based on data. It can also increase student engagement (Yang et al., 2022) by enabling interactive and participatory learning (Wardat, Belbase, & Tairab, 2022). With the help of AI, education can become more accessible and inclusive, allowing students of all backgrounds to access quality education. In the following sections of this review article, we will take a closer look at the applications of AI in education, including self directed learning, smart tutoring, chatbots, and grading and assessment (Madasamy, Raja, Albonsrulah, & Al Bahrani, 2022). We will discuss the benefits and challenges of using AI in education, as well as ethical issues to consider. Finally, we will explore the future of AI in education and the opportunities it offers for innovation and growth.

RESEARCH METHOD

The research method used in this study is descriptive method. The type of data used in this study is qualitative data, which is divided into two groups: primary data and secondary data. Sources are obtained through the library research process, which refers to online and offline sources such as research articles, books, and news from reliable sources. These sources are collected through discussions and links from one document to another. The data collection methods used in this study are observation, interview, and survey. Analyze this information and draw conclusions.

RESULT AND DISCUSSION

Personalized Learning

The use of artificial intelligence (AI) in education enables personalized learning and transforms the learning process (Rana et al., 2022). Personalized learning is a teaching method that adapts learning to the needs, strengths, weaknesses, and interests of each student (Samad, Hamza, Mua z zam, Ahmer et al., 2022). Personalized learning uses technology to customize teaching to the level and learning pace of each student (Zarei et al., 2022). Artificial intelligence plays an important role in personalized learning by using machine learning algorithms to analyze data and identify patterns in student behavior, interests, and achievements (Samad, 2022). AI can use this information to provide learning skills tailored to meet the unique needs of each student (Samudrala et al., 2022). For example, AI can suggest suitable lessons, identify areas for improvement, and adjust the difficulty of learning tasks. One of the most important benefits of personalized learning is that it helps ensure that all students receive the support and guidance they need to reach their potential. Self paced learning can help struggling students catch up, while advanced students can compete at their own level (Gningue, Peach, Jarrah, & Wardat, 2022). By providing personalized learning, students are more motivated to learn, leading to better learning outcomes and higher retention (AlAbboodi, Fan, Mahmood, & Al-Bahrani, 2021). AI based learning platforms can provide

personalized learning experiences in many ways (Ibrahim, Al Awkally, Samad, Zaib, & Hamza, 2022). For example, AI can analyze students' past performance to identify and provide support in challenging areas (Alarabi & Wardat, 2021). AI can also adapt to students' learning, slowing down or speeding up instruction as needed. Knowledge.

Self directed learning based on cognitive skills has been successfully implemented in many educational settings, including K12 schools, higher education, and corporate training (Mohammed, Samad, & Omar, 2022). For example, Carnegie Learning's AI math software has been shown to improve student grades by up to 30%. Similarly, Duolingo's AI based language learning platform provides personalized learning based on each student's experience, interests, and learning (AlâBahrani, Majdi, Abed, & Cree, 2022).

Despite the potential benefits of AI-based self learning, there are still some challenges that need to be addressed. One challenge is the need for reliable and accurate data to inform intelligent algorithms (Wu et al., 2022). The quality of your information impacts the accuracy of your personal learning experience, so it's important to ensure your information is accurate and up-to date. Another challenge is that teachers need training and professional development to effectively use AI-based self learning (Zahmatkesh et al., 2022). Teachers should receive training on how to use AI tools and how to interpret and use the data generated by the algorithms. Self directed learning as a cognitive skill has the potential to transform the way students learn and reach their potential. Personalized learning can provide support for all students, leading to better learning outcomes, higher retention rates, and greater engagement.

AI can provide suggestions and recommendations for improvement, allowing for personalized and efficient learning (Jarrah, Almassri, Johnson, & Wardat, 2022). Although there are problems to be solved, the results of AI based self directed learning in education are significant and effective (Balamurugan et al., 2022) (Anjan Kumar, Singh, & Al-Bahrani, 2022).

Chatbots

Chatbots are computers designed to simulate human interaction, allowing them to interact with humans through text or voice interaction (Sreenivasu et al., 2023). In recent years, chatbots have been increasingly used in education to provide students with self support, task management, and new collaboration opportunities (Yeruva, Choudhari, et al., 2022). One of the key benefits of using chatbots in education is their ability to provide personalized support to students. Chatbots can act as virtual teachers by providing quick feedback, answering questions, and guiding students through their learning (Sridhar et al., 2022). Chatbots can also provide personalized recommendations for courses, highlight areas for improvement, and track progress, providing a more personalized learning experience. Another benefit of using chatbots in education is their ability to work for administration (Mohammed AlBahrani, Bouaissi, & Cree, 2022).

Chatbots can save teachers time by performing routine tasks such as scheduling, grading, and answering frequently asked questions, allowing them to focus on more productive tasks such as teaching and coaching (Gningue et al., 2022).

This automation also helps reduce administrative errors and inconsistencies, ensuring tasks are completed efficiently and accurately. Chatbots can also provide new opportunities to engage in learning (Patil, Raut, Pande, Yeruva, & Morwani, 2022). By providing an interactive experience, chatbots can make conversations more interactive and engaging, encourage active learning, and motivate students. Chatbots can also be used for gamified learning, providing rewards and incentives for completing tasks and achieving learning goals (Stoica & Wardat, 2022). Despite the many benefits of chatbots in education, there are still some issues that need to be resolved (Abbas, Al-abady, Raja, AL bonsrulah, & AlBahrani, 2022). One challenge is the need to ensure that chatbots are designed with students in mind, including their needs, interests, and learning (Al-Abboodi, Fan, Mhmood, & AlBahrani, 2022).

Chatbot design also needs to support accessibility to ensure that all students can access and use the technology. Another challenge is the need to ensure that chatbots are accurate and trustworthy, provide accurate information, and prevent bias or errors. Some schools and companies use chatbots in their education (Reddy Yeruva et al., 2023). For example, Georgia State University implemented a chatbot called “Pounce” that provides personalized support to students, answers questions, and provides guidance on academic and administrative issues. The University of Adelaide in Australia developed a chatbot called “MyUni” that provides support to students with various administrative tasks such as admission, time, and course materials (Mohammed Al Bahrani, 2019) (Yeruva, Durga et al. 2022). Similarly, Duolingo’s language learning chatbot provides students with spoken language practice and feedback (Gningue et al., 2022).

Artificial Intelligence in Grading and Evaluation Processes

Artificial Intelligence can improve grading and evaluation processes, provide instant feedback, and save teachers’ time and energy (Al Ali, Wardat, & Al Qahtani, 2023). AI algorithms can analyze students’ work and provide feedback based on predetermined criteria, allowing students to receive instant feedback on their performance (M Al Bahrani et al., 2018) (Li et al., 2022). An example of AI driven automated grading is the use of automated scoring systems (Stoica & Wardat, 2021). This system uses natural language processing and machine learning algorithms to analyze student data and provide instant feedback and grading. Benefits of Artificial Intelligence in Education:

Personalized Learning, Effectiveness, Improved Student Engagement, and Better Data Analysis The use of Artificial Intelligence in education has many benefits, including self learning, but there are also some advantages to incorporating Artificial Intelligence into education, but there are still some challenges and problems that need to be solved.



An education that allows them to learn on their own according to their own needs and abilities. This can improve learning outcomes and engage students.

Useful activities

For example, chatbots and virtual assistants can make learning fun and interactive and adaptive technology can help students engage by sharing insights into their understanding. Better data analytics: AI can analyze large amounts of data and provide insights into student performance, allowing teachers to better understand their students and adjust their teaching accordingly. This can lead to better learning outcomes and improved student performance. Schools should ensure that appropriate measures are in place to protect student privacy and prevent data breaches. Lack of Trust Students may refuse to accept grades or feedback generated by AI systems, preferring human input and grading. It is important to build trust with students and make them comfortable with technology.

COST

Financial constraints are difficult to meet. Schools should carefully consider the costs and benefits of using AI systems in the classroom. This can be unfair to some students and can exacerbate existing inequalities. Organizations should ensure that AI systems are unbiased and do not exacerbate existing inequalities. Ensure that all students, including students with disabilities, have access to and use these tools. This helps build students' confidence and increases their understanding of technology. AI has the potential to change the way we teach by making learning more personalized, efficient, and effective.

In the future, we can expect to see more AI systems that can understand and respond to human emotions, provide more feedback, and even create self-paced learning plans for all students. While there are many benefits to incorporating AI into education, there are still challenges and issues that need to be addressed. Schools should carefully consider the costs and benefits of using AI systems in the classroom and ensure that appropriate measures are in place to protect student privacy and prevent bias. By evaluating the benefits and challenges of AI in education, we can create more personalized, meaningful, and meaningful learning experiences for all students.

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