

Artificial Intelligence (AI) in Education: Using AI Tools for Teaching and Learning Process

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Abstract: *Changes in the demands of education require innovation and creativity in the learning process. With the development of Artificial Intelligence (AI) in the field of education to help process daily activities including teaching and learning. The objective of this study is to investigate Artificial Intelligence (AI) in education, especially in the teaching and learning process. This research uses library research. The result analysis shows that AI has been widely applied to various educational technology platforms such as 1) Virtual Mentor, 2) Voice Assistant, for example, Google Assistant (Google), Siri (Apple), and Cortana (Microsoft). 3) Smart Content, 4) Presentation Translator. 5) Global Courses, for example, MOOCs, Udemy, Google AI, Alison, Khan Academy, edX, Udacity, Coursera, etc. 6) Automatic Assessment, 7) Personalized Learning for examples Ruangguru, etc. 7) Educational games, 8) Intelligent Tutoring System (ITS) or Intelligent ComputerAided Instruction (ICAI). Artificial Intelligence (AI) is the process of modeling human thinking and designing a machine so it can behave like humans. In the future progress of science and technology, teachers' work such as correcting, student attendance, giving daily tests and exams, explaining knowledge, making administrative reports and other systemic work can be submitted to be completed by technology devices. Teachers can save more energy and can focus more on nonsystemic work to create a golden generation with more character and quality with natural intelligence where robots cannot do it. Technology only runs systemically and is automated based on human commands, while the human mind, especially teachers deliver new knowledge. Therefore, the teacher's intelligence will be unmatched. AI that emerged as the industrial revolution is also the result of the creative minds of human natural intelligence. So when compared, between the two will never have an equal position.*

Keywords: Artificial Intelligence (AI), education, teaching and learning

I. INTRODUCTION

Today's technology has become an unavoidable part of the passage of time. Technology has not only changed people's lifestyles but has also changed how we work, learn, and interact. Various kinds of innovations appear all the time, making our activities and work more practical and effective. A more recent technological development is the emergence of the term artificial intelligence which is abbreviated as AI (artificial intelligence) which is currently starting to steal attention as a tool to act like humans. In its development, artificial intelligence has also penetrated the world of education. AI systems allow people to learn with the help of education assistants such as bots. The development of the times requires the world of education to adapt to technological developments to improve the quality of education, especially the adjustment of information and communication technology. Digital learning content that is developing today can be presented thanks to the application of AI. Artificial Intelligence (AI) is the process of modeling human thinking and designing a machine so that it can behave like humans or other terms called cognitive tasks, namely how machines can learn automatically from programmed data and information. Artificial intelligence can also be interpreted Artificial intelligence or AI is one part of computer science that makes machines (computers) able to do work as and as well as humans do. The use of Artificial Intelligence consciously or not we have applied it in everyday life. Many applications have implemented artificial intelligence as an advantage of these applications. Artificial intelligence technology referred to here refers to machines that can think, weigh the actions to be taken, and



can make decisions as humans do. Artificial intelligence (AI) is currently being developed on a large scale so that this technology will imitate and even take over the work normally done by humans. Based on the definition of AI, it was created to be able to act like humans in the form of programs and robots. Of course to facilitate human work. Even various digital platforms have used AI as a part of it. AI is used to make things easier for humans to do. Several technology companies have implemented AI including Amazon, Facebook, Microsoft, and Google. Artificial intelligence or (AI) is a technology where machines can learn and understand logic like humans. This technology is said to be able to help simplify human life which is very complex (Fitria, 2021a). AI itself works by combining the presence of several data, iterative processing, and intelligent algorithms. This allows the software to learn automatically from patterns or features in the data. AI can also be said to be a very broad field of study. The scope of theories, methods, technologies, and subfields that exist in AI is very wide, including machine learning, neural networks, cognitive computing, computer vision, and scientific language processing. The role of Artificial Intelligence (AI) technology is increasingly evident in various sectors, including the education sector. The presence of AI technology has transformed the educational curriculum, especially in the fields of technology, science, mathematics, and engineering. But AI will also change the face of the world of education as a whole. One technology that has recently received attention is Artificial Intelligence (AI). This technology has an important role in facilitating various job functions, including in the field of education. AI can also be implemented in the world of education. Teachers/lecturers can understand student needs more easily and more deeply (Fitria, 2021b). The students also can learn according to their needs without encountering difficulties. Artificial Intelligence (AI) is believed to be able to help humans learn better and achieve educational goals more effectively. So it's not surprising that currently many AI-based innovations and breakthroughs are being and will be applied to support the learning process to make it more practical and effective. So when AI is present in the education sector, which then raises concerns by teachers, it is a challenge that must be faced so that the existence of education continues. Some of the strong beliefs that teachers cannot be replaced by AI are teacher collaboration with AI in the implementation of learning. Teachers need to have skills in utilizing science and technology (Science and Technology).

METHOD

This research applies library research. Library research more emphasizes the strength of the analysis of existing sources and data by relying on existing theories and concepts to be interpreted based on the writings that lead to the discussion (Sari, 2021). Here, the research problem can only be answered through library research, and vice versa no one may expect the data and field research (Zed, 2004). The method of collecting data use document. If the data needed to answer the research problem are sought, in documents or library materials, the collection activities, that data is referred to as a document (Adi, 2021). The documents are can be both written documents, photographs, pictures, and electronic documents that can support the research. The example document used in this research is taken from books, articles journals both national and international related to the research. The method of analyzing data uses several steps, they are compiling related data from books and journals, analyzing the data (content) in the form of words and pictures then concluding.

II. FINDINGS AND DISCUSSION

Findings Artificial intelligence has been widely applied to various educational technology platforms as follow: a. Virtual Mentor The function of AI which is currently quite widely applied to various educational technology platforms, especially those based online, is as a virtual mentor. Mentoring is a process in which a more knowledgeable person (the mentor) assists a less-knowing person (the mentee) in achieving a learning objective (Klamma et al., 2020). AI can provide feedback on students' learning activities and practice questions, then provide recommendations for material that needs to be re-studied like a teacher or tutor. Zhang (2016) states that Virtual Mentor (VM) is a multimedia-integrated e-Learning environment that stresses interaction, personalization, and intelligence. One example is Blackboard (<https://www.blackboard.com/teaching-learning/learningmanagement/mobile-learning-solutions>) which is an



application that is widely used in universities in Europe and America. This AI tool is widely used by professors/lecturers to publish notes, homework, quizzes, and tests that allow students to ask questions and assignments for the assessment process. Applications are widely used by professors/lecturers to publish notes, homework, quizzes, and tests that allow students to ask questions and assignments. Applications can also be used for assessment/assessment. This application can identify the reasons behind students' misunderstanding and can offer solutions that have been released by the lecturer and programmed beforehand.

III. CONCLUSION

The existence of artificial intelligence may be able to provide knowledge to students, but developing character cannot be done. That is an educator's job. How to inspire, motivate, make students become good students." So the role of the teacher in providing motivation, inspiration, and developing character are what AI cannot replace because AI is not given feelings and emotions like humans in general. In the end, if we look at technological developments, we must be able to adapt as technology advances. If we do not adjust, we are an educator (teacher/lecturer) may be replaced by technology.

REFERENCES

- [1]. Abu Ghali, M. J., Abu Ayyad, A., Abu-Naser, S. S., & Abu Laban, M. (2018). An Intelligent Tutoring System for Teaching English Grammar.
- [2]. <http://dspace.alazhar.edu.ps/xmlui/handle/123456789/289> Adi, R. (2021). Metodologi Penelitian Sosial dan Hukum. Yayasan Obor Indonesia. Alhabbash, M. I., Mahdi, A. O., & Naser, S. S. A. (2016). An Intelligent Tutoring System for Teaching Grammar English Tenses.
- [3]. European Academic Research, 4(9), 1–15. Bin, Y., & Mandal, D. (2019). English teaching practice based on artificial intelligence technology. *Journal of Intelligent & Fuzzy Systems*, 37(3), 3381–3391. <https://doi.org/10.3233/JIFS-179141> Canbek, N. G., & Mutlu, M. E. (2016). On the track of Artificial Intelligence: Learning with Intelligent Personal Assistants. *Journal of Human Sciences*, 13(1), 592–601. Fitria, T. N. (2021a).
- [4]. Grammarly as AI-powered English Writing Assistant: Students' Alternative for Writing English. *Metathesis: Journal of English Language, Literature, and Teaching*, 5(1), 65–78. <https://doi.org/10.31002/metathesis.v5i1.3519> Fitria, T. N. (2021b).
- [5]. QuillBot as an online tool: Students' alternative in paraphrasing and rewriting of English writing. *Englisia: Journal of Language, Education, and Humanities*, 9(1), 183–196. <https://doi.org/10.22373/ej.v9i1.10233>
- [6]. Haryanto, H., Rosyidah, U., & Kardianawati, A. (2018). Model Elemen Game Imersif Berbasis Appreciative Learning dan Kecerdasan Buatan Pada Game Pembelajaran.
- [7]. Proceeding SENDI_U. <https://unisbank.ac.id/ojs/index.php/sendu/article/view/5970> Hwang, Y. S., & Vrongistinos, K. (2012). Using Blackboard and Skype for Mentoring Beginning Teachers. *American Journal of Distance Education*, 26(3), 172–179. Jain, S., & Alam, M. A. (2020).
- [8]. Comparative Study of Artificial Intelligence-Based Teaching With Human Interactive Teaching: In E. C. Idemudia (Ed.), *Advances in Business Strategy and Competitive Advantage* (pp. 68–100). IGI Global. <https://doi.org/10.4018/978-1-7998-3351-2.ch005> Klamma, R., Lange, P. de, Neumann, A. T., Hensen, B., Kravcik, M., Wang, X., & Kuzilek, J. (2020). Scaling Mentoring Support with Distributed Artificial Intelligence. *Intelligent Tutoring Systems*, 38–44.
- [9]. https://doi.org/10.1007/978-3-030-49663-0_6 Mufdalifah, M. (2017). Personalized Learning dan Multimedia Berbasis Komputer Masih Perlukah Guru? *JINOTEP (Jurnal Inovasi Dan Teknologi Pembelajaran): Kajian Dan Riset Dalam Teknologi Pembelajaran*, 1(1), 50–57.
- [10]. <https://doi.org/10.17977/um031v1i12014p050> Sari, R. K. (2021). Penelitian Kepustakaan Dalam Penelitian Pengembangan Pendidikan Bahasa Indonesia. *Jurnal Borneo Humaniora*, 4(2), 60–69.



https://doi.org/10.35334/borneo_humaniora.v4i2.2249 Terzopoulos, G., & Satratzemi, M. (2019). Voice Assistants and Artificial Intelligence in Education.

[11]. Proceedings of the 9th Balkan Conference on Informatics, 1–6. <https://doi.org/10.1145/3351556.3351588>

