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Descriptive Evaluative Study – The Use Of Artificial Intelligence Features Reflected On The Performance Of The Company's Employees

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Abstract

Artificial Intelligence (AI) provide a significant impact on technological progress, increase performance in various sectors, and improve the quality of human resources. Artificial Intelligence (AI) has been applied to various fields to facilitate human activities such as study and work. This study aims to evaluate existing studies related to the use of AI features associated with daily activities in several fields and formulate directions for further studies that must be carried out from the evaluation of the literature. This study uses a systematic review method on case study journals with keywords "Voice Assistant, Virtual Mentor, Smart Content, Presentation Translator" obtained through the Google Scholar database with a range of 2021 – 2023. Based on the researcher's search, there were 6 journals according to the criteria which were then evaluated based on the parameters Voice Assistant, Virtual Mentor, Smart Content, Presentation Translator from case studies of the use of Artificial Intelligence (AI) in everyday human activities. The results of a systematic review show the use of Artificial Intelligence (AI) features Voice Assistant, Virtual Mentor, Smart Content, Presentation Translator mostly used in education. The use of these features is proven to have a positive effect on teaching and learning activities. Most of the use of Artificial Intelligence (AI) features focuses on application in the education sector, so further research is needed regarding the application of these features to other fields.

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Keywords: Artificial Intelligence, Virtual Mentor, Presentation Translator, Smart Content Voice Assistant.

INTRODUCTION

The emergence of Artificial Intelligence (AI) is shaping the improvement of various sectors, such as health, finance, manufacturing, to transportation (Zein, 2021). AI is expected to affect global productivity (Acemoglu & Restrepo, 2018), equality and inclusion (Bolukbasi et al., 2016), environmental results (Norouzzadeh et al., 2018), and various other sectors. Both in the short term and long term (Tegmark, 2018).

Artificial Intelligence was developed to simulate the human mind by studying the behavior of human intelligence using computer programs so as to be able to describe human behavior. These facts show that computers and human intelligence will have a broad and real impact on humans (Fjelland, 2020). Artificial Intelligence is described as the skills of machines and programs to simulate human mental experiences and patterns of practice, such as the ability to learn, judge and react to situations that are not programmed in machines (Huang & Rust, 2018; Cioffi et al., 2020). Various theories suggest that Artificial Intelligence can improve the quality of human resources, although Artificial Intelligence is also perceived as a problem because it can replace humans (McCarthy, 2007; Vinuesa et al., 2020).

Artificial Intelligence (AI) has been used by various fields to facilitate daily activities, for example to study and work. Several features of Artificial Intelligence (AI) are widely used by humans to help their activities such as *Virtual Mentor*, *Voice Assistant*, *Smart Content*, *Presentation Translator*, *Language Translator*, dan *Calculation Content* (Fitria, 2021; Jawale & Tilak, 2022; Sharma et al., 2021; Supriatna et al., 2023; Tjahyanti et al., 2022). These features are basic features that help a lot to improve the quality of its users (Alam, 2021; Joshi et al., 2021). It is important to evaluate the use of these Artificial Intelligence features, to find out their benefits and uses in supporting daily human activities.

This study aims to evaluate existing studies related to the use of AI features associated with daily activities in several fields and formulate directions for further studies that must be carried out from the evaluation of the literature.

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LITERATURE REVIEW

Artificial Intelligence (AI)

There are many scholars trying to define AI. For example, Russell and Norvig (2016) pointed out that AI is used to describe a machine or computer that mimics "cognitive" functions, for example, "learning" and "problem solving", which are related to the human mind. Poole, Goebel, and Mackworth (1998) considers AI as the study of intelligent agents capable of understanding their settings as well as achieving certain goals by maximizing probabilities. Kaplan and Haenlein (2019) considered AI as the ability of a system to precisely interpret and learn from the data it inputs, and to better utilize what it learns to achieve certain goals. Whereas Baker and Smith (2019), defines AI as “a computer that performs cognitive tasks, usually related to the human mind, specifically learning and problem solving”. While there is no generally accepted definition of AI, beyond computer science, it also includes disciplines such as information science, psychology, linguistics, neuroscience, philosophy, mathematics, and many others. AI is thus an interdisciplinary area with strong comprehensiveness (H. Zhao, Li, & Feng, 2018).

The term "Artificial Intelligence" originally started as a simple theory of human intelligence exhibited by machines (Bini,2018). In today's era of rapid technological advancement and exponential increase in massive data sets ("big data"), AI has moved from theory to real applications on an unprecedented scale (Topol,2019). Considered a subset of AI, machine learning (ML) denotes experiential "learning" related to human intelligence, while having the capacity to learn and improve its analysis through the use of computational algorithms (Bini, 2018; Nayor,2018). These algorithms use large sets of input and output data to recognize patterns and effectively "learn" to train the machine to make recommendations or autonomous decisions. After sufficient iteration and modification of the algorithm, the machine can take input and predict output (Bini, 2018; Nayor, 2018). The output is then compared to a set of known results to assess the accuracy of the algorithm, which is then iteratively adjusted to further refine the ability to predict results (Haeberle et al, 2019).

"*Deep neural network*" is a more complex version of this model that uses hierarchical levels to segregate and manage the end result. The network starts with an input level which then progresses to a number of “hidden levels” each responding to different input features (Topol, 2019; Ramkumar et al, 2019). This level allows for

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increased understanding as the input goes "deeper", enabling model development without explicitly programmed directions (Karnuta et al, 2019). As the machine learns a specific concept at many levels, the existing algorithm can then refine itself successively as new data becomes available. Similar to how the human brain works, these machines are able to make "neuronal" connections from "dendritic" connections at multiple levels of hierarchical data. This network thus gave rise to a new form of AI, known as "deep learning" (Haeberle et al, 2019).

AI performance indicator

Virtual Mentor

The function of AI which is currently quite widely applied in various educational technology platforms, especially online-based ones, is as a virtual mentor. Mentoring is a process in which a more knowledgeable person (mentor) helps a less knowledgeable person (mentee) in achieving goals (Klamma et al., 2020). Virtual mentoring can be done from outside the "home institution" to run a "pilot" study program with virtual mentoring (Harris et al., 2016). Virtual mentors can be used to track student progress instantly (Verma et al., 2021).

AI can provide feedback on student learning activities and practice questions, then provide recommendations on material that needs to be reviewed like a teacher or tutor. Zhang (2016) states that Virtual Mentor (VM) is a multimedia integrated e-Learning environment that emphasizes interaction, personalization, and intelligence. This AI system will continue to learn and update information independently according to the needs and constraints of its users (Fitria, 2021).

Voice Assistant

Voice Assistant or VA is part of technological developments through the application of Artificial Intelligence (AI) and Internet of Things (IoT). Voice Assistant is also one of the most widely known and used AI technologies in various fields, including education. VA is an effective virtual service robot based on speech recognition (McCartney and McCartney, 2020; Paluch and Wirtz, 2020, Wirtz et al., 2021). Sound triggers the VA to perform certain actions (Pemberton, 2018), encourage a more natural style of human-machine interaction (Petrov, 2019) compared to traditional touch screen or remote

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control. VA speech recognition capabilities process human voice input using AI and enable VA to produce coherent output.

Conversational AI typically consists of Automatic Speech Recognition (ASR), Natural Language Processing (NLP) and Text-to-Speech (TTS) (Ram et al., 2018). These touchless and screenless user interfaces are becoming very popular in the IoT ecosystem. VA is mainly adopted in private settings, such as homes or offices. Canbek & Mutlu (2016) states that VA facilitates human-computer connection by using natural language in digital communication. However, according to Zwakman, et al, (2021) VA has certain limitations, especially for understanding natural language. The main obstacle to using VA is that the user cannot know all the commands (Park, et al 2020)

Examples of voice assistants that are commonly known are Google Assistant (Google), Siri (Apple), Cortana (Microsoft), and others. Voice Assistant allows students to search for material, reference questions, articles, to books by simply speaking or mentioning keywords (Tjahyanti, 2022).

Smart Content

Is an AI technology that is used to share and find digital content and digital books that have been programmed virtually more easily and quickly. Common examples of the application of this technology can be found in various digital libraries today, both in schools, universities and public libraries. AI can find and categorize the books that are sought in a fast and structured manner. Users will even be given book recommendations and other content that is relevant to what is being searched for (Tjahyanti, 2022).

Machines can provide digital content of comparable quality compared to other means of delivery. Smart content in the form of video conferencing or video lectures has reached smart classroom settings. AI systems leverage traditional syllabuses to produce customized textbooks, in digital form, for learning interfaces, which support academic assessments. Easily expandable navigation with support for chapters and functional tests. Netex Learning, advanced AI that enables teachers to generate automated syllabus and educational data across machines. Automated seat allocation, traffic management, managing movement between classes, managing classroom temperature, humidity sensors, stock management and other settings, can be easily managed with AI (Mohanachandran et al., 2021).

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Presentation Translator

This technology is similar to Voice Assistant, which relies on voice to carry out its functions. It's just that Presentation Translator has usability specifications to explain or present a text from a different language into the desired language. So that users only need to listen to various kinds of speech texts, articles, or digital books without the need to read. So with this AI Speech Recognition, users can hear in their native language. Users can read and understand journals, articles and books from any language more easily and quickly (Fitria, 2021).

Presentation Translator provides a real translation of what the teacher is saying. It also gives young people who are unable to return to school due to illness or who really need to study at a higher level or in subjects not available in their current schools more possibilities (Devi et al., 2022). This technology also has an important role for those who have limitations in terms of language and sight, so this technology is widely adopted for various needs. This is one of the features that is always present on smartphones today, namely 'Voice Control'. Even now we can also type using only voice (voice typing), so this can be a solution for those of us who have problems typing long texts. We only need to speak and then the sentence will be written into text automatically in the application (Fitria, 2021).

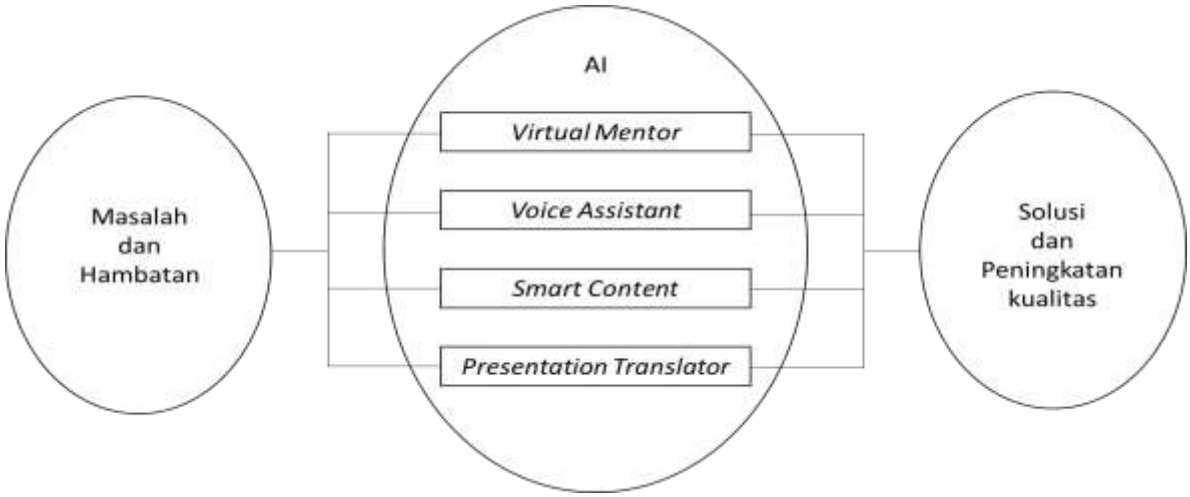


Figure 1. The concept of using Artificial Intelligence (AI) features in solving everyday problems

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METHOD

This study uses a systematic review by tracing previous studies that have been published. A systematic review is a comprehensive, protocol-driven review and data synthesis that focuses on a related key topic or question. The systematic review method that is used refers to studies conducted by Putra et al. (2023).

A systematic review is carried out through searching by writing the keywords “Voice Assistant, Virtual Mentor, Smart Content, Presentation Translator” in the Google Scholar database. A systematic review is carried out by evaluating articles ranging from 2021 to 2023. However, the articles evaluated in this study must meet several criteria, including:

- Obtained from the Google Scholar database
- Must be a case study
- The article is not a literature review
- The article is not a review

After the keywords "Voice Assistant, Virtual Mentor, Smart Content, Presentation Translator" with a span of 3 years were written simultaneously on Google Scholar, a total of 6 articles were obtained. The studies that emerged were then be analyzed using a descriptive evaluate using a number of parameters. Descriptive evaluative is this type of research is descriptive - evaluative with a qualitative approach. Evaluative research is research that evaluates a program, activity, theory or findings with the aim of measuring an activity, program and research by comparing the findings of previous theories. The evaluative descriptive used in this study is to evaluate the theory and findings of previous studies. These previous studies were searched using the Google Scholar database (Putra & Indradjati, 2021).

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Table 2. List of Journals According to Criteria

No.	Writer	Title
1.	Fitria, (2021)	Artificial Intelligence (AI) in Education: Using AI Tools for Teaching and Learning Process
2.	Jawale & Tilak, (2022)	Study On New Trends in Education Using Artificial Intelligence in Virtual Learning
3.	Joshi et al., (2021)	Evaluating Artificial Intelligence in Education for Next Generation
4.	Tjahyanti et al., (2022)	*Peran* Artificial Intelligence (AI) *Untuk Mendukung Pembelajaran Di Masa Pandemi* Covid-19
5.	Nwakanma et al., (2022)	*Evaluation of Language Translator Module for Metaverse Virtual Assistant*
6.	Kengam, (2018)	*Artificial Intelligence in Education*

This study uses 4 criteria as evaluation parameters, namely:

a. Voice Assistant, there are AI features that have voice or speech recognition support.
b. Virtual Mentor, there are AI features that have mentoring support or virtual assistance.
c. Smart Content, there are AI features that have search support and digital content providers.
d. Presentation Translator, there is an AI feature that has support for explaining or presenting a text from a different language in the desired language.

RESULTS AND DISCUSSION

Voice Assistant Evaluation

In the study of Fitria (2021) and Tjahyanti et al., (2022), it was stated that AI voice assistant or VA is an AI technology that is widely used in various fields including education. Google Assistant from Google, Siri from Apple, Cortana from Microsoft, and Alexa from Amazon are examples of voice assistants that are widely known (Jawale & Tilak, 2022). In the field of education, AI functions to search for articles, books, sample questions, and material by simply mentioning keywords (Fitria, 2021; Tjahyanti et al., 2022). The same is also mentioned in studies Kengam (2018), that voice assistants in the world of education function to help users to communicate directly with educational materials on the internet and user devices without the involvement of their teachers. The

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use of AI voice assistants is also used by Arizona State University by offering Alexa from Amazon to their new students in an effort to provide more concise and precise institutional information to students regarding their campus needs. Voice assistants can be used in homes and other non-educational locations to access any study aid whose purpose is to provide answers to common questions regarding campus needs or to individual student schedules and courses which can assist institutions in reducing the cost of printing handbooks that are only temporary use.

Virtual Mentor Evaluation

In a study conducted by Jawale & Tilak, (2022), AI virtual mentor or virtual mentor can be an Intelligent Tutoring System (ITS). ITS serves to help teachers to focus on students as mentors rather than just teachers and helps teachers to keep records of each student and admin work such as attendance assessment for each student (Jawale & Tilak, 2022). ITS helps solve teacher-student misconceptions and the gap between human knowledge and stored computer knowledge. ITS provides students with feedback on what they have gained from the software and tries to improve it online by the software assistant during the session. ITS helps students as well as teachers to get feedback from each student. It also helps students to repeat questions if someone finds difficulty with any question it breaks down small questions in level wise format and students then at the end by completing all levels they understand those difficult questions too. ITS is a combination of domain models and model padeologis.

Study of Fitria (2021); Kengam (2018); and Tjahyanti et al. (2022) also explained that AI with the visual mentor feature can be applied in the field of education by providing feedback from students' learning activities. AI visual mentor can provide study recommendations for students. Blackboard is an AI with a virtual mentor feature that is widely used by teachers in American and European universities to publish notes, homework, quizzes or tests, allows students to ask questions, and provide assessments and assignments. (Fitria, 2021; Tjahyanti et al., 2022).

Smart Content Evaluation

According to the study conducted by Jawale & Tilak (2022), smart content features can be found in AI with an adaptive learning system. AI with an adaptive learning system

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is able to create intelligent content according to the user's wishes and allows the user to complete courses using the content where the user wants. Smart content features can break down textbooks into easy-to-digest study guides with chapter summaries and practice tests.

Study by Fitria (2021) and Tjahyanti et al. (2022) also mentioned that smart content is one of the AI features found in various educational technology platforms such as Cram101 and Netex Learning. AI with smart content features can be used to share, find book content and digital materials that can be programmed more easily and quickly. Smart content features can find and categorize the books that are sought in a fast and structured manner. Users will be given recommendations for books and other content relevant to what they are looking for. Smart Content is a summary of various learning materials, ranging from digital textbooks to interfaces that can be customized according to user needs.

Presentation Translator Evaluation

Presentation translator is an AI-based solution capable of rendering speech into live subtitles. With the help of AI Speech Recognition, presentation translator users can hear and read in their native language (Fitria, 2021; Tjahyanti et al., 2022). Presentation translator can translate teacher presentations into any language that students choose. This will be especially beneficial for users with language impairments and users with hearing or vision impairments (Kengam, 2018). It is also beneficial for students if they are unable to attend school due to illness or other reasons (Joshi et al., 2021).

Presentation translator has usability specifications to explain or present text from different languages into the language the user wants. So that users only need to listen to various kinds of speech texts, articles, or digital books without the need to read. Users can read and understand journals, articles or books from any language more easily and quickly. The Presentation translator feature can be found in the form of a PowerPoint plug-in which is able to develop subtitles directly from what the user says when making a presentation (Jawale & Tilak, 2022).

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DISCUSSION

Our systematic review shows that AI with Voice Assistant, Virtual Mentor, Smart Content, Presentation Translator features has been widely applied in the world of education. AI with these features provides a lot of convenience for users in the field of education, especially students and teachers. Apart from providing convenience, these features can also be easily used anytime and anywhere. The use of these features will continue to grow and become more widely used. With the help of these AI features, students can complete school assignments, learn new things anytime and anywhere, understand foreign languages, and deepen knowledge of certain skills (Fitria, 2021; Jawale & Tilak, 2022). In addition, educational institutions and teaching staff also benefit from AI assistance such as more innovation in presenting subjects, making it easier for educators to present teaching materials with digital media, making it easier for educators to identify student strengths and weaknesses, compiling learning curricula more easily, convenience information sharing for students, and other benefits (Fitria, 2021; Jawale & Tilak, 2022; Tjahyanti et al., 2022). Another advantage was obtained during a pandemic where teaching and learning activities were changed from conventional to online to limit activities outside the home, facilitate the delivery of information and communication between teachers and students, and so that learning can continue (Fitria, 2021).

Apart from these examples of promising AI applications, some things might be considered as weaknesses of AI, especially in the education sector. AI limits human interaction, the development of social skills, and the ability to build relationships. AI can also be a problem for developing countries due to its relatively high cost and insufficient internet connectivity to operate AI. AI can support teaching and learning but ethical implications and risks will arise with the development of AI applications in higher education. One example is, due to the ongoing coronavirus pandemic and budget cuts, administrators may think about replacing teaching with automated AI solutions which is advantageous. If the use of AI in education increases, there may be chances of personal interaction decreasing and students getting addicted to technology and sometimes this can hurt students instead of helping them. The role of AI is limited to assisting and empowering teachers in making the learning process an enjoyable experience for students (Farrow, 2023; Fitria, 2021; Kengam, 2018).

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Faculty educators, student counselors, teaching assistants, and administrative staff may fear that the Intelligent Tutor System which is an application of AI will replace them. AI systems require large amounts of data including student and staff information which is confidential and leads to serious privacy concerns. When compared to the cost of installation, maintenance and repair of AI is very expensive. Only well-funded educational organizations can allow themselves to enjoy such high technology. When relying too much on this technology can lead to a lack of personal connection and can be detrimental to the user from this perspective. When something like a natural disaster or accident occurs and the AI needs repair, we never know how much data we might lose (Kengam, 2018; Kye et al., 2021; Popenici & Kerr, 2017; Tjahyanti et al., 2022).

There are still limited studies evaluating Artificial Intelligence (AI) features in the form of Virtual Mentors, Voice Assistants, Smart Content, Presentation Translators associated with the performance of a company's employees. Even though Artificial Intelligence (AI) is needed to improve the performance of a company's employees and not only increase the capacity of students through learning media by Artificial Intelligence (AI) features. For example, the Presentation Translator feature can be used by employees to make attractive presentations by translating foreign languages that company employees may often encounter. In addition, there are many other AI features that have not been discussed in this study, so it is necessary to evaluate the use of other AI features.

Due to the theoretical gap from previous studies, it is necessary to conduct research that aims to determine employee capacity building through the use of Artificial Intelligence (AI). This aims to maximize the use of AI features such as Voice Assistant, Virtual Mentor, Smart Content, Presentation Translator not only for teachers and students but also for employees and workforce.

CONCLUSION

Evaluation results on the use of Artificial Intelligence (AI) features show that Artificial Intelligence (AI) Voice Assistant, Virtual Mentor, Smart Content, Presentation Translator features are widely used in the education sector. The use of Artificial Intelligence (AI) Voice Assistant, Virtual Mentor, Smart Content, Presentation Translator features has proven to have a positive impact on teaching and learning activities for both

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educational institutions, educators, and students. These features will continue to grow and be widely used so as to provide rapid progress in the world of education. Even so, the role of humans as educators cannot be completely replaced by Artificial Intelligence (AI), the use of Artificial Intelligence (AI) today still has many obstacles, especially in developing countries.

The results of our systematic review show that Artificial Intelligence (AI) features such as Voice Assistant, Virtual Mentor, Smart Content, Presentation Translator focus mostly on the education sector. There is a need for further research regarding the use of Artificial Intelligence (AI) features such as Voice Assistants, Virtual Mentors, Smart Content, Presentation Translators in the world of work to increase employee capacity through the use of Artificial Intelligence (AI).

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