

## APPLICATION OF ARTIFICIAL INTELLIGENCE (AI) IN SUPPORTING THE LEARNING PROCESS OF HIGH SCHOOL STUDENTS

Amru Yasir<sup>1\*</sup>, Zelvi Gustiana<sup>2</sup>, Buyung Solihin Hasugian<sup>3</sup>

Universitas Dharmawangsa

---

**Keywords:**

Artificial Intelligence; Learning; Students; Teachers; Technology.

**\*Correspondence Address:**

[amru@dharmawangsa.ac.id](mailto:amru@dharmawangsa.ac.id)

**Abstract:**

Artificial Intelligence (AI) has a very important role in facing the challenges of teaching high school children by teachers in the current technological era that continues to develop. Technological developments have succeeded in changing modes in education quickly, successfully influencing the role and duties of an educator or teacher. They are faced with various new challenges, such as having to manage large amounts of information, adapting teaching styles to individual needs, and having to provide good feedback to students. In facing these challenges, AI technology has succeeded in offering significant potential. This article will describe some of the ways in which AI technology is very useful in the Education context. AI can help teachers or tutors in managing data, AI technology can also support personalization of learning. Apart from that, AI can also provide good feedback to students. However, there are several new challenges that may arise in the use of AI in the educational context. AI cannot completely replace the role of teachers, but only serves as a powerful tool.

---

### INTRODUCTION

Artificial Intelligence (AI) or artificial intelligence experiences massive developments from year to year. Its presence with new features, functions and appearance increasingly has an impact on many aspects of human life, including education. Artificial intelligence is starting to play a role in learning activities in schools and universities. Artificial intelligence is becoming a primary part in the growth and development of educational technology. This certainly has explicit implications for human working life in the future.

When we talk about educational technology, we must be fair to say that this technology is not yet fully used in learning. In today's increasingly competitive era, there are still educational institutions that have not implemented technology in teaching and learning activities. Schools in the current era should take advantage of emerging

technologies that make the work of teachers and students easier . Schools can utilize applications or media that can automate tasks such as providing feedback, selecting appropriate learning materials, or aligning the curriculum with student needs.

Smart Teachers have certainly used tools such as projectors, learning software, digital platforms and other technological resources. Likewise, the role of AI in learning. The use of AI to support learning provides convenience that is similar to the use of various types of educational technology that have existed before.

Basically, the use of Artificial Intelligence in education is to provide opportunities for students to absorb learning experiences that suit their individual needs and preferences. This kind of personalization of learning allows students to learn according to their own ability level and learning pace. How is the relationship between personalization and the application of AI in learning activities? First of all, artificial intelligence (Artificial Intelligence) collects and analyzes data about individual students' needs, preferences and progress. Based on the information it obtains, artificial intelligence (AI) then provides learning experiences tailored to each student's needs. This is where we can reap the benefits of AI in designing learning activities for students, Smart Teachers.

## **RESEARCH METHODS**

This research applies a qualitative approach using library methods. The data collection method used is documentation techniques, where data is collected descriptively with the aim of finding information that is in accordance with the research theme. The steps in the research carried out include selecting a research topic, collecting data from library sources, analyzing data, preparing a research report. and presentation of research results. The instruments used in this research were various bibliographic sources, such as books, articles, journals, bibliography, and others. The validity of the data is guaranteed through the selection of literature sources that are relevant to the research theme, and data selection and verification have been carried out to ensure accuracy and validity. Validity in research is supported by reliable references and referrals, which come from educational and academic sources.

By applying the research methods that have been carried out, it is hoped that the results of this research can produce accurate information and can be used as a reference in the

context of using Artificial Intelligence (AI) technology to face the challenges of teaching teachers in the digital era, especially upper middle school students.

## **RESULTS AND DISCUSSION**

There are many benefits offered by AI in the educational context to provide new opportunities for educational development. The following is a more in-depth explanation of each of these benefits, including:

1. Increasing effectiveness in teaching, in the field of teaching the use of AI can be said to be effective overall. By analyzing student data, AI can help teachers identify learning patterns, recognize individual student needs, and adjust teaching methods more efficiently. Teachers can use the insights provided by AI to optimize learning strategies, choose the most effective learning methods, and adapt approaches to suit students. Apart from that, AI can also provide suggestions and recommendations to teachers regarding appropriate learning materials, effective teaching techniques, or interactive approaches that can improve student learning outcomes.
2. Efficient data management, the use of AI in data management can help teachers filter, group and analyze student data more efficiently. With the sophistication of AI algorithms, teachers can collect and integrate data from various sources, such as academic records, assessments, and personal information related to students. AI can perform data analysis quickly and can provide deep insight into students' personal progress, needs and learning patterns. This allows teachers to make more informed decisions, identify areas of concern, and adapt teaching strategies to suit student needs.
3. Effective feedback is an important element to improve student understanding. AI can be used to provide immediate, detailed, and relevant feedback to students. By analyzing student performance in real-time, AI can identify weaknesses or mistakes made by students in learning. AI can provide appropriate explanations, suggestions for improvement, or additional assignments that suit student needs. This immediate and targeted feedback can help students improve their weaknesses quickly and effectively. Apart from that, AI can also help teachers provide individual feedback to students in a busy

classroom environment, thereby improving the quality of interactions between teachers and students.

4. Personalization of Learning, one of the strengths of AI is the ability to personalize learning. Through a learning algorithm system, AI can analyze student data and recognize their learning preferences, learning styles, level of understanding and individual needs. With this information, AI can provide learning content that is appropriate to the level of difficulty, learning method, and delivery style of the material, thereby creating a more interesting learning experience for students. This personalization of learning can increase student motivation, accelerate learning progress and help students achieve better results.

With the various benefits of AI, it is very helpful in the world of education to open up new opportunities. Teachers can optimize students' learning experiences by utilizing AI to increase data management efficiency, personalize learning, increase overall teaching effectiveness and successfully provide effective feedback. Thus, AI can be an invaluable tool for creating better learning experiences, improving the quality of education and preparing students to face challenges.

## **CONCLUSION**

Artificial Intelligence (AI) has been successfully utilized in facing challenges for students, especially high school students, by teachers in the field of teaching in the current digital era. Artificial Intelligence has great potential in improving the effectiveness of teaching and learning. AI can help teachers manage student data more efficiently, can provide personalized learning, provide more effective feedback and can increase overall teaching effectiveness. With the ability to carry out sophisticated analysis, AI can help teachers identify learning patterns, recognize individual student needs, and adjust teaching methods efficiently. AI recommendations also help teachers in develop better teaching strategies.

However, it is important to remember the role of the teacher remains important in guiding students and AI technology should be used as an assistive tool strong to improve the quality of learning. With a good understanding of potential and the limitations of AI technology, teachers can make optimal use of it to prepare students facing challenges and opportunities in the digital era.

## REFERENCE

- Abimanto, D., & Mahendro, I. (2023). Efektivitas Penggunaan Teknologi Ai Dalam Pembelajaran Bahasa Inggris. *Sinar Dunia: Jurnal Riset Sosial Humaniora Dan Ilmu Pendidikan*, 2(2), 256-266.
- Akmal, H., & Susanto, H. (2018). Efektivitas Penggunaan Aplikasi Pembelajaran Berbasis Mobile Smartphone Sebagai Media Pengenalan Sejarah Lokal Masa Revolusi Fisik Di Kalimantan Selatan Pada Siswa Sekolah Menengah Atas. *Jurnal Historia*, 6(2), 197-206.
- Busyaeri, A., Udin, T., & Zaenudin, A. (2016). Pengaruh Penggunaan Video Pembelajaran Terhadap Peningkatan Hasil Belajar Mapel Ipa Di Min Kroya Cirebon. *Al Ibtida: Jurnal Pendidikan Guru Mi*, 3(1).
- Fauziningrum, E., Sari, M. N., Rahmani, S. F., Riztya, R., Syafruni, S., & Purba, P. M. (2023). Strategies Used By English Teachers In Teaching Vocabulary. *Journal On Education*, 6(1), 674-679.
- Kamila, J. T., Nurnazhiifa, K., Sati, L., & Setiawati, R. (2022). Pengembangan Guru Dalam Menghadapi Tantangan Kebijakan Pendidikan Di Era Revolusi Industri 4.0. *Jurnal Pendidikan Tambusai*, 6(2), 10013-10018.
- Lase, D. (2019). Pendidikan Di Era Revolusi Industri 4.0. *Sundermann: Jurnal Ilmiah Teologi, Pendidikan, Sains, Humaniora Dan Kebudayaan*, 12(2), 28-43.
- Manongga, D., Rahardja, U., Sembiring, I., Lutfiani, N., & Yadila, A. B. (2022). Dampak Kecerdasan Buatan Bagi Pendidikan. *Adi Bisnis Digital Interdisiplin Jurnal*, 3(2), 41-55.
- Ningsih, P. E. A., & Sari, M. N. (2021). Are Learning Media Effective In English Online Learning?: The Students' And Teachers' Perceptions. *Tarbawi: Jurnal Ilmu Pendidikan*, 17(2), 173-183.
- Rachbini, W., & Evi, T. (2023). *Pengenalan Chatgpt Tips Dan Trik Bagi Pemula*. Cv. Aa. Rizky.
- Rusmiyanto, R., Huriati, N., Fitriani, N., Tyas, N. K., Rofi'i, A., & Sari, M. N. (2023). The Role Of Artificial Intelligence (Ai) In Developing English Language Learner's Communication Skills. *Journal On Education*, 6(1), 750-757.
- Sari, M. N., & Ningsih, P. E. A. (2022). An Analysis Of Students' motivation And Anxiety On Learning English At Sma Negeri 6 Kerinci. *Pendekar: Jurnal Pendidikan Berkarakter*, 5(3), 181-188. 4 Juli.