



AI IN EDUCATION: A REVOLUTION IN SOCIAL SCIENCE LEARNING

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Abstract

Artificial Intelligence (AI) in education has become a subject that has attracted the attention of academics and educational practitioners. In today's digital era, the field of education has witnessed a significant transformation through the integration of AI. The aim of this research is to determine the impact of AI in social science learning. The research approach that the author uses is a qualitative method with a type of literature study. Data was collected through various relevant article sources. Data analysis was carried out through the stages of data reduction, data presentation, and drawing conclusions. The results of this research are that the use of AI in learning has a significant impact on social studies learning, the application of new technology and new programs certainly has positive and negative impacts depending on how it is used. So it can be concluded that AI in social studies learning, if used properly and correctly, will have a positive impact and avoid negative impacts.

Keywords: *artificial intelligence, social studies learning*

INTRODUCTION

Advances in information technology have brought significant changes in various sectors, including the world of education. In this digital era, Artificial Intelligence (AI) is one of the leading innovations that offers great potential to revolutionize the learning process, including in the field of Social Sciences (IPS). With AI's ability to process and analyze data quickly and accurately, this technology provides opportunities to create more personalized and adaptive learning experiences (Chassignol, Khoroshavin, Klimova, & Bilyatdinova., 2018).

The rapid development of AI technology has made the application and use of AI in education increasingly widespread (Paek & Kim, 2021). The rapid development of AI technology in recent years has had an impact on the world of education. The use of AI in education is becoming increasingly evident (Huang, Saleh, & Liu., 2021). Education is a field that is growing rapidly along with the development of digital technology. AI has a fundamental and far-reaching impact on education. Education that was previously based on knowledge transfer has now shifted to education

based on creative convergence. In the midst of these changes, the use of AI technology-based learning has become a topic that is receiving increasing attention in the learning context, including Social Sciences (IPS) learning.

Social Sciences, as a scientific discipline that covers various aspects of human life such as history, geography, sociology and economics, often requires a diverse and contextual learning approach. However, conventional teaching methods are often less effective in capturing the diversity of students' needs, so that learning outcomes are not optimal. In this context, AI can play an important role by providing an approach that is more tailored to individual student characteristics, ensuring that each student gains a deep understanding of the material being taught (Dogan, Goru Dogan, & Bozkurt., 2023).

The main challenge in learning social studies is the complexity and amount of information that students must master. AI can help by simplifying complex material and presenting it in a more interactive and easy-to-understand form. By utilizing technology such as Natural Language Processing (NLP), AI is able to transform dense scientific texts into narratives that are more interesting and easy to understand, making it

easier for students to understand the concepts being taught (Vincent & Van Der., 2020).

The development of AI in education allows the creation of a more dynamic and interactive learning environment. Through AI-based simulations, students can experience historical events or social phenomena virtually, which not only enhances their understanding but also makes learning more interesting and relevant. This interactive learning can help students to be more involved and motivated in studying social studies, which is often considered a tough and boring subject (Setiawi, Patty, & Making., 2024).

AI opens up opportunities to increase the accessibility of social studies education for students with special needs. Technologies such as speech recognition, data visualization, and image-based learning allow students with disabilities to more easily interact with course material. In this way, AI supports inclusivity in education, ensuring that all students, without exception, can reach their maximum potential in studying social sciences. (Jaiswal, A., & Arun, C. J., 2021).

AI offers many benefits in social studies education and also presents its own challenges. One of them is how to effectively integrate AI into the existing curriculum, and how to ensure that this technology truly supports, not replaces, the role of teachers in the learning process. Therefore, further research is needed to explore the best ways to utilize AI as an aid in effective social studies teaching (Zhang, Pei, Zhen, & Liang, 2023).

It is important for educators and policy makers to understand the potential of AI and how this technology can be optimized in order to face challenges to support social studies learning. Thus, AI is not only a technological tool, but also an integral part of educational strategies that focus on improving the quality of learning and student learning outcomes (Paek & Kim, 2021).

Social studies learning must be able to provide learning experiences that are oriented towards student learning activities, involving students in learning activities so that they have the ability to solve problems in a learning environment that is created according to actual reality. In the digital era, educators face various challenges that affect their roles and responsibilities. In addition, each student has different learning styles and needs. By using AI technology, educators can better face the challenges of the digital era and can design learning experiences that suit students' needs

(Sugihartomo, 2020).

The use of AI helps increase efficiency, personalize learning, improve feedback, influence teaching effectiveness, and prepare students for an increasingly technology-dominated world. AI technology-based learning helps educators improve the social studies learning experience for students (Jaiswal & Arun, 2021).

There are several studies that discuss the role of AI in the world of education. Sugihartomo (2020) in his research examined the implementation of AI in Indonesia. According to Jaiswal & Arun (2021), in their research they examined the potential of artificial intelligence for transforming the education system. Paek & Kim (2021) in their research examined the impact of artificial intelligence in education. According to Huang, Saleh, & Liu, (2021) studied the application of AI in the field of education, such as adaptive learning, teaching evaluation, virtual classes, and others. (Setiawi, Patty, & Making, 2024) studied the impact of artificial intelligence (AI) in high school learning. However, several existing studies have not specifically discussed AI in social studies learning. The existence of AI in the world of education is not only considered a new trend, but also a revolution that has a significant impact on the learning and development of students.

This research aims to examine and explore the role and potential of AI in social studies learning. By better understanding the contribution of AI in achieving the goals of social studies education, it is hoped that this research can provide a foundation for the application of AI in social studies learning in the future. Apart from that, it is also hoped that this research can contribute to the development of social studies learning.

METHOD

Research based on subjective experiences experienced by individuals. This approach is related to a personal view of the world and interpretation of various events that one encounters. Phenomenological research aims to interpret and explain the experiences a person experiences in life, including experiences when interacting with other people and the surrounding environment.

There are two focuses in phenomenological research, namely textural description and structural description. Textural description, what the research subject experiences about a

phenomenon. Structural description, how the subject experiences and interprets his experience. This description contains subjective aspects. This aspect concerns opinions, judgments, feelings, hopes and other subjective responses from research subjects related to their experiences (Nasution, 2023). The data source in this research is a secondary data source, namely obtained based on literature or documents. The data collection technique used is through document study techniques. Meanwhile, data analysis techniques are data reduction, data presentation, verification and drawing conclusions.

RESULTS AND DISCUSSION

In the 21st century, technology has become increasingly developed and sophisticated. There are many advanced technology products that can make human work and activities easier. One of them is artificial intelligence (AI). Artificial intelligence (AI) has experienced major developments in recent years and is a new technology that will revolutionize the way humans live and can help human work and activities in various fields, one of which is education (Dogan, Goru Dogan, & Bozkurt, 2023). This technology was introduced in the field of education, although many educators are not yet aware of its scope, especially what it contains (Hinojo-Lucena et al., 2019).

AI is a system or machine that can carry out tasks that require human intelligence. The goal is to create non-biological entities capable of understanding, learning, solving problems, and making decisions similar to humans. The development of artificial intelligence technology drives innovation in various sectors, including the development of new applications, products and services. AI enables the creation of solutions that can address complex problems and offers new approaches to problem solving.

AI has opened the door to a revolution in the social studies learning process, from conventional teaching methods to intelligent learning methods to improve students' learning experience (Jaiswal, & Arun, 2021). By using artificial intelligence, social studies learning has become more personalized, efficient, and accessible to everyone.

The implementation of AI is beneficial in social studies learning for students and educators because it can create a learning environment and provide collaborative learning, both between one

student and another and also between students and educators. The use of AI in the learning process can help educators and students gain more educational experience (Aldosari, 2020). The use of AI can improve educators' skills in implementing the learning process (Jaiswal & Arun, 2021). AI also introduces adaptive teaching strategies, namely an alternative learning process. The use of AI is called adaptive learning because when designing learning, educators must consider the availability of tools, conditions and learning environment of students. This consideration of course aims to maximize student learning outcomes.

Adaptive learning involves the delivery of learning experiences that are tailored to meet each individual's unique needs. Adaptive learning leverages timely feedback, multiple learning paths, and unique resources. The concept of adaptive learning is nothing new, with the help of modern technological developments, including artificial intelligence (AI), this concept is becoming more common and sophisticated. Adaptive learning technology takes a data-driven approach, collecting information from individual students and using that data to adapt e-learning content to suit students' needs.

Traditionally, manual grading of assignments or exams is a time-consuming process and is prone to bias and human error. However, with the emergence of automatic assessment systems supported by artificial intelligence (AI), educators no longer need to spend a lot of time checking students' work results. AI is able to evaluate students' answers quickly and provide instant feedback (Chassignol, Khoroshavin, Klimova, & Bilyatdinova, 2018). AI-based scoring systems use natural language processing (NLP), which allows machines to understand and interpret human language. This technology has the potential to facilitate the acquisition of foreign language skills (Vincent & Van Der, 2020). Apart from that, the AI system can also assess essays based on various parameters, such as clarity of language, relevance to the topic, grammar, punctuation, and spelling.

The existence of AI can also help students with special needs (Chassignol, Khoroshavin, Klimova, & Bilyatdinova, 2018). An example is Parrotron, a technology designed to help students with speech disorders. Parrotron is able to understand speech that cannot be heard clearly due to speech disorders, and then convert it into clearer

sentences that can be heard and understood by others. AI can also be an assistant that can search for information, summarize material, provide practice questions, and much more. Thus, AI has great potential to become a learning companion that supports the development of students with special needs.

Apart from providing many benefits, there are several challenges that need to be considered in using AI in social studies learning. These challenges are; (1) Cost, AI is an expensive technology, so not all schools can access it; (2) Availability of resources, AI requires large resources, such as data and experts, which are not always available in all schools, with the rapid growth of AI technology, there is a shortage of talented people who have the ability to continue developing and researching AI technology as well as those who can train it professionally (Paek & Kim, 2021); and (3) Ethics, there are several ethical issues associated with the use of AI in fish locus, such as potential discrimination and privacy.

Despite some challenges, AI has the potential to revolutionize social studies learning. By using AI, you can create a more personal, effective and interesting learning experience for students (Dogan, Goru Dogan, & Bozkurt, 2023). This will help students to learn faster, more effectively, and be more motivated (Vinichenko, Melnichuk, & Karácsony, 2020). In addition, AI can help educators be more efficient in teaching, so they can focus on more important tasks, such as providing guidance and support to students.

The use of AI in social studies learning can create an exploratory learning environment, meaning that students can explore their learning according to their own wishes. Exploratory learning environments can provide automatic feedback to correct learner learning outcomes. Thus, learners are encouraged to actively construct their own knowledge by exploring and manipulating elements of the learning environment rather than following a set step-by-step sequence (Paek & Kim, 2021).

CONCLUSIONS

The use of artificial intelligence (AI) in education, especially in Social Sciences learning, has shown great potential to revolutionize teaching and learning methods. AI enables more effective personalization of learning, increases the accessibility of educational materials, and provides faster and more accurate feedback for

students. In addition, AI also enriches the scientific research process with more sophisticated data analysis.

However, the application of AI in education also presents challenges, including ethical issues related to the privacy of student data and the potential for over-reliance on the technology. Therefore, although AI offers a variety of significant benefits, its use must be managed carefully and wisely to ensure that this technology truly makes a positive contribution to the learning and development process of students.

By considering the existing benefits and challenges, the integration of AI in social studies education can be seen as an important step forward in efforts to improve the quality and effectiveness of learning in the digital era.

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