

Implementation of Artificial Intelligence in Economics Subjects: Literature Review

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ABSTRACT

This research aims to analyze the implementation of artificial intelligence in high school economics subjects. The implementation of AI in Economics learning is critical because it can increase the effectiveness and relevance of education, prepare students for future challenges, and answer the needs of education in the digital era. This type of research is a Systematic Literature Review (SLR). This literature study utilizes several reading sources such as books, notes, and research reports from previous studies. The data source of the research is based on the internet, such as e-books and online journals. Data obtained and selected according to the criteria set will be analyzed. Based on the research results, artificial intelligence applications often applied in learning economics include AI Virtual Mentors, Voice Assistants, Smart Content, Presentation Translators, Global Courses Automatic Assessment, and Personalized Learning. In the economics teaching environment, various artificial intelligence platforms can support the learning process, such as ChatGPT and Perplexity, DataBo, ELSA Speak, Formative AI, Gradescope Grammarly, and PowerPoint. Although AI offers convenience in the learning process, it is also accompanied by various threats to the continuity of education in Indonesia.

Keywords: Education, artificial intelligence, economics

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INTRODUCTION

The term Artificial Intelligence was first introduced by John McCarthy in 1955 (Zarei et al., 2024). Interest in artificial intelligence in education has increased in recent years, especially with technological advances in artificial intelligence (Stolpe & Hallstr, 2024). Artificial intelligence typically refers to technologies that enable

machines to exhibit Intelligence similar to human cognition and processing capabilities; in other words, technologies empower machines to understand, reason, execute tasks, and address problems similar to humans. Artificial intelligence is a branch of computer science that includes a variety of technologies, such as robotics and computers, and enables logical reasoning, machine learning, and natural language understanding, Denning & Tedre (2019); Ouyang & Jiao (2021) and Vartiainen et al., (2020) in Lim (2023).

The application of Artificial Intelligence as Arabic learning media in the era of Society 5.0 as it is today has many benefits in supporting the learning process (A. N. Putri & Hasan, 2023). This artificial intelligence can overcome the limitations of humans as teachers or tutors in the learning process. The presence of Artificial Intelligence in education brings many benefits to various parties, including students, teachers, researchers, and others. Sariyasa and Monika (2023) Students' responses to artificial intelligence (AI) are as follows: 56.67% of students found AI responsive, 89.44% of students saw AI as a practical and efficient tool, 78.89% of students felt that AI was interactive, 94.17% of students stated the usefulness of AI in courses and design, and 94.67% of students found AI helpful in the individual learning process. Artificial intelligence systems can help them by making their educational tasks easier. However, AI's presence can also negatively impact education. In addition to providing many benefits, Artificial Intelligence can potentially have a detrimental impact, especially in Indonesia's education context (Astutik et al., 2023).

In Indonesia, artificial intelligence has been widely utilized in various industries, including education, healthcare, manufacturing, services, and products (Ririh et al., 2020). In analyzing the experience of using artificial intelligence in the learning process, it was found that, on average, 50% of respondents used it, 20% of respondents used it very often, and 20% sometimes used it. The other 10% of respondents said they never used it (Sandy et al., 2023). Arly et al. (2023) noted that as many as 25.9% of students routinely utilize artificial intelligence (AI) as a tool for completing lecture assignments. Implementing artificial intelligence-based learning systems is expected to support educators in answering student questions while allowing them to focus on fundamental aspects such as strategizing teaching methodologies for upcoming lessons (Susanto, 2023). Therefore, this article will discuss the implementation of artificial intelligence in economic learning, artificial intelligence often used in education, and the impact of artificial intelligence in financial learning.

METHODS

This literature study uses several reading sources such as books, notes, and research reports from previous studies. The data collection method in this study uses a literature review. A Literature review is a research technique that involves collecting, evaluating, and analyzing various sources of information related to a specific topic (Budianto &

Dewi, 2023). Data sources from research are based on the internet, such as e-books and online journals (2020-2024). The data source in this study is secondary data. The data obtained and selected according to the established criteria will be used for analysis. The research thoroughly examines existing literature, emphasizing analyzing data collection methods, data reduction techniques, and the conclusion-making process. This study also uses the PRISMA. PRISMA is a tool and guide used to conduct systematic assessments. The keywords used in this research are Artificial Intelligence and Economics Subjects. The first step taken by researchers is to find journals that match their criteria so that in the final result, researchers get 25 journals and then analyze and discuss them in this study.

RESULTS AND DISCUSSION

Various approaches can be taken to use artificial Intelligence in learning. Along with the times, this development requires multiple fields, including education, to adapt and collaborate in solving existing challenges (Hakim, 2022). Artificial intelligence technology is crucial in enhancing a more engaged and participatory learning experience (Susanto, 2023). Ali et al. (2023) state that artificial intelligence in education can be a valuable resource for assisting students in learning. However, it is essential to ensure that AI is consistent with the importance of deep understanding, creativity, and critical thinking required by every student. Based on the 25 journals that have been processed, the results that can be discussed are as follows:

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Some applications of artificial intelligence that can be applied in the field of education include (Bethea & Samanta, 2019): AI Virtual Mentor, AI provides feedback and recommendations on learning materials like a teacher would. Voice Assistant is a well-known AI technology often used in various fields, including education. Smart Content: This AI technology serves to share and find material content and digital books that have been programmed virtually more efficiently and quickly. Presentation Translator: This technology is similar to Voice Assistant, which relies on voice. Global Courses, Simply put, Global Courses allow users or students to search and enroll in online courses from various countries worldwide. This course platform can provide recommendations based on the users' interests and interests according to the keywords they entered earlier. Automatic Assessment: This feature allows teachers to create quizzes and tests quickly and efficiently.

Artificial Intelligence Often Used in Economics Learning

In an educational environment, various AI platforms can support the learning process during college. Here are some AI platforms that are often used: ChatGPT and Perplexity: An AI

platform that can act as a virtual assistant to answer user questions and assist in organizing learning materials (Badruzzaman et al., 2024). DataBot: An AI application that serves as a virtual assistant with features to train logic and memory skills. ELSA Speak: An AI application that assists university students in developing language skills for unitive AI: An AI platform that provides material recommendations for teachers or lecturers. Gradescope is an AI application that helps teachers manage student assignments and automatically provide feedback. Grammarly: An AI application that helps students improve their ability to write correctly (Ali et al., 2023).

The Impact of Artificial Intelligence on Economic Learning

Every change brings inevitable good and bad impacts, and this also applies to the presence of artificial intelligence (AI). Although AI offers convenience, it is also followed by various threats to the continuity of education in Indonesia. The following are some of AI's positive and negative effects: (1) The presence of AI helps improve learning effectiveness and ensures that students get relevant and engaging learning experiences (Rifky, 2024); (2) Learners can experience increased ability in the presence of innovative and adaptive learning prepared by teachers or lecturers with high professionalism (Rifky et al., 2024); (3) By using artificial intelligence (AI) wisely, Indonesia can open the door to a more inclusive and technologically advanced education system, which aims to prepare students for future challenges and opportunities (Yulianti et al., 2023); (4) With its various features, AI has a crucial role in personalizing learning by collecting and analyzing data about learners' individual needs and development (Astutik et al., 2023); (5) The application of Artificial Intelligence in curriculum transformation can increase learning effectiveness, improve education quality, and prepare students with the skills needed to face future changes (Liriwati, 2023). Negative impacts: (1) Excessive use of AI can cause learners to become overly dependent on AI technology (Astutik et al., 2023); (2) The presence of Artificial Intelligence can lead to a decline in children's progress, including in affective, cognitive, and psychomotor aspects (Pongtambing et al., 2023); (3) the presence of AI also presents a high risk to data security, as it is vulnerable to security attacks and may experience data corruption or loss in the future (Nadila & Septiaji, 2023); (4) Students' potential dependency on artificial intelligence may reduce their motivation to search for information and develop independent thinking skills manually (Putri et al., 2023); (5) Artificial intelligence keeps teachers and students busy, requiring additional tasks from trainers, especially in administrative matters (Setiawi et al., 2024).

CONCLUSION

From the results and discussion, it can be concluded that Based on the research results, artificial intelligence applications that can be applied in economic learning are AI Virtual

Mentors, Voice Assistants, Smart Content, Presentation Translators, Global Courses Automatic Assessment, and Personalized Learning. In learning economics, various artificial intelligence platforms, such as ChatGPT and Perplexity, DataBo, ELSA Speak, Formative AI, Gradescope Grammarly, and PowerPoint, can support the learning process during college. Although AI offers convenience in economic learning, it is also followed by various threats to the continuity of education in Indonesia through positive and negative impacts.

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