

***ARTIFICIAL INTELLIGENCE 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 in the field of education to help process daily activities including teaching and learning. The objective of this study is to investigate Artificial Intelligence 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 or Intelligent Computer- Aided Instruction. Artificial Intelligence 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 non- systemic 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, education, teaching and learning

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 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. Thick textbooks can now be presented into content that is more concise, easier to read and understand by students, such as study guides, material summaries, or short notes. AI as a pillar of the industrial revolution 4.0 plays a central role in facilitating the learning process mediated by technology.

Artificial Intelligence 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 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 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 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. 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 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. 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. The students also can learn according to their needs without encountering difficulties.

Artificial Intelligence 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. So that teachers can take advantage of AI in terms of completing school administration such as making lesson plans, student attendance lists, reporting student learning outcomes, making learning media and learning resources. The researcher is interested to investigate Artificial Intelligence. Therefore, the objective of this

study is to investigate Artificial Intelligence in education, especially in the teaching and learning process.

Findings And Discussion Findings

Artificial intelligence has been widely applied to various educational technology platforms as follow:

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 assists a less-knowing person in achieving a learning objective. 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 states that Virtual Mentor is a multimedia-integrated e-Learning environment that stresses interaction, personalization, and intelligence.

One example is Blackboard 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.

The Blackboard concept is actually inspired by the conventional whiteboard that is in every classroom and discussion room. Blackboards in learning become the center and medium that displays material information from the teacher to students and is also a place for ideas, discussions, problem-solving and new insights to emerge. That's how Blackboard AI works, developing solutions and solving problems in a comprehensive and cooperative manner. AI can provide feedback on student learning activities and practice questions, provide recommendations for material that needs to be re-studied like a teacher or tutor.

This AI system will continue to learn and update information independently according to the needs and constraints faced by students. This tool can identify the reasons behind students' misunderstanding and can offer solutions that have been released by the lecturer and programmed in advance. This AI system will continue to learn and update information independently according to the needs and constraints faced by students. states that the quality teachers for quality students initiative created an electronic mentorship system between new and experienced teachers to help new teachers improve their instructional and classroom management abilities in light of the special requirements of English language learners in Southern California. The results of the data analysis revealed that combining the use both of Blackboard and Skype technologies was advantageous to starting instructors' ability to effectively educate ELLs.

Voice Assistant

This AI technology has similarities with virtual mentors. It's just that Voice Assistant relies more on the voice function as a center for interaction and communication. Voice assistants incorporate AI using cloud computing and can communicate with the users in natural language. Several Edutech platforms have also adopted Voice Assistant technology to help students find content and materials more quickly and practically.

Voice Assistant is also one of the most widely recognized and used AI technologies in various fields, including education. Examples of commonly known voice assistants are Google Assistant (Google), Siri (Apple), Cortana (Microsoft), and others. Voice Assistant allows students to search for materials, reference questions, articles, and books by simply speaking or mentioning keywords. Furthermore, the VA will display the information you want to search for according to the keywords mentioned. In addition to presenting information in the form of text and images, Voice Assistant can also speak and explain the information you need like a personal assistant.

Canbek & Mutlu (2016) states that AI assistants such as the ones described facilitate human-computer connection by using natural language in digital communication. The general goal of this research is to look at the possible usage of Intelligent Personal Assistants that learn using advanced cognitive computing technologies and Natural Language Processing.

Voice Assistants allow interaction with various learning materials without communicating with the teacher. As a result, the educational platform can be used anywhere and anytime. That way, the students can learn independently without worrying about getting confused even without a teacher/tutor, because by using VA, everything and information that is not understood can be presented only by voice. The application of artificial intelligence to voice assistants has similarities to virtual mentors. It's just that Voice Assistant relies more on the voice function as a center for interaction and communication. Voice Assistant allows students to search for materials, reference questions, articles, and books by simply speaking or mentioning keywords.

Smart Content

Smart Content is an AI technology that functions to share and find programmable digital book and material content more easily and quickly. Common examples of the application of this technology are found in various digital libraries today, both in schools, universities, and public libraries. AI can find and categorize the books we are looking for quickly and structured. We will even be given book recommendations and other content relevant to what you are looking for. Smart Content is a summary of various learning materials, from digital textbooks to interfaces that can be tailored to our needs. The examples are as follow:

1) Cram101

Artificial intelligence can find and categorize the books you are looking for quickly and in a structured way. We will even be given book recommendations and other content relevant to what we are looking for. Examples of smart content technology that have been used are Cram101 which has the function of breaking digital textbooks into specific parts. Cram101 is an online service that uses artificial intelligence to read textbooks, summarize them and post highlights and key points of the material online. The service is available for a subscription rate of \$9.95 a month. So the book can consist of chapter summaries, tests, and so on. Its usefulness is so that users can find more specific information according to their needs. Examples of smart content technology that have been used are Cram101 which has the function of breaking digital textbooks into specific parts. So the book can consist of chapter summaries, tests, and so on. Its usefulness is so that users can find more specific information according to their needs. Cram101 is one such framework that

produces advanced substances through part rundowns, practice tests, and cheat sheets (Jain & Alam, 2020).

2) Netex Learning

Netex Learning is yet another company focused on creating smart content platforms. The solution is full of AI-based features. The Netex platform also offers a personalized cloud platform with virtual training, conferences, and more. The application of artificial intelligence to smart content functions to share and find programmable digital book and material content more easily and quickly. Common examples of the application of this technology are found in various digital libraries today, both in schools, universities, and public libraries. There is even a more complete and sophisticated technology called Netex Learning that offers a personalized cloud platform with virtual training, workshops, and more. So when you are looking for a material or topic, this platform will recommend various multimedia such as books, videos, and various virtual training according to what you need/looking for. Netex Learning permits instructors and educators to plot an advanced educational program across video, sound, and an online colleague .

Presentation Translator

AI presents many opportunities to share knowledge around the world. Using Artificial Intelligence solutions, students can study various courses and training programs. There are many platforms with interactive learning materials from the best tutors. AI also provides opportunities for students who speak different languages or have vision or hearing problems.

For example, Presentation Translator is an AI-based solution that renders subtitles in real-time mode. With AI Speech Recognition, students can hear or read in their native language. This technology has similarities to Voice Assistant, which relies on voice to carry out its functions. It's just that Presentation Translator has a usability specification to explain or present a text from a different language into the language you want. So users only need to listen to various kinds of speech texts, articles, or digital books without the need to read. So with AI Speech Recognition, users can hear in their native language. We can read and understand journals, articles, or books from any language more easily and quickly.

This technology also has an important role for those who have limitations in terms of language and vision, so that this technology has been widely adopted for various needs. It has become one of the features that are always present on smartphones today, namely 'Voice Control'. Even today we can also type using only voice (voice typing), so this can be a solution for those of us who have problems typing long text. We just need to speak and then the sentence will be written into text automatically in the app.

Global Courses

This AI technology has been widely applied in various fields, including education. Simply put, Global Courses users or students can search for and take online courses from all over the world. The course platform can recommend your interests and interests according to the keywords you have previously entered.

There are various free and open courses that you can try right now with a variety of interesting, interactive, and structured features and content. Examples of courses that have implemented AI technology include courses on MOOCs, Udemy, Google AI, Alison, Khan Academy, edX, Udacity, Coursera, and others.

Automatic Assessment

AI is widely used for online automatic assessment and question correction purposes. The use of features like this makes it easier for teachers and tutors to prepare and conduct quizzes and tests easily and practically. Teachers and tutors no longer need to make questions and correct questions manually. The use of features like this makes it easier for teachers and tutors to prepare and conduct quizzes and tests easily and practically. Teachers and tutors no longer need to make questions and correct questions manually.

Personalized Learning

Personalized Learning bears some resemblance to other examples of AI technology. In essence, this AI technology allows students or users to get services like personal assistants. AI technology has a significant impact in improving the quality and learning patterns to be more practical and effective. This has also been proven by various studies and applications by various Edutech platforms, which indeed after using AI technology can have a significant impact on improving the quality and effectiveness of learning.

The application of this technology is quite common. Personalized Learning bears some resemblance to other examples of AI technology. In essence, this AI technology allows students or users to get services like personal assistants. Examples of the application of Personalized Learning, are those that have been implemented by Khan Academy (<https://www.khanacademy.org/>), Duolingo (<https://www.duolingo.com/>), Ruangguru (<https://www.ruangguru.com/>), and more.

AI will collect data from learning activities that have been carried out by users, and then will provide alternative learning solutions according to user needs. Personalized learning allows each student to progress and develop according to the speed and ability of each student in mastering the material and learning according to their desires and abilities. AI will also provide content recommendations, notify the user's study schedule, and various other important functions. AI will learn to optimize the way users learn so that the learning process can be better and more effective.

AI in education enables schools or educational institutions to create more personalized learning experiences. From AI analysis of student data, teachers and educational institutions can determine the speed of learning and the needs of each student. Then the school can make a study plan based on the students' strengths and weaknesses. But what must be underlined is that technology will only function as a tool, of course, it will not completely replace the role of a teacher. For example, relating to affective and moral aspects involving feelings and psychology, of course, can only be done by a teacher. So that AI technology should be used optimally according to its capacity and function, but on the other hand, the role of the teacher must be prioritized so that humanistic and affectionate values in an educational process can continue to be lasting and maintained according to the essence of education itself, namely humanizing humans.

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Educational Games

Educational games are games that are designed to learn but can still offer play and fun. Educational games are all forms of games that are created, to provide an educational experience or learning experience to the players of the game. Educational content. Examples of educational games are Duolingo, Khan Academy Kids. Quick Brain and Puzzle Kids.

1st is Duolingo. This children's educational game application not only teaches English, but there are also 30 other foreign languages that children can learn, including Mandarin, French, Italian, Spanish, Korean, Japanese, and others. 2) Khan Academy Kids. The next children's educational game is Khan Academy Kids. Khan Academy Kids includes thousands of interactive activities for toddlers, preschoolers, and kindergartens. In this one-stop educational kids game, kids can learn reading, language, writing, math, social- emotional development, solving skills problems, and motor development. 3) Quick Brain. The next children's educational game is Quick Brain. As the name suggests, this latest children's game sharpens the brain's speed in processing a calculation. 4) Puzzle Kids. Animals Shapes and Jigsaw Puzzles There are 4 categories of mini-games consisting of matching shapes, arranging objects, guessing pictures, and jigsaw puzzles. Each mini-game challenges your child to find and manipulate shapes, solve jigsaw puzzles, and recognize how shapes fit into the bigger picture, all in a colorful, easy-to-use display perfect for tiny hands. This children's educational game is not just a picture-matching game, but many tricks that hone children's memory, Moms. This game is suitable for training memory, concentration, accuracy, attention, thinking speed, and logic skills.

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 may be replaced by technology.

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